



**A PROJECT**  
**(Based on BCA - 601)**  
**ON**  
**eLEARNING WEBSITE**

*Submitted*

*By*

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**(Bachelor of Computer Application)**

**6<sup>th</sup> SEMESTER**

*Under the Guidance of*

**PROFESSOR PRABHAT KUMAR**

## **CANDIDATE'S DECLARATION**

We hereby declare that the project work being presented in this report entitled "**BiTByte** an eLearning website" submitted in the department of computer science, Faculty of BCA, L.N.D COLLEGE, Motihari is the authentic work carried out by us under the guidance of Professor **Prabhat Kumar**, Department of BCA, L.N.D COLLEGE, Motihari.

Date 22/12/2023

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**6<sup>TH</sup> SEMESTER**

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## ACKNOWLEDGEMENT

we would like to express our special thanks of gratitude to our teacher **Prof. Prabhat Kumar** who gave us the golden opportunity to do this wonderful project on the topic of **E-Learning Website**, which also helped us in doing a lot of research and we came to know about so many new things we are really thankful to him.

Secondly we would also like to thank our friends who helped us a lot in finalizing this project within the limited time frame.

# **SYNOPSIS**

**1. TITLE OF THE PROJECT**

BitByte an eLEARNING WEBSITE

**2. OBJECTIVE OF THE PROJECT**

The main objective of this project is to provide users the best resources which is available on any platform. This platform is very interactive to the users.

**3. LANGUAGE AND SOFTWARE TOOL USED**

HTML, CSS, JAVA SCRIPT, VISUAL STUDIO CODE.

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## **ABSTRACT**

This project introduces an innovative and all-encompassing education website tailored for Bachelor of Computer Applications (BCA) students.

Focused on addressing the challenges associated with mastering the concepts and diverse programming languages, our platform serves as a comprehensive learning resource.

The primary objective of the website is to provide a centralized hub for BCA students, offering extensive coverage of many programming languages alongside in-depth tutorials and practical exercises on various programming languages, multiple choice questions. Recognizing the pivotal role of logic building in computer science education, our platform places special emphasis on simplifying complex logical concepts, making them accessible and engaging for learners.

Key features of the project include a structured curriculum that aligns with BCA requirements, comprehensive notes, concise notes and interactive modules for logic building and problem solving, and a diverse array of programming language tutorials. The platform aims to foster a holistic learning experience, seamlessly integrating theoretical knowledge with practical programming skills.

Through an intuitive and user-friendly interface, our website encourages active student engagement, promoting self-paced learning and facilitating a deeper understanding of both logical principles and programming

languages. The project seeks to enhance the overall educational experience for BCA students, providing a reliable and accessible resource to support their academic journey.

In conclusion, this project represents a significant contribution to the field of online education, offering a specialized platform that uniquely addresses the needs of BCA students. By combining comprehensive coverage of the BCA syllabus with an emphasis on mathematics and programming proficiency, our education portal strives to empower learners and contribute to the advancement of computer science education.

## **INTRODUCTION**

Our eLearning Website Project is developed By Amitesh Kumar, Nikhil Kumar Kaushik, Aftab Alam, Khushi Kumari, Lucky Kumari.

This project address the challenge through the creation of a comprehensive education portal designed specifically for BCA students.

Our platform is meticulously crafted to serve as a one-stop solution, offering an immersive learning experience that seamlessly integrates the intricacies of the BCA syllabus with a special focus on logics and programming proficiency.



The significance of mathematics and logics in computer science education cannot be overstated. Understanding mathematical principles not only forms the foundation for various algorithms and computational processes but also sharpens critical thinking and problem-solving skills. In parallel, mastering diverse programming languages is essential for BCA students to navigate the dynamic landscape of information technology.

Our education website is strategically structured to cater to these fundamental aspects of BCA education. We have meticulously curated a comprehensive curriculum that not only aligns with academic requirements but also goes beyond, providing students with practical insights and real-world applications. The platform incorporates interactive modules dedicated to simplifying complex logical concepts and tutorials covering a spectrum of programming languages, ensuring a well-rounded educational experience.

Through an intuitive and user-friendly interface, our project aims to empower BCA students with the tools and resources necessary to excel in their academic pursuits. By fostering a dynamic learning environment that encourages self-paced exploration and hands-on practice, our education portal seeks to bridge the gap between theoretical knowledge and practical application.

As we embark on this journey to enhance the educational landscape for BCA students, we are committed to contributing to the development of well-rounded professionals who not only grasp the theoretical underpinnings of their field but also possess the practical skills demanded

by the ever-evolving IT industry. This project represents a significant stride towards creating a holistic and accessible learning platform, propelling BCA students towards success in their academic and professional endeavour.

## **REQUIREMENTS**

### **Internet Connection:**

Explanation: BitByte relies on a stable internet connection to provide real-time access to its content and features.

Importance: A consistent internet connection ensures that users can seamlessly navigate the website, access comprehensive notes, concise summaries, playlists, and quizzes without interruptions.

### **Supported Browsers:**

Explanation: BitByte is designed to work optimally on specific web browsers.

Importance: Using a supported browser, such as Google Chrome, Mozilla Firefox, Microsoft Edge, or Safari, is recommended to ensure a smooth and consistent user experience. While the website may function on other browsers, the mentioned ones are officially supported for the best performance.

### **JavaScript and Cookies:**

Explanation: JavaScript is a programming language that enhances website interactivity, and cookies are small pieces of data stored on a user's device.

Importance: Enabling JavaScript ensures that dynamic features on BitByte work as intended. Allowing cookies is essential for features like user authentication, personalization, and tracking progress.

### **Screen Resolution:**

Explanation: Screen resolution refers to the number of pixels displayed on a screen, affecting the clarity and quality of visuals.

Importance: BitByte is optimized for a minimum screen resolution of 1280 x 768 pixels. Meeting or exceeding this resolution ensures that users can view content with clarity and precision.

### **Mobile Devices:**

Explanation: BitByte is accessible on mobile devices, but it is recommended to use a desktop or laptop for the best experience.

Importance: While the website is responsive to mobile screens, certain features may be more accessible and user-friendly on larger screens. Users should ensure their mobile browsers are up-to-date for compatibility.

# SYSTEM ARCHITECTURE

## Frontend: Web Interface

Description: The frontend is the part of the website that users interact with directly. It includes the visual elements and user interface.

Technologies: HTML (for structure), CSS (for styling), JavaScript (for interactivity).

Key Features:

Provides the structure and layout of the website (HTML).

Styles the website to enhance aesthetics and user experience (CSS).

Adds interactivity and dynamic updates to the user interface (JavaScript).

## Data Management: Local Storage

Description: Local Storage is a feature in web browsers that allows the storage of data on the user's device.

Technologies: JavaScript Local Storage API.

Key Features:

Stores user-specific data locally on the user's device.

Reduces the need for frequent server requests by caching relevant data locally.

Enhances user experience by maintaining preferences, playlists, and progress between sessions.

### **User Interaction:**

Users interact with the HTML, CSS, and JavaScript components through their web browsers.

HTML provides the basic structure, CSS enhances the visual presentation, and JavaScript adds interactivity.

### **Content Retrieval:**

JavaScript fetches data either from predefined server endpoints or from the local storage on the user's device.

Dynamically updates the DOM to display the retrieved content.

### **Local Storage Usage:**

User preferences, playlists, and progress are stored in the browser's local storage.

This stored data persists across sessions, ensuring a personalized and consistent user experience.

**Conclusion:** The architecture, based on HTML, CSS, and JavaScript, ensures a lightweight and efficient user experience.

Developers can easily maintain and extend the project.

Users benefit from a responsive and interactive platform.

# SYSTEM PLANNING

We followed the waterfall model of SDLC in planning of this project. The Waterfall model is a linear and sequential approach, where each phase must be completed before the next one begins. This documentation outlines the key stages and processes involved in the development of our project.

## Waterfall Model Phases

### 1. Requirements Gathering and Analysis

Objective: Understand the project's objectives, functionalities, and constraints.

Key Activities:

Engage with stakeholders to gather requirements.

Analyze and document functional and non-functional requirements.

Define project scope and constraints.

### 2. System Design

Objective: Design the architecture and system specifications based on gathered requirements.

Key Activities:

Create a detailed system architecture.

Design user interfaces and experiences.

Define data structures and algorithms.

### **3. Implementation (Coding)**

Objective: Transform design specifications into executable code.

Key Activities:

Write and implement code following coding standards.

Perform unit testing to ensure individual components function as expected.

Collaborate with the frontend and backend teams to integrate code.

### **4. Testing**

Objective: Validate the developed system against the specified requirements.

Key Activities:

Conduct system testing to verify the entire system's functionality.

Identify and fix defects through rigorous testing.

Ensure the system meets quality and performance standards.

### **5. Deployment**

Objective: Deploy the system for end-users after successful testing and approval.

Key Activities:

Plan and execute the deployment process.

Monitor and address any issues during the initial release.

Ensure a smooth transition to the production environment.

## **6. Maintenance and Support**

Objective: Address issues, make improvements, and provide ongoing support.

Key Activities:

Monitor the system's performance and user feedback.

Implement updates, patches, and enhancements as needed.

Provide user support and address reported issues.

# **RESPONSIVE DESIGN**

## **What We Did**

### **1. Layout That Fits Any Screen**

How: We made sure the layout adjusts smoothly on any device.

Example: Buttons and menus look good whether you're on a tiny phone or a big computer.

### **2. Images That Work Everywhere**

How: Images adjust to different screens without looking weird.

Example: Pictures don't get too big or too small, keeping things nice and clear.



### **3. Text That's Easy to Read Everywhere**

How: Words and letters resize to stay readable on all devices.

Example: No more squinting on small screens or straining on big ones.

### **4. Smart Testing for All Devices**

How: We check how everything looks on phones, tablets, and computers.

Example: Making sure everything works smoothly, just like it should.

## **How It Helps You**

### **1. Easy to Use on Phones**

Example: Smooth scrolling, easy navigation, and big buttons for your fingertips.

### **2. Looks Good on Tablets**

Example: Whether you're holding it vertically or horizontally, it's designed to fit.

### **3. Looks Awesome on Computers**

Example: Big screens get a layout that uses the space well, making everything look great.

# FUTURE ENHANCEMENTS

## Planned Enhancements

### 1. More Features

What: We're adding cool new features.

Examples:

Advanced search filters for detailed notes.

User-generated playlists for collaboration.

### 2. Engagement Boost

What: Making the platform more interactive.

Examples:

Adding user feedback and comments.

Introducing badges and rewards for participation.

### 3. Better for All Devices

What: Improving how the platform looks on different devices.

Examples:

Smoother experience on new devices.

Easier navigation on mobile.

#### **4. More Content**

What: Expanding our content library.

Examples:

Adding notes for new programming languages.

Bringing in video tutorials.

#### **5. Fun Learning Elements**

What: Making learning more fun.

Examples:

Achievement badges for completing quizzes.

Points and rewards for active users.

#### **6. Understanding Users Better**

What: Getting insights into how users use the platform.

Examples:

Analytics for tracking progress.

Personalized learning suggestions.

### **How We'll Do It**

#### **1. Step-by-Step Improvements**

How: Taking small, regular steps to improve.

Example: Regularly releasing new features.

## **2. Your Opinions Matter**

How: Listening to what users want.

Example: Asking for feedback and ideas.

## **3. Working Together**

How: Having teams collaborate closely.

Example: Everyone working on different parts of the improvements.

## **Timeline**

### **1. Soon (Next 3-6 Months)**

New search filters.

Trying out the user feedback system.

### **2. Coming Up (Next 6-12 Months)**

Fun badges and rewards.

More notes for different languages.

### **3. Down the Road (Beyond 12 Months)**

Video tutorials.

Smart analytics for personalized learning.

## **CONCLUSION**

BitByte has achieved its goals, creating a valuable educational resource. Thanks to the team, contributors, and the user community for making it a success. As we conclude this phase, we look forward to the lasting impact BitByte will have in education.

## **References**

Code with Harry

W3 School

Apna College

JavaTpoint

ChatGpt

Khan academy

# SOURCE CODE

## Html Code for home page

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Learn With BitByte</title>
  <link rel="stylesheet" href="style.css">
</head>
<!-- this is header section -->
<header>
<nav class="navbar">

  <div class="navdiv">

    <div class="logo"><a
href="C:\Users\NIKHI\OneDrive\डेस्कटॉप\BitByte\index.html">BitByte</a> </div>
  <ul>
    <li><a href="D:\full\index.html">Home</a></li>
    <li><a href="BitByteC.html">C</a></li>
```

```
<li><a href="BitByteC++.html">C++</a></li>
<li><a href="BitByteJava.html">Java</a></li>
<li><a href="BitBytePython.html">Python</a></li>
<li><a href="BitBytePHP.html">PHP</a></li>
<li><a href="BitByteDS.html">DSA</a></li>
<button><a href="LOGIN.html">SignIn</a></button>
<button><a
href="http://127.0.0.1:5500/project/Project2/LOGIN.html">SignUp</a></button>
</ul>
```

```
</div>
</nav>
</header>
```

```
<!-- Start main section -->
<div class="content">
  <section class="main-section">
    <div class="content-left">
      <p class="section-label">Very proud to introduce </p>
      <h1 class="section-title">Learn with <span>BitByte.</span> </h1>
      <p class="section-description">Access a wealth of learning resources,
including video lectures, articles, notes, and more. <br>
      Stay updated with the latest trends and advancements in your chosen
field</p>
      <div class="button-group">
```

```
<a href="#" class="start-button">Join Community</a>
```

```
</div>
```

```
</div>
```

```
<div class="content-right">
```

```
<div class="image-container">
```

```

```

```
</div>
```

```
</div>
```

```
</section>
```

```
</div>
```

```
<!-- End main section -->
```

```
<!-- Start middle section -->
```

```
<div class="feature-container">
```

```
<div class="feature-content">
```

```
<div class="main-info">
```

```
<h2 class="main-title">
```

```
Why BitByte?
```

```
</h2>
```

```
<p class="main-discription">
```



Making learning easier and more convenient for you.</p>

</div>

<div class="feature-grid">

<!--card1-->

<div class="feature-card">

<div class="icon-container">



</div>

<div class="feature-info">

<div class="feature-title">

Data Structure

</div>

<div class="feature-description">

Data structures are the problem-solving pillars of coding. Learn all the foundational knowledge about all of the popular data structure that you need, to be well-versed in interviews.

</div>

</div>

</div>

<!--card2-->

<div class="feature-card">

```
<div class="icon-container">
```

```
  
```

```
</div>
```

```
<div class="feature-info">
```

```
  <div class="feature-title">
```

```
    Placement Preparation
```

```
  </div>
```

```
  <div class="feature-description">
```

```
    Ace the placement interviews by being knowledgeable in all well-known  
    data structures, popular problem-solving methods, and core computer sciences.
```

```
  </div>
```

```
</div>
```

```
</div>
```

```
<!--card3-->
```

```
<div class="feature-card">
```

```
  <div class="icon-container">
```

```
    
```

```
  </div>
```

```
<div class="feature-info">
```

```
  <div class="feature-title">
```

Hand Picked Question

</div>

<div class="feature-description">

Get access to hand-picked coding interview questions across categories & difficulty levels that will prepare you for every interview you would encounter.

</div>

</div>

</div>

<!--card4-->

<div class="feature-card">

<div class="icon-container">



</div>

<div class="feature-info">

<div class="feature-title">

Curated Content

</div>

<div class="feature-description">

Learn in-depth conceptual overviews, how to approach an algorithm, how to implement it & how to optimize it.

```
</div>
```

```
</div>
```

```
</div>
```

```
<!--card5-->
```

```
<div class="feature-card">
```

```
  <div class="icon-container">
```

```
    
```

```
  </div>
```

```
<div class="feature-info">
```

```
  <div class="feature-title">
```

```
    Learn from the best
```

```
  </div>
```

```
<div class="feature-description">
```

```
  Get access to lectures and get mentored by one of the best in the market.
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<!--card6-->
```

```
<div class="feature-card">
```

```
<div class="icon-container">
```

```
  
```

```
</div>
```

```
<div class="feature-info">
```

```
  <div class="feature-title">
```

```
    Learn Something new
```

```
  </div>
```

```
  <div class="feature-description">
```

```
    Learn new concepts daily, increase your productivity & reach your full  
    potential.
```

```
  </div>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<!-- End middle section -->
```

```
<!-- Start testimonial section1 -->
<div class="testimonial-container">
  <div class="testimonial-content">
    <h2 class="testimonial-title">
      What would you like to learn?
    </h2>
  <div class="testimonial-grid">
    <!-- card 1 -->
    <div class="testimonial-card">

      <div class="testimonial-avatar">
        
      </div>
      <div class="testimonial-details">
        <h3 class="testimonial-name">
          Data Science Courses
        </h3>
        <p class="testimonial-desc">
```

Data science is a multidisciplinary field that utilizes scientific methods, processes, algorithms, and systems to extract knowledge and insights from structured and unstructured data, fostering informed decision-making and innovation.

```
</p>
```

```
<a
```

```
href="https://www.youtube.com/playlist?list=PLEiEAq2VkUUIEQ7ENKU5Gv0HpRD
tOphC6" class="btn">Start Watching</a>
```

```
</div>
```

```
</div>
```

```
<!-- card 2 -->
```

```
<div class="testimonial-card">
```

```
<div class="testimonial-avatar">
```

```

```

```
</div>
```

```
<div class="testimonial-details">
```

```
<h3 class="testimonial-name">
```

```
Web Development Courses
```

```
</h3>
```

```
<p class="testimonial-desc">
```

```
Web development courses empower individuals to master the art of building websites and applications. Covering HTML, CSS, JavaScript, and more, these courses provide hands-on skills, enabling students to create responsive and dynamic web solutions.
```

```
</p>
```

```
<a href="https://www.youtube.com/playlist?list=PLDzeHZWIZsTo0wSBcg4-NMIbCOL8evLrD" class="btn">Start Watching</a>
```

```
</div>
```

```
</div>
```

```
<!-- card 3 -->
```

```
<div class="testimonial-card">
```

```
<div class="testimonial-avatar">
```

```

```

```
</div>
```

```
<div class="testimonial-details">
```

```
  <h3 class="testimonial-name">
```

```
    APP Development Courses
```

```
  </h3>
```

```
  <p class="testimonial-desc">
```

```
    Data science is a multidisciplinary field that utilizes scientific methods, processes, algorithms, and systems to extract knowledge and insights from structured and unstructured data, fostering informed decision-making and innovation.
```

```
  </p>
```

```
  <a
```

```
href="https://www.youtube.com/playlist?list=PLjVLYmrlmjGdDps6HAwOOVoAtBP AglOXL" class="btn">Start Watching</a>
```

```
</div>
```

```
</div>
```

```
</div>
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```
</div>
```

```
</div>
```

```
<!-- End testimonial section1 -->
```

```
<!-- Star testimonial section2 -->
```

```
<div class="testimonial2-container2">
```

```
  <div class="testimonial2-content">
```



```
<h2 class="testimonial2-title">
```

```
    Recorded Courses
```

```
</h2>
```

```
<div class="testimonial-grid">
```

```
<!-- card 1 -->
```

```
<div class="testimonial2-card">
```

```
    <div class="testimonial2-avatar">
```

```
        
```

```
    </div>
```

```
    <div class="testimonial2-details">
```

```
        <h3 class="testimonial-name">
```

```
            C Programming
```

```
        </h3>
```

```
        <p class="testimonial2-desc">
```

```
            C is a powerful, portable programming language developed by  
            Dennis Ritchie. It excels in system and application software, offering efficiency,  
            flexibility, and a large standard library for diverse programming needs.
```

```
        </p>
```

```
        <a
```

```
            href="https://www.youtube.com/playlist?list=PLEiEAq2VkUUIEQ7ENKU5Gv0HpRD  
            tOphC6" class="btn2">Start Watching</a>
```

```
    </div>
```

```
</div>
```

```
<!-- card 2 -->
```

```
<div class="testimonial2-card">
```

```
  <div class="testimonial2-avatar">
```

```
    
```

```
  </div>
```

```
  <div class="testimonial2-details">
```

```
    <h3 class="testimonial-name">
```

```
      C++ Programming
```

```
    </h3>
```

```
    <p class="testimonial2-desc">
```

C++ is a versatile, object-oriented programming language extending C. It provides features like classes, inheritance, polymorphism, and templates, making it suitable for various applications from system programming to game development.

```
    </p>
```

```
    <a
```

```
href="https://www.youtube.com/playlist?list=PLDzeHZWIZsTo0wSBcg4-NMIbCOL8evLrD" class="btn2">Start Watching</a>
```

```
  </div>
```

```
</div>
```

```
<!-- card 3 -->
```

```
<div class="testimonial2-card">
```

```
  <div class="testimonial2-avatar">
```

```
    
```

```
  </div>
```

```
  <div class="testimonial2-details">
```

```
<h3 class="testimonial2-name">
```

```
    Java Programming
```

```
</h3>
```

```
<p class="testimonial2-desc">
```

```
    Java is a high-level, object-oriented programming language known for its platform independence. It is widely used for building scalable and secure applications, ranging from mobile apps and web development to enterprise systems.
```

```
</p>
```

```
<a
```

```
href="https://www.youtube.com/playlist?list=PLjVLYmrlmjGdDps6HAwOOVoAtBP  
AgIOXL" class="btn2">Start Watching</a>
```

```
</div>
```

```
</div>
```

```
<div class="testimonial2-card">
```

```
<div class="testimonial2-avatar">
```

```

```

```
</div>
```

```
<div class="testimonial2-details">
```

```
<h3 class="testimonial2-name">
```

```
    Python Programming
```

```
</h3>
```

```
<p class="testimonial2-desc">
```

Python is one of the most demanded programming languages in the job market. Surprisingly, it is equally easy to learn and master Python. Let's commit our 100 days of code to python!

```
</p>
```

```
<a
```

```
href="https://www.youtube.com/playlist?list=PLu0W_9III9agwh1XjRt242xlpHhPT2llg" class="btn2">Start Watching</a>
```

```
</div>
```

```
</div>
```

```
<div class="testimonial2-card">
```

```
<div class="testimonial2-avatar">
```

```

```

```
</div>
```

```
<div class="testimonial2-details">
```

```
<h3 class="testimonial2-name">
```

```
PHP Programming
```

```
</h3>
```

```
<p class="testimonial2-desc">
```

PHP (Hypertext Preprocessor) is a server-side scripting language used for web development. It facilitates the creation of dynamic and interactive websites, handling tasks such as form processing, database integration, and server communication.

```
</p>
```

```
    <a
href="https://www.youtube.com/playlist?list=PLDzeHZWIZsTo0wSBcg4-
NM1bCOL8evLrD" class="btn2">Start Watching</a>
```

```
  </div>
```

```
</div>
```

```
<div class="testimonial2-card">
```

```
  <div class="testimonial2-avatar">
```

```
    
```

```
  </div>
```

```
  <div class="testimonial2-details">
```

```
    <h3 class="testimonial-name">
```

```
      Data Structure
```

```
    </h3>
```

```
    <p class="testimonial2-desc">
```

```
      Data structures are specialized formats for organizing and storing data to
enable efficient operations. Common types include arrays, linked lists, stacks,
queues, trees, and graphs. They are fundamental to computer science, optimizing
algorithms and enabling effective data manipulation and retrieval.
```

```
    </p>
```

```
    <a
```

```
href="https://www.youtube.com/playlist?list=PLDzeHZWIZsTo0wSBcg4-
NM1bCOL8evLrD" class="btn2">Start Watching</a>
```

```
  </div>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<div class="join">
```

```
<div class="join-content">
```

```
<div class="join-title">
```

```
<h2>Join our Coding family</h2>
```

```
<p class="join-dec">
```

If you would like to keep up on the latest posts and courses, come by and connect with us on the following links.

```
</p>
```

```
</div>
```

```
<div class="join-card">
```

```
<div class="join-logo">
```

```
<a href="https://www.linkedin.com/in/nikhil-kaushik-a7a408206/">
```

```

```

```
</a>
```

```
<h2 class="heading"><a href="https://www.linkedin.com/in/nikhil-kaushik-a7a408206/">Telegram</a></h2>
```

```
</div>
```

```
<div class="join-name"></div>
```

```
</div>
```

```
<div class="join-card">
```

```
<div class="join-logo">
  <a href="https://discord.com/">
    
  </a>
  <h2 class="heading"><a
href="https://discord.com/">Discord</a></h2>
</div>
<div class="join-name"></div>
</div>
<div class="join-card">
  <div class="join-logo">
    <a href="https://www.linkedin.com/in/nikhil-kaushik-
a7a408206/">
      
    </a>
    <h2 class="heading"><a
href="https://www.linkedin.com/in/nikhil-kaushik-
a7a408206/">Linkedin</a></h2>
  </div>
  <div class="join-name"></div>
</div>
</div>
</div>
<div class="footer">
```

```
<div class="heading">
```

```
  <h2>BitByte </h2>
```

```
</div>
```

```
<div class="content">
```

```
  <div class="services">
```

```
    <h4>Services</h4>
```

```
    <p><a
```

```
href="https://www.youtube.com/playlist?list=PLEiEAq2VkUUIEQ7ENKU5Gv0HpRD
tOphC6">Data Science</a></p>
```

```
    <p><a href="#">Tutorials</a></p>
```

```
    <p><a
```

```
href="https://www.youtube.com/playlist?list=PLDzeHZWIZsTo0wSBcg4-
NMIbCOL8evLrD">Web development</a></p>
```

```
    <p><a
```

```
href="https://www.youtube.com/playlist?list=PLjVLYmrlmjGdDps6HAwOOVoAtBP
AgIOXL">App development</p>
```

```
  </div>
```

```
<div class="social-media">
```

```
  <h4>Social</h4>
```

```
  <p>
```

```
    <a href="https://www.linkedin.com/in/nikhil-kaushik-a7a408206/"
```

```
    ><i class="fab fa-linkedin"></i> LinkedIn</a
```

```
    >
```

```
  </p>
```



```
<p>
  <a href="https://github.com"
    ><i class="fab fa-github"></i> Github</a
  >
</p>
```

```
<p>
  <a href="https://www.instagram.com/indiancodersgroup"
    ><i class="fab fa-instagram"></i> Instagram</a
  >
</p>
```

```
</div>
```

```
<div class="links">
```

```
  <h4>Quick links</h4>
```

```
  <p><a href="#">Home</a></p>
```

```
  <p><a href="#">About</a></p>
```

```
  <p><a href="#">Notes</a></p>
```

```
</div>
```

```
<div class="details">
```

```
  <h4 class="mail">Email</h4>
```

```
        <p><a href="#">BitByteNest@gmail.com</a></p>
    </div>
</div>

    <hr />

</footer>

</body>
</html>
```

## CSS Code for home page

```
* {
    text-decoration: none;
    margin: 0;
    padding: 0;
    box-sizing: border-box;
}

body {
    font-family: Calibri, sans-serif;
}
```

```
.navbar {  
  
    background: rgb(16, 12, 45);  
    font-family: Rubik,sans-serif;  
    padding-right: 15px;  
    padding-left: 15px;  
    height: 100px;  
}
```

```
.navdiv {  
    display: flex;  
    align-items: center;  
    justify-content: space-between;  
}
```

```
.logo a {  
    font-family: Rubik,sans-serif;  
    font-size: 45px;  
    font-weight: 600;  
    color: white;  
}
```

```
li {
```

```
list-style: none;
display: inline-block;
cursor: pointer;
}
```

```
li a {
  font-family: Rubik,sans-serif;

  color: white;
  font-size: 25px;
  font-weight: bold;
  margin-right: 25px;
  margin-top: 25px;
}
```

```
li:hover {
  border-bottom: 2px solid #BDB8D7;
}
```

```
button {
  background-color: black;
  margin-left: 15px;
  border-radius: 40px;
  padding: 10px;
```

```
width: 100px;
margin: 10px;
}
```

```
button:hover {
background-color: #1f1e24;
box-shadow: 0 12px 16px rgb(180, 161, 161);
}
```

```
button a {

color: white;
font-weight: bold;
font-size: 15px;
}
```

```
/* Styles for the scrollbar */
```

```
body::-webkit-scrollbar {
width: 10px;
}
```

```
body::-webkit-scrollbar-thumb {
background-color: rgb(16, 12, 45);
```

```
border-radius: 8px;
}

body::-webkit-scrollbar-track {
background-color: #5c4f4f;
border-radius: 10px;
}

nav ul li {
list-style: none;
padding: 0 12px;
}

/* Responsive Design */
@media (max-width: 768px) {
.navdiv {
flex-direction: column;
align-items: flex-start;
}

.logo a {
margin-bottom: 10px;
}
```

```
li {  
    display: block;  
    margin-bottom: 10px;  
    font-size: 10px;  
}
```

```
button {  
    margin-left: 0;  
}  
}
```

```
@media (max-width: 600px) {  
    .navbar {  
        height: auto;  
    }  
}
```

```
.logo a {  
    font-size: 35px;  
}
```

```
li a {  
    font-size: 20px;  
    margin-right: 15px;
```

```
}
```

```
button {  
  padding: 8px;  
  width: 60px;  
}
```

```
}
```

```
}
```

```
.main-section {  
  max-width: 1280px;  
  display: flex;  
  flex-direction: column;  
  gap: 2rem;  
  padding: 5rem;  
  font-size: 1rem;  
  margin: 0 auto;  
}
```

```
}
```

```
.content-left {  
  text-align: left;  
  margin-left: 1rem;  
  animation: slideFromLeft 1s ease forwards;  
  opacity: 0;  
}
```

```
}
```



```
@keyframes slideFromLeft {  
  0% {  
    opacity: 0;  
    transform: translateX(-100%);  
  }  
  100% {  
    opacity: 1;  
    transform: translateX(0);  
  }  
}
```

```
.section-label {  
  font-size: 1.2rem;  
  color: rgb(16, 12, 45);  
  font-weight: bold;  
  
  font-family: Rubik, sans-serif;  
}
```

```
.section-title {  
  font-size: 3rem;  
  padding: 0rem;  
  color: rgb(16, 12, 45);  
}
```

```
font-family:Rubik, sans-seri ;  
  
}
```

```
.section-description {  
font-size: 1.2rem;  
margin-top: 1rem;  
font-family:Rubik, sans-seri ;  
color: #5c4f4f;  
font-weight: bold;  
  
}
```

```
.button-group {  
display: flex;  
gap: 2rem;  
padding: 0rem;  
margin-top: 2.0rem;  
align-items: left;  
justify-content: flex-start;  
}
```

```
.start-button {  
  border: none;  
  border-radius: 6rem;  
  background-color: rgb(16, 12, 45);  
  color: white; /* Set the desired font color */  
  transition: all 0.1s;  
  padding: 0.75rem 1.5rem;  
  font-size: 1.3rem;  
  font-weight: bold;  
  font-weight: 600;  
  
}
```

```
.start-button:hover {  
  background-color: rgb(12, 9, 31);  
  box-shadow: 0 12px 16px rgb(180, 161, 161);  
}
```

```
.content-right {  
  display: flex;  
  align-items: center;  
  justify-content: center;  
}
```

```
.image-container {  
  border: none;  
  border-radius: 1.25rem;  
  overflow: hidden;  
  box-shadow: 0px 4px 8px rgba(0, 0, 0, 0.1);  
  height: 57vh;  
}
```

```
.section-image {  
  height: 100%;  
  width: 100%;  
}
```

```
@media screen and (min-width: 768px) {  
  .main-section {  
    flex-direction: row;  
  }  
  .content-left {  
    max-width: 50%;  
    text-align: left;  
  }  
  .section-title {  
    padding-left: 0;  
  }  
}
```

```
.button-group {
  justify-content: flex-start;
  padding-left: 0;
}

.section-label {
  font-size: 1rem;
}

.section-title {
  font-size: 3rem;
}
}

.feature-container{
  background-color: rgb(248, 247, 247);
  padding: rem 0;
  text-align: center;
  margin-left: 1rem;
}

.feature-content{
  max-width: 800px;
  margin: 0 auto;
  padding: 0 3rem;
}

}

.main-title{
```

```
color: rgb(16, 12, 45);
font-size: 1.2rem;
font-family: Rubik, sans-serif
}

.section-title span {
  position: relative;
}

.section-title span::after {
  content: '|';
  position: absolute;
  right: 0;

  background-color: white;
  width: 100%;
  animation: typing 2s steps(14) alternate infinite,
             line 1s infinite;
}

@keyframes typing{
  to{
    width: 0%;
  }
}
```

```
@keyframes line {  
  50%{  
    color: transparent;  
  }  
}
```

```
.main-discription{  
  text-align: center;  
  font-size: 1rem;  
  font-size:3rem;  
  font-weight: 800;  
  font-family: Rubik,sans-serif;  
  margin-bottom: 4rem;  
}
```

```
.feature-grid{  
  display: grid;  
  gap:3rem ;  
  place-content: center;  
  grid-template-columns:repeat(2,1fr) ;  
  border-color:rgba(77, 21, 4, 0.39);  
  border-width: 6px;
```

```
}
```

```
.feature-grid {
```

```
  display: grid;
```

```
  gap: 3rem;
```

```
  place-content: center;
```

```
  animation: slideFromLeft 1s ease forwards;
```

```
}
```

```
@keyframes slideFromLeft {
```

```
  0% {
```

```
    opacity: 0;
```

```
    transform: translateX(-100%);
```

```
  }
```

```
  100% {
```

```
    opacity: 1;
```

```
    transform: translateX(0);
```

```
  }
```

```
}
```

```
.feature-title{
```



```
font-weight: bold;
font-size: 18px;
color: rgb(16, 12, 45);
```

```
}
```

```
.feature-description{
  max-width: 100%;
  color: rgb(119 124 133);
  font-size: 1rem;
  line-height: 1.5rem;
  font-family:Rubik,sans-serif ;
  justify-content: center;
  align-items: center;
  font-weight: bold;
```

```
}
```

```
.feature-info{
  font-family:Rubik,sans-serif ;
  font-size: 16px;
```

```
}
```

```
.feature-card{
  display: flex;
  flex-direction: column;
```

```
justify-content: center;
align-items: center;
background-color:rgb(253, 253, 253);
border-radius:0.375rem ;
font-size: 1rem;
font-family:Rubik,sans-serif ;
line-height: 1.5rem;
box-shadow: 0px 4px 8px rgba(0, 0, 0, 0.1);
border-bottom: 5px solid rgb(16, 12, 45);
padding: 1.5rem;
transition: transform 0.3s ease-in-out; /* Corrected the typo here */

}

.feature-card:hover {
  transform: scale(1.1);
}

.icon-container{
  background-color:white ;
  height: 4rem;width: 4rem;
  border-radius: 50%;
  display: flex;
  justify-content: center;
  align-items: center;
}
```

```
.feature-svg{
  width: 1.5rem;
  height:1.5rem ;
}

.feature-card:nth-child(2){
  border-bottom: 5px solid rgb(75, 224, 212);
}

.feature-card:nth-child(3){
  border-bottom: 5px solid rgb(233, 105, 226);
}

.feature-card:nth-child(4){
  border-bottom: 5px solid rgb(104, 38, 226);
}

.feature-card:nth-child(5){
  border-bottom: 5px solid rgba(70, 134, 172, 0.904);
}

.feature-card:nth-child(6){
  border-bottom: 5px solid rgb(206, 130, 32);
}

.testimonial-container{
  background-color: var(--background-color);
  padding: 2rem;
  margin: 0 auto;
  max-width: 1280px;
```

```
}  
.testimonial-content{  
  display: flex;  
  flex-direction: column;  
  gap: 2rem;
```

```
}  
.testimonial-title{  
  
  color: rgb(16, 12, 45);  
  font-size: 2rem ;  
  font-family: Rubik, sans-serif;  
  justify-content: center;  
  text-align: center;  
  font-weight: bold;
```

```
}  
  
.testimonial-grid{  
  display: grid;  
  grid-template-columns: repeat(auto-fill, minmax(300px, 1fr));  
  grid-gap: 2rem;  
}
```

```
.testimonial-card{
  display: flex;
  flex-direction: column;
  justify-content: center;
  align-items: center;
  background-color:rgb(253, 253, 253);
  border-radius:0.375rem ;
  font-size: 1rem;
  font-family:Rubik,sans-serif ;
  line-height: 1.5rem;
  box-shadow: 0px 4px 8px rgba(0, 0, 0, 0.1);
  border-bottom: 5px solid rgb(16, 12, 45);
  padding: 1.3rem;
  transition: transform 0.3s ease-in-out;
}
```

```
.testimonial-card:hover{
  transform: scale(1.05);;
  box-shadow: 0 4px 8px rgba(0,0,0,0.2);
  border: 1px solid blue;
}
```

```
.testimonial-card:nth-child(2){
  border-bottom: 5px solid rgb(206, 130, 32);
```

```
}  
.testimonial-card:nth-child(3){  
  border-bottom: 5px solid rgb(104, 38, 226);  
}
```

```
.testimonial-avatar img{  
  height: 15rem;  
  width: 20rem;  
  border-radius: 1rem;  
}
```

```
.testimonial-text{  
  color: #555;  
  font-size: 0.875rem;  
}
```

```
.testimonial-name{  
  
  font-size: 1rem;  
  font-weight: bold;  
  font-size: 18px;
```

```
    color: rgb(16, 12, 45);
margin-top: 0.5rem;
margin-bottom: 0.5rem;
justify-content: center;
text-align: center;
}
```

```
.testimonial-desc{
  font-size: 0.875rem;
  color: #777;
}
```

```
.btn {
  border: none;
  display: inline-block;
  padding: 10px 20px;

  background-color: rgb(16, 12, 45);
  color: #fff;
  text-decoration: none;
  border-radius: 0.375rem;
  transition: background-color 0.3s ease;
  transition: all 0.1s;
  font-size: 1.2rem;
```

```
font-weight: 600;
font-weight: bold;
margin-top: 1rem;
margin-left: 6.6rem;
}
```

```
.btn:hover {
background-color:rgb(12, 9, 31);
box-shadow: 0 12px 16px rgb(180, 161, 161);
}
```

```
.testimonial-desc {
color: rgb(119, 124, 133);
font-size: 1rem;
line-height: 1.5rem;
font-family: Rubik, sans-serif;
text-align: center; /* Center the text horizontally */
font-weight: bold;
}
```

```
.testimonial2-container2{
background-color: var(--background-color);
padding: 2rem;
margin: 0 auto;
max-width: 1280px;
```



```
}  
.testimonial2-content{  
  display: flex;  
  flex-direction: column;  
  gap: 2rem;
```

```
}  
.testimonial2-title{  
  
  color: rgb(16, 12, 45);  
  font-size: 2rem ;  
  font-family: Rubik, sans-serif;  
  justify-content: center;  
  text-align: center;  
  font-weight: bold;
```

```
}  
  
.testimonial2-grid{  
  display: grid;  
  grid-template-columns: repeat(auto-fill, minmax(300px, 1fr));  
  grid-gap: 2rem;  
}
```

```
.testimonial2-card{
  display: flex;
  flex-direction: column;
  justify-content: center;
  align-items: center;
  background-color:rgb(253, 253, 253);
  border-radius:0.375rem ;
  font-size: 1rem;
  font-family:Rubik,sans-serif ;
  line-height: 1.5rem;
  box-shadow: 0px 4px 8px rgba(0, 0, 0, 0.1);
  border-bottom: 5px solid rgb(16, 12, 45);
  padding: 1.3rem;
  transition: transform 0.3s ease-in-out;
}
```

```
.testimonial2-card:hover{
  transform: scale(1.05);;
  box-shadow: 0 4px 8px rgba(0,0,0,0.2);
  border: 1px solid blue;
}
```

```
.testimonial2-card:nth-child(2){
  border-bottom: 5px solid rgb(206, 130, 32);
```

```
}  
.testimonial2-card:nth-child(3){  
  border-bottom: 5px solid rgb(104, 38, 226);  
}
```

```
.testimonial2-avatar img{  
  height: 15rem;  
  width: 20rem;  
  border-radius: 1rem;  
}
```

```
.testimonial2-text{  
  color: #555;  
  font-size: 0.875rem;  
}
```

```
.testimonial2-name{  
  
  font-size: 1rem;  
  font-weight: bold;  
  font-size: 18px;
```

```
    color: rgb(16, 12, 45);  
margin-top: 0.5rem;  
margin-bottom: 0.5rem;  
justify-content: center;  
text-align: center;  
}
```

```
.testimonial2-desc{  
    font-size: 0.875rem;  
    color: #777;  
  
}
```

```
.btn2 {  
    border: none;  
    display: inline-block;  
    padding: 10px 20px;  
  
    background-color: rgb(16, 12, 45);  
    color: #fff;  
    text-decoration: none;  
    border-radius: 0.375rem;  
    transition: background-color 0.3s ease;  
    transition: all 0.1s;  
    font-size: 1.2rem;
```

```
font-weight: 600;
font-weight: bold;
margin-top: 1rem;
margin-left: 5rem;
}
```

```
.btn2:hover {
background-color:rgb(12, 9, 31);
box-shadow: 0 12px 16px rgb(180, 161, 161);
}
```

```
.testimonial2-desc {
color: rgb(119, 124, 133);
font-size: 1rem;
line-height: 1.5rem;
font-family: Rubik, sans-serif;
text-align: center; /* Center the text horizontally */
font-weight: bold;
}
```

```
.join-content {
display: flex;
flex-direction:column;
align-items: center;
text-align: center;
}
```

```
.join-title{  
  font-size: 1.5rem;
```

```
}
```

```
.join-dec {  
  color:rgb(12, 9, 31);  
  font-weight: bold;
```

```
}
```

```
.footer {  
  background-color: rgb(16, 12, 45);  
  color: #f8f5f5f5;  
  font-family: Rubik, sans-serif;  
  margin-top: 2rem;
```

```
  width: 100%;
```

```
  bottom: 0;
```

```
  left: 0;
```

```
}
```

```
.footer .heading {  
  color:white;  
  max-width: 1010px;  
  width: 80%;  
  font-weight: 800;
```

```
margin: 0 auto;
margin-bottom: 2rem;
font-family: "Rubik, sans-serif";
font-size: 2rem;
margin-left: 9rem;

}
```

```
.footer .content {
display: flex;
justify-content: space-evenly;
margin: 1.6rem;
font-size: 14px;
}
```

```
.box {
height: 30px;
display: flex;
cursor: pointer;
background: #f0f0f0;
border-radius: 30px;
align-items: center;
box-shadow: 0 10px 25px rgba(0, 0, 0, 0.3);
}
```

```
}
```

```
.container.nav.ul.li {
```

```
  font-size: 60;
```

```
}
```

```
.footer .content p {
```

```
  margin-bottom: 1.3rem;
```

```
}
```

```
.footer .content a {
```

```
  text-decoration: none;
```

```
  color: #f5f5f5;
```

```
  font-weight: 600;
```

```
}
```

```
.footer .content a:hover {
```

```
  border-bottom: 2px solid #BDB8D7;
```

```
}
```

```
.footer .content h4 {
```

```
  margin-bottom: 1.3rem;
```

```
  font-size: 16px;
```

```
}
```



```
footer {  
  text-align: center;  
  margin-bottom: 2rem;  
  width: 100%;  
  position: fixed;  
}
```

```
footer hr {  
  margin: 2rem 0;  
}
```

```
@media (max-width: 768px) {  
  .footer .content {  
    flex-direction: column;  
    font-size: 14px;  
  }  
}
```

```
.footer {  
  position: unset;  
}  
}
```

```
@media (min-width: 700px) and (max-width: 600px) {
```

```
.footer .content,  
.footer {  
  font-size: 14px;  
}  
}
```

```
@media (orientation: landscape) and (max-height: 100px) {  
  .footer {  
    position: unset;  
  }  
}
```

```
.flex {  
  display: flex;  
}
```

```
.items-center {  
  align-items: center;  
}
```

```
.justify-center {  
  justify-content: center;  
}
```

# Html code for login page

```
<!DOCTYPE html>
<!-- Coding By CodingNepal - codingnepalweb.com -->
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title> Responsive Login and Signup Form </title>

  <!-- CSS -->
  <link rel="stylesheet" href="login.css">

  <!-- Boxicons CSS -->
  <link href='https://unpkg.com/boxicons@2.1.2/css/boxicons.min.css'
rel='stylesheet'>

</head>
<body>
  <section class="container forms">
    <div class="form login">
      <div class="form-content">
        <header>Login</header>
```

```
<form action="#">
  <div class="field input-field">
    <input type="email" placeholder="Email" class="input">
  </div>

  <div class="field input-field">
    <input type="password" placeholder="Password"
class="password">
    <i class='bx bx-hide eye-icon'></i>
  </div>

  <div class="form-link">
    <a href="#" class="forgot-pass">Forgot password?</a>
  </div>

  <div class="field button-field">
    <button>Login</button>
  </div>
</form>

<div class="form-link">
  <span>Don't have an account? <a href="#" class="link signup-
link">Signup</a></span>
</div>
</div>
```

```
<div class="line"></div>
```

```
<div class="media-options">
```

```
<a
```

```
href="https://www.facebook.com/login/?privacy_mutation_token=eyJ0eXBlljowL  
CJjcmVhdGlvbl90aW1ljoxNzAzMDU5NzY4LCJjYWxsc2l0ZV9pZCI6MjY5NTQ4NDUz  
MDcyMDk1MX0%3D" class="field facebook">
```

```
<i class='bx bxl-facebook facebook-icon'></i>
```

```
<span>Login with Facebook</span>
```

```
</a>
```

```
</div>
```

```
<div class="media-options">
```

```
<a
```

```
href="https://www.google.com/search?q=google&oq=google+++&gs_lcrp=EgZjaH  
JvbWUyBggAEEUYOTIGCAEQRRg7MgYIAhBFGDwyBggDEEUQTIGCAQRRhBMgYI  
BRBFGEEyBggGEEUYPDIGCAcQRRg80gEIMjl0N2owajeoAgCwAgA&sourceid=chro  
me&ie=UTF-8" class="field google">
```

```

```

```
<span>Login with Google</span>
```

```
</a>
```

```
</div>
```

```
</div>
```

```
<!-- Signup Form -->
```

```
<div class="form signup">
```

```
  <div class="form-content">
```

```
    <header>Signup</header>
```

```
    <form action="#">
```

```
      <div class="field input-field">
```

```
        <input type="email" placeholder="Email" class="input">
```

```
      </div>
```

```
      <div class="field input-field">
```

```
        <input type="password" placeholder="Create password"  
class="password">
```

```
      </div>
```

```
      <div class="field input-field">
```

```
        <input type="password" placeholder="Confirm password"  
class="password">
```

```
        <i class='bx bx-hide eye-icon'></i>
```

```
      </div>
```

```
      <div class="field button-field">
```

```
        <button>Signup</button>
```

```
      </div>
```

```
    </form>
```

```
<div class="form-link">
  <span>Already have an account? <a href="#" class="link login-
link">Login</a></span>
</div>
</div>
```

```
<div class="line"></div>
```

```
<div class="media-options">
  <a href="#" class="field facebook">
    <i class='bx bxl-facebook facebook-icon'></i>
    <span>Login with Facebook</span>
  </a>
</div>
```

```
<div class="media-options">
  <a href="#" class="field google">
    
    <span>Login with Google</span>
  </a>
</div>
```

```
</div>
</section>
```

```
<!-- JavaScript -->  
<script src="test.js"></script>  
</body>  
</html>
```

## CSS code for login page

```
/* Google Fonts - Poppins */  
  
@import  
url('https://fonts.googleapis.com/css2?family=Poppins:wght@300;400;500;600&dis  
isplay=swap');  
  
*{  
    margin: 0;  
    padding: 0;  
    box-sizing: border-box;  
    font-family: 'Poppins', sans-serif;  
}  
  
.container{  
    height: 100vh;  
    width: 100%;  
    display: flex;  
    align-items: center;
```



```
    justify-content: center;
    background-color: rgb(16, 12, 45);
    column-gap: 30px;
}
.form{
    position: absolute;
    max-width: 430px;
    width: 100%;
    padding: 30px;
    border-radius: 6px;
    background: #FFF;
}
.form.signup{
    opacity: 0;
    pointer-events: none;
}
.forms.show-signup .form.signup{
    opacity: 1;
    pointer-events: auto;
}
.forms.show-signup .form.login{
    opacity: 0;
    pointer-events: none;
}
```

```
header{
  font-size: 28px;
  font-weight: 600;
  color: #232836;
  text-align: center;
}
form{
  margin-top: 30px;
}
.form .field{
  position: relative;
  height: 50px;
  width: 100%;
  margin-top: 20px;
  border-radius: 6px;
}
.field input,
.field button{
  height: 100%;
  width: 100%;
  border: none;
  font-size: 16px;
  font-weight: 400;
  border-radius: 6px;
```

```
}  
.field input{  
  outline: none;  
  padding: 0 15px;  
  border: 1px solid rgb(16, 12, 45);  
}  
.field input:focus{  
  border-bottom-width: 2px;  
}  
.eye-icon{  
  position: absolute;  
  top: 50%;  
  right: 10px;  
  transform: translateY(-50%);  
  font-size: 18px;  
  color: #8b8b8b;  
  cursor: pointer;  
  padding: 5px;  
}  
.field button{  
  color: #fff;  
  background-color: #0171d3;  
  transition: all 0.3s ease;  
  cursor: pointer;
```

```
}  
.field button:hover{  
    background-color: #016dcb;  
}  
.form-link{  
    text-align: center;  
    margin-top: 10px;  
}  
.form-link span,  
.form-link a{  
    font-size: 14px;  
    font-weight: 400;  
    color: #232836;  
}  
.form a{  
    color: #0171d3;  
    text-decoration: none;  
}  
.form-content a:hover{  
    text-decoration: underline;  
}  
.line{  
    position: relative;  
    height: 1px;
```

```
width: 100%;
margin: 36px 0;
background-color: #d4d4d4;
}
.line::before{
  content: 'Or';
  position: absolute;
  top: 50%;
  left: 50%;
  transform: translate(-50%, -50%);
  background-color: #FFF;
  color: #8b8b8b;
  padding: 0 15px;
}
.media-options a{
  display: flex;
  align-items: center;
  justify-content: center;
}
a.facebook{
  color: #fff;
  background-color: #4267b2;
}
a.facebook .facebook-icon{
```

```
height: 28px;
width: 28px;
color: #0171d3;
font-size: 20px;
border-radius: 50%;
display: flex;
align-items: center;
justify-content: center;
background-color: #fff;
}
.facebook-icon,
img.google-img{
  position: absolute;
  top: 50%;
  left: 15px;
  transform: translateY(-50%);
}
img.google-img{
  height: 20px;
  width: 20px;
  object-fit: cover;
}
a.google{
  border: 1px solid #CACACA;
```

```
}  
a.google span{  
    font-weight: 500;  
    opacity: 0.6;  
    color: #232836;  
}  
  
@media screen and (max-width: 400px) {  
    .form{  
        padding: 20px 10px;  
    }  
}  
}
```

## Html code for C language sub page

```
<!DOCTYPE html>  
<html>  
    <head>  
        <title>BitByte</title>  
  
        <link rel="stylesheet" href="BitByte.css">
```

```
</head>
```

```
<body>
```

```
  <table class="table1">
```

```
    <tr>
```

```
      <td class="tr1">
```

```
        <big><h1>C Language</h1></big>
```

```
      </td>
```

```
    </tr>
```

```
    <tr>
```

```
      <td class="tr1">
```

```
        
```

```
        <br><h2>Comprehensive</h2>
```

```
        Get access to comprehensive C language notes covering all the<br>
```

```
        important concepts and topics...<br>
```

```
        <br><br><a
```

```
href="CompCIntroduction.html"><button>explore</button></a>
```

```
      </td>
```

```
    </tr>
```

```
    <tr>
```

```
      <td class="tr1">
```

```
        
```

```
        <br><h2>Concise</h2>
```



Our concise C notes provides a quick and easy reference for essential<br>

Java programming knowledge...<br>

<br><br><a href="ConciseC.pdf"><button>explore</button></a>

</td>

</tr>

<tr>

<td class="tr1">



<br><h2>Practical</h2>

Practice C programming with our collection of logic building questions<br>

and multiple choice quizzes...<br>

<br><br><a href="PracticalC.html"><button>explore</button> </a>

</td>

</tr>

<tr>

<td class="tr1">



<br><h2>Tutorials</h2>

Fuel your study sessions with curated playlists from the best YouTube channels<br>

where learning meets inspiration...<br>

```
        <br><br><a
href="https://youtube.com/playlist?list=PLsyeobzWxl7pe_liTfNyr55kwJPWbgxB5
&si=CGbgyc0FwoJAOKxR"><button>explore</button></a>
    </td>
</tr>

</table>
</body>
</html>
```

## Html code for C++ sub page

```
<!DOCTYPE html>
<html>
  <head>
    <title>BitByte</title>

    <link rel="stylesheet" href="BitByte.css">

  </head>
  <body>
    <table class="table1">

      <tr>
```

```
<td class="tr1">
  <big><h1>C++ Language</h1></big>
</td>
</tr>

<tr>
  <td class="tr1">
    
    <br><h2>Comprehensive</h2>
    Get access to comprehensive C++ language notes covering all the<br>
    important concepts and topics...<br>
    <br><br><a
href="CompC++Introduction.html"><button>explore</button></a>
  </td>
</tr>

<tr>
  <td class="tr1">
    
    <br><h2>Concise</h2>
    Our concise C++ notes provides a quick and easy reference for
essential<br>
    Java programming knowledge...<br>
    <br><br><a href="ConciseC++.pdf"><button>explore</button></a>
  </td>
```

```
</tr>
```

```
<tr>
```

```
<td class="tr1">
```

```

```

```
<br><h2>Practical</h2>
```

```
Practice C++ programming with our collection of logic building  
questions<br>
```

```
and multiple choice quizzes...<br>
```

```
<br><br><a href="PracticalC++.html"><button>explore</button></a>
```

```
</td>
```

```
</tr>
```

```
<tr>
```

```
<td class="tr1">
```

```

```

```
<br><h2>Tutorials</h2>
```

```
Fuel your study sessions with curated playlists from the best YouTube  
channels<br>
```

```
where learning meets inspiration...<br>
```

```
<br><br><a
```

```
href="https://youtube.com/playlist?list=PLsyeobzWxl7pe_liTfNyr55kwJPWbgxB5  
&si=CGbgyc0FwoJAOKxR"><button>explore</button></a>
```

```
</td>
```

```
</tr>
```

```
</table>
</body>
</html>
```

## Html code for Java sub page

```
<!DOCTYPE html>
<html>
  <head>
    <title>BitByte</title>

    <link rel="stylesheet" href="BitByte.css">

  </head>
  <body>
    <table class="table1">

      <tr>
        <td class="tr1">
          <big><h1>Java</h1></big>
        </td>
      </tr>
```

```
<tr>
```

```
<td class="tr1">
```

```

```

```
<br><h2>Comprehensive</h2>
```

```
Get access to comprehensive Java language notes covering all the<br>
```

```
important concepts and topics...<br>
```

```
<br><br><a
```

```
href="CompJavaIntroduction.html"><button>explore</button></a>
```

```
</td>
```

```
</tr>
```

```
<tr>
```

```
<td class="tr1">
```

```

```

```
<br><h2>Concise</h2>
```

```
Our concise Java notes provides a quick and easy reference for  
essential<br>
```

```
Java programming knowledge...<br>
```

```
<br><br><a href="Concisejava.pdf"><button>explore</button></a>
```

```
</td>
```

```
</tr>
```

```
<tr>
```

```
<td class="tr1">
```

```

```

```
<br><h2>Practical</h2>
Practice Java programming with our collection of logic building
questions<br>
and multiple choice quizzes...<br>
<br><br><a href="PracticalJava.html"><button>explore</button></a>
</td>
</tr>

<tr>
<td class="tr1">

<br><h2>Tutorials</h2>
Fuel your study sessions with curated playlists from the best YouTube
channels<br>
where learning meets inspiration...<br>
<br><br><a
href="https://youtube.com/playlist?list=PLfqMhTWNBT3LtFWcvwpqTkUSIB32kJo
p&si=IHQdMuKn-8TxQjPT"><button>explore</button></a>
</td>
</tr>

</table>
</body>
</html>
```

## Html code for PHP sub page

```
<!DOCTYPE html>
<html>
  <head>
    <title>BitByte</title>

    <link rel="stylesheet" href="BitByte.css">

  </head>
  <body>
    <table class="table1">

      <tr>
        <td class="tr1">
          <big><h1>PHP Language</h1></big>
        </td>
      </tr>

      <tr>
        <td class="tr1">
          
        </td>
      </tr>
    </table>
  </body>
</html>
```



<br><h2>Concise</h2>

Our concise PHP notes provides a quick and easy reference for essential<br>

Java programming knowledge...<br>

<br><br><a href="Concisephp.pdf"><button>explore</button></a>

</td>

</tr>

<tr>

<td class="tr1">



<br><h2>Practical</h2>

Practice PHP programming with our collection of logic building questions<br>

and multiple choice quizzes...<br>

<br><br><a href="PracticalPHP.html"><button>explore</button></a>

</td>

</tr>

<tr>

<td class="tr1">



<br><h2>Tutorials</h2>

Fuel your study sessions with curated playlists from the best YouTube channels<br>

```
        where learning meets inspiration...<br>
        <br><br><a
href="https://youtube.com/playlist?list=PLsyeobzWxl7pe_liTfNyr55kwJPWbgxB5
&si=CGbgyc0FwoJAOKxR"><button>explore</button></a>
        </td>
    </tr>

</table>
</body>
</html>
```

## Html code for python sub page

```
<!DOCTYPE html>
<html>
  <head>
    <title>BitByte</title>

    <link rel="stylesheet" href="BitByte.css">

  </head>
  <body>
    <table class="table1">
```

```
<tr>
  <td class="tr1">
    <big><h1>Python</h1></big>
  </td>
</tr>
```

```
<tr>
  <td class="tr1">
    
    <br><h2>Comprehensive</h2>
    Get access to comprehensive Python language notes covering all
the<br>
    important concepts and topics...<br>
    <br><br><a
href="CompPythonIntroduction.html"><button>explore</button></a>
  </td>
```

```
</tr>

<tr>
  <td class="tr1">
    
    <br><h2>Concise</h2>
    Our concise Python notes provides a quick and easy reference for
essential<br>
    Java programming knowledge...<br>
```

```
<br><br><a href="Concisepython.pdf"><button>explore</button></a>
</td>
</tr>

<tr>
<td class="tr1">

<br><h2>Practical</h2>
Practice Python programming with our collection of logic building
questions<br>
and multiple choice quizzes...<br>
<br><br><a
href="PracticalPython.html"><button>explore</button></a>
</td>
</tr>

<tr>
<td class="tr1">

<br><h2>Tutorials</h2>
Fuel your study sessions with curated playlists from the best YouTube
channels<br>
where learning meets inspiration...<br>
<br><br><a
href="https://youtube.com/playlist?list=PLsyeobzWxl7pe_liTfNyr55kwJPWbgxB5
&si=CGbgyc0FwoJAOKxR"><button>explore</button></a>
```

```
        </td>
    </tr>

</table>
</body>
</html>
```

## CSS code for all the sub pages

```
.table1{
    font-family: Georgia, 'Times New Roman', Times, serif;
    color: white;
    width: 100%;
    background-color: rgb(16, 12, 45);
    position: absolute;
    border: 1px solid;
}
```

```
.tr1{

    padding: 60px;
}
```

```
.img1{
    float: right;
```

```
width: 30%;
height: 20%;
border-radius: 20px;
transition: 1s ease;
}

.img1:hover{
  /*transform: scaleX(-1);*/

  transform: scale(1.1);
  transition: 0.5s ease;
}

img2{
  border-radius: 50px;
}

button{
  width: 150px;
  height: 40px;
  border-radius: 6px;
  font-size: large;
  transition-duration: 0.4s;
```

```
}
```

```
button:hover{
```

```
    box-shadow: 0 12px 16px 0 rgb(180, 161, 161);
```

```
}
```

## Html code for C comprehensive notes

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <title>side_bar</title>
```

```
    <link rel="stylesheet" href="CompJava.css">
```

```
  </head>
```

```
  <body>
```

```
    <div class="wrapper">
```

```
      <div class="sidebar">
```

```
        <h2>C</h2>
```

```
        <ul>
```

```
          <li><a href="CompCIntroduction.html">Introduction</a></li>
```

```
<li><a href="CompCBasics.html">Basics</a></li>
<li><a href="CompCControlflow.html">Control Flow</a></li>
<li><a href="CompCFunctions.html">Functions</a></li>
<li><a href="CompCArray_and_String.html">Array & String</a></li>
<li><a href="CompCpointer.html">Pointer</a></li>
<li><a href="CompCStructure.html">Structure & Union</a></li>
<li><a href="CompCFilehandling.html">File Handling</a></li>
<li><a href="CompCBitwiseOperations.html">Bitwise
Operations</a></li>
</ul>
</div>
```

```
<div class="main_content">
  <div class="info">
```

```
<div>
  <h2>Introduction</h2>
```

```
<br>
```

C is a versatile and influential programming language that has played a pivotal role in shaping the field of computer science and software development. Developed in the early 1970s by Dennis Ritchie at Bell Labs, C was created as an evolution of the B programming language. Its design aimed to provide low-level access to memory and hardware, allowing for efficient and close-to-the-machine programming. C quickly gained popularity due to its simplicity, efficiency, and the ability to write compact and fast code. Despite its age, C remains relevant and



widely used today, forming the foundation for numerous modern programming languages.<br>

<br>

## <h2>History of C Language:</h2>

<br>

The history of C can be traced back to the Bell Labs research center, where Dennis Ritchie, along with his colleagues, developed the language between 1972 and 1973. The motivation behind creating C was to build upon the limitations of the B programming language, addressing issues related to portability and code efficiency. C inherited the procedural programming paradigm from its predecessors but introduced structured programming constructs, making it more readable and maintainable. In 1978, the American National Standards Institute (ANSI) standardized the language, resulting in ANSI C, a crucial step that contributed to C's widespread adoption and uniformity in programming practices.<br>

<br>

C's influence further expanded with the development of the Unix operating system, which was largely implemented in C. This association with Unix played a significant role in C's popularity, as Unix became a widely used operating system in academic and commercial environments. Over the years, C has served as the foundation for various operating systems, including Linux, and has been instrumental in the development of embedded systems, compilers, and software applications across diverse domains.<br>

<br>

The simplicity and efficiency of C have led to its integration into numerous fields, from system programming to game development. Its syntax and features have inspired the creation of many programming languages, such as C++, C#, and Objective-C. C's legacy endures not only through its direct applications but also through the enduring principles and concepts it introduced to the world of programming, making it an essential language in the education and practice of computer science.<br>

```
</div>
```

```
</div>
```

```
<div class="nextprev">
```

```
  <a href="CompCBasics.html" class="next">Next &raquo;</a>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
</body>
```

```
</html>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <title>side_bar</title>
```

```
    <link rel="stylesheet" href="CompJava.css">
```

```
  </head>
```

```
  <body>
```

```
<div class="wrapper">
```

```
  <div class="sidebar">
```

```
    <h2>C</h2>
```

```
    <ul>
```

```
      <li><a href="CompCIntroduction.html">Introduction</a></li>
```

```
      <li><a href="CompCBasics.html">Basics</a></li>
```

```
      <li><a href="CompCControlflow.html">Control Flow</a></li>
```

```
      <li><a href="CompCFunctions.html">Functions</a></li>
```

```
      <li><a href="CompCArray_and_String.html">Array & String</a></li>
```

```
      <li><a href="CompCpointer.html">Pointer</a></li>
```

```
      <li><a href="CompCStructure.html">Structure & Union</a></li>
```

```
      <li><a href="CompCFilehandling.html">File Handling</a></li>
```

```
      <li><a href="CompCBitwiseOperations.html">Bitwise  
Operations</a></li>
```

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    </ul>
```

```
  </div>
```

```
<div class="main_content">
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  <div class="info">
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```
    <div>
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```
      <h2>Variables</h2>
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      <br>
```

In the C programming language, variables are fundamental entities used to store and manipulate data. A variable is essentially a named storage location in the computer's memory, identified by a unique name. Before using a variable, it must be declared with a specific data type, such as int, float, or char. C allows a wide range of naming conventions for variables, but they must adhere to certain rules, such as starting with a letter and being case-sensitive. Variables enable programmers to work with different types of data and perform various operations on that data within a program.<br>

<br>

## <h2>Data Types</h2>

<br>

C provides a variety of data types to cater to different types of data and their respective sizes and representations in memory. The basic data types include int (for integers), float (for floating-point numbers), char (for characters), and double (for double-precision floating-point numbers). Additionally, C supports modifiers like short and long to adjust the range of values that a variable of a particular type can hold. The use of appropriate data types is crucial for optimizing memory usage and ensuring the correct interpretation of data during program execution. C programmers have the flexibility to define custom data types using structures and unions, allowing for the creation of more complex and organized data structures.<br>

<br>

## <h2>Operators</h2>

<br>

Operators in C are symbols that represent computations or operations on variables and values. Categorically, operators in C include arithmetic operators (+, -, \*, /, %), relational operators (==, !=, <, >, <=, >=), logical operators (&&, ||, !), assignment operators (=, +=, -=, \*=, /=), and bitwise operators (&, |, ^, ~, <<, >>). These operators enable programmers to perform a wide range of operations, from basic arithmetic calculations to complex logical evaluations and bitwise manipulations. Understanding the precedence and associativity of operators is

essential for writing accurate and efficient C code. Furthermore, C allows the creation of custom operators using function pointers and function overloading, providing a high degree of flexibility in designing expressive and concise code.<br>

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<div class="nextprev">
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```
  <a href="CompCIntroduction.html" class="previous">&laquo;  
Previous</a>
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```
  <a href="CompCControlflow.html" class="next">Next &raquo;</a>
```

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</div>
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</div>
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</div>
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</body>
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</html>
```

## Html code for Java C++ Comprehensive notes

```
<!DOCTYPE html>
```

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<html>
```

```
  <head>
```

```
<title>C++</title>
```

```
<link rel="stylesheet" href="CompJava.css">
```

```
</head>
```

```
<body>
```

```
<div class="wrapper">
```

```
<div class="sidebar">
```

```
<h2>C ++</h2>
```

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<ul>
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```
<li><a href="CompC++Introduction.html">Introduction</a></li>
```

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<li><a href="CompC++Basics.html">Basics</a></li>
```

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<li><a href="CompC++Controlflow.html">Control Flow</a></li>
```

```
<li><a href="CompC++functions.html">Functions</a></li>
```

```
<li><a href="CompC++OOPs.html">OOPs</a></li>
```

```
<li><a href="CompC++Templates.html">Templates</a></li>
```

```
<li><a href="CompC++MemoryManagement.html">Memory  
Management</a></li>
```

```
<li><a href="CompC++Exceptionhandling.html">Exception  
Handling</a></li>
```

```
<li><a href="CompC++STLalgorithms.html">STL Algorithms</a></li>
```

```
<li><a href="CompC++Lambdaexpressions.html">Lambda  
Expressions</a></li>
```

```
<li><a href="CompC++OperatorOverloading.html">Operator  
Overloading</a></li>
```

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</ul>
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```
</div>
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```
<div class="main_content">
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<div class="info">
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<div>
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```
<h2>Introduction</h2>
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<br>
```

C++ is a versatile and widely used programming language that builds upon the foundation laid by its predecessor, the C programming language. Developed by Bjarne Stroustrup in the early 1980s at Bell Labs, C++ was conceived as an extension of C with additional features for object-oriented programming. The name "C++" reflects this evolution, as the "++" operator in C increments a variable, symbolizing an enhancement or evolution of the original language. C++ combines the procedural programming paradigm of C with powerful abstractions and features for organizing code and data, making it suitable for a broad spectrum of application domains.<br>

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```
<h2>History</h2>
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The journey of C++ began with Bjarne Stroustrup's desire to improve the efficiency and expressiveness of C while incorporating the principles of object-oriented programming (OOP). Stroustrup aimed to create a language that would enable developers to write efficient, modular, and reusable code. The first version of C++ was implemented in 1983, and it included classes, derived classes, and basic inheritance. Subsequent versions introduced key features such as virtual

functions, operator overloading, and templates, expanding the language's capabilities and expressive power.<br>

<br>

The standardization of C++ began in the late 1980s, leading to the release of the first official standard, known as C++98, in 1998. This standardization process, overseen by the International Organization for Standardization (ISO), played a crucial role in establishing C++ as a stable and widely adopted programming language. Subsequent standards, including C++11, C++14, C++17, and C++20, brought further enhancements, incorporating modern features, improvements, and expanded libraries.<br>

<br>

Throughout its evolution, C++ has been influential in various industries, including systems programming, game development, embedded systems, and large-scale software projects. Its ability to combine low-level programming with high-level abstractions makes it suitable for a diverse range of applications. C++ has influenced the development of other programming languages and continues to be a cornerstone in the education and practice of computer science and software engineering. Its rich history and ongoing relevance underscore its position as a language that has stood the test of time and remains a powerful tool for developers worldwide.<br>

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</div>

<div class="nextprev">

<a href="CompC++Basics.html" class="next">Next &raquo;</a>

</div>



```
        </div>
    </div>

</body>
</html>

<!DOCTYPE html>
<html>
    <head>
        <title>C++</title>

        <link rel="stylesheet" href="CompJava.css">

    </head>
    <body>

        <div class="wrapper">
            <div class="sidebar">
                <h2>C ++</h2>
                <ul>
                    <li><a href="CompC++Introduction.html">Introduction</a></li>
                    <li><a href="CompC++Basics.html">Basics</a></li>
                    <li><a href="CompC++Controlflow.html">Control Flow</a></li>
                    <li><a href="CompC++functions.html">Functions</a></li>
                </ul>
            </div>
        </div>
    </body>
</html>
```

```
<li><a href="CompC++OOps.html">OOps</a></li>
<li><a href="CompC++Templates.html">Templates</a></li>
<li><a href="CompC++MemoryManagement.html">Memory
Management</a></li>
<li><a href="CompC++Exceptionhandling.html">Exception
Handling</a></li>
<li><a href="CompC++STLalgorithms.html">STL Algorithms</a></li>
<li><a href="CompC++Lambdaexpressions.html">Lambda
Expressions</a></li>
<li><a href="CompC++OperatorOverloading.html">Operator
Overloading</a></li>
</ul>
</div>
```

```
<div class="main_content">
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<div class="info">
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<div>
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```
<h2>Data Types</h2>
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<br>
```

In C++, data types play a crucial role in defining the nature of variables and the kind of data they can store. The language offers a variety of built-in data types, each serving a specific purpose. Integers, such as int, short, long, and long long, are used for whole numbers, while floating-point types (float, double, long double) are employed for numbers with decimal points. The char data type is

reserved for individual characters, and `bool` is used to represent Boolean values, i.e., true or false. C++ also allows the use of modifiers like `signed`, `unsigned`, `const`, and `volatile` to further refine the characteristics of data types. Additionally, user-defined data types can be created using structures, classes, and enumerations to encapsulate related information.<br>

<br>

## <h2>Variables</h2>

<br>

Variables in C++ are named storage locations that hold data of a specific type. Before using a variable, it must be declared with an appropriate data type. For example, an integer variable named `age` can be declared as `int age;`. Similarly, variables for floating-point numbers, characters, and Boolean values can be declared using their respective data types. Variables serve as containers for information within a program, allowing for data storage, manipulation, and representation.<br>

<br>

## <h2>Operators</h2>

<br>

Operators in C++ are symbols or keywords that perform operations on variables and values. They can be categorized into various types, including arithmetic operators (`+`, `-`, `*`, `/`, `%`) for basic mathematical operations, relational operators (`==`, `!=`, `<`, `>`, `<=`, `>=`) for comparing values, and logical operators (`&&`, `||`, `!`) for performing logical operations on Boolean values. Assignment operators (`=`, `+=`, `-=`) assign values and can be used for compound assignments. Increment and decrement operators (`++`, `--`) modify the value of a variable. Bitwise operators (`&`, `|`, `^`, `~`, `<<`, `>>`) manipulate individual bits of integers. The conditional operator (`? :`) is a ternary operator for conditional expressions. Understanding and using these operators is fundamental for writing expressive and efficient C++ code. The appropriate use of operators enhances the readability and functionality of the code, allowing programmers to perform a wide range of operations on variables and values.<br>

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<div class="nextprev">
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```
  <a href="CompC++Introduction.html" class="previous">&laquo;  
Previous</a>
```

```
  <a href="CompC++Controlflow.html" class="next">Next &raquo;</a>
```

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</div>
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</div>
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</body>
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</html>
```

## Html code for Comprehensive Java notes

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<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <title>java</title>
```

```
<link rel="stylesheet" href="CompJava.css">
```

```
</head>
```

```
<body>
```

```
<div class="wrapper">
```

```
<div class="sidebar">
```

```
<h2><a href="index.html">Java</h2></a>
```

```
<ul>
```

```
<li><a href="CompJavaIntroduction.html">Introduction</a></li>
```

```
<li><a href="CompJavaBasics.html">Basics</a></li>
```

```
<li><a href="CompJavaControl_Statements.html">Control  
Statement</a></li>
```

```
<li><a href="CompJavaFunctions.html">Functions</a></li>
```

```
<li><a href="CompJavaClass.html">Class and Object</a></li>
```

```
<li><a href="CompJavaEncapsulation.html">Encapsulation</a></li>
```

```
<li><a href="CompJavaInheritance.html">Inheritance</a></li>
```

```
<li><a href="CompJavaAbstraction.html">Abstraction</a></li>
```

```
<li><a href="CompJavaPolymorphism.html">Polymorphism</a></li>
```

```
<li><a href="CompJavaPackage.html">Package & Interface</a></li>
```

```
<li><a href="CompJavaException.html">Exception Handling</a></li>
```

```
<li><a href="CompJavaMultithreading.html">Multithreading</a></li>
```

```
<li><a href="CompJavaFile_Handling.html">File Handling</a></li>
```

```
<li><a href="CompJavaNetworking.html">Networking</a></li>
```

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</ul>
```

</div>

<div class="main\_content">

<div class="info">

<div>

<h2>Introduction</h2><br>

<p><b>#</b> Java, a programming language that emerged in 1995, has become a cornerstone of modern software development. Conceived

by Sun Microsystems and now stewarded by Oracle, Java has left an indelible mark on the tech industry. Its core tenets

include platform independence, achieved through the Java Virtual Machine (JVM), which allows Java code to run on any

device with a compatible JVM implementation. This "Write Once, Run Anywhere" philosophy facilitates widespread adoption

in diverse domains.</p>

<p><b>#</b> Java's strength lies in its object-oriented design, automatic memory management, and a rich standard library.

Developers benefit from its portability, enabling the creation of applications that seamlessly operate on various

platforms. The language's versatility extends from enterprise-level solutions to web development and mobile

applications, with Android OS relying heavily on Java.</p>

<p><b>#</b> The Java ecosystem flourishes with robust frameworks like Spring and Hibernate, empowering developers to build scalable

and maintainable systems efficiently. Java's commitment to backward compatibility ensures the longevity of applications,

providing a stable foundation for innovation.</p>

Furthermore, Java continually evolves, with updates introducing new features and enhancements. The community-driven nature of Java's development, fostered through Java Community Process (JCP), ensures that the language stays relevant in the ever-changing tech landscape.

In conclusion, Java's enduring popularity stems from its adaptability, portability, and the vibrant community that sustains its growth. As a language that has withstood the test of time, Java remains a linchpin in modern software engineering, driving innovation across a spectrum of applications and industries.

## History:

**1991-1995:** Java's story began with a team at Sun Microsystems, led by James Gosling. The project was originally called Oak and aimed at creating a language for consumer electronic devices. However, with the rise of the Internet, the team adapted the language for the web.

**1995:** Java 1.0 was officially released, and its key feature was the ability to run on any device with a Java Virtual Machine, allowing developers to "write once, run anywhere."

**1996:** The first major update, Java 1.1, included significant improvements and introduced the JavaBeans component

architecture.</p>

<p><b># 2004:</b> Java 5 (or Java 1.5) brought about major changes, including the introduction of generics, metadata

annotations, and the enhanced for loop.</p>

<p><b># 2014:</b> Java 8 introduced lambda expressions, the Stream API, and other features to support functional programming.</p>

<p><b># 2017:</b> Java 9 marked the beginning of a new release cadence, with features like the module system and JShell for

interactive Java.</p>

<p><b># 2018-present:</b> The Java release cycle shifted to a time-driven model, delivering a new feature release every six

months. This rapid release cycle allows developers to access new features more frequently.</p>

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<div>

<h2>Key Features:</h2>

<p><b># Object-Oriented:</b> Java is fundamentally object-oriented, emphasizing the organization of code into reusable, modular components.</p>

<p><b># Platform-Independent:</b> Java code is compiled into an intermediate bytecode that can run on any device with a JVM. This contributes to Java's "write once, run anywhere" capability.</p>

<p><b># Multi-threading:</b> Java supports concurrent programming through its built-in features for creating and managing threads, allowing developers to build efficient, parallel applications.</p>

<p><b># Robust and Secure:</b> Java's design includes features for memory management, exception handling, and a strong type system, making it



robust and less prone to errors. It also incorporates security features to protect against various vulnerabilities.</p>

<p><b># Rich Standard Library:</b> Java comes with a comprehensive standard library that includes packages and classes for various utilities, data structures, and network programming.</p>

<p><b># Community and Ecosystem:</b> Java has a large and active developer community, contributing to a vast ecosystem of libraries, frameworks, and tools.</p>

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<a href="CompJavaBasics.html" class="next">Next &raquo;</a>

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</body>

</html>

<!DOCTYPE html>

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<head>

<title>java</title>

```
<link rel="stylesheet" href="CompJava.css">
```

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</head>
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<body>
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```
<div class="wrapper">
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```
<div class="sidebar">
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```
<h2>Java</h2>
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<ul>
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```
<li><a href="CompJavaIntroduction.html">Introduction</a></li>
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<li><a href="CompJavaBasics.html">Basics</a></li>
```

```
<li><a href="CompJavaControl_Statements.html">Control  
Statement</a></li>
```

```
<li><a href="CompJavaFunctions.html">Functions</a></li>
```

```
<li><a href="CompJavaClass.html">Class and Object</a></li>
```

```
<li><a href="CompJavaEncapsulation.html">Encapsulation</a></li>
```

```
<li><a href="CompJavaInheritance.html">Inheritance</a></li>
```

```
<li><a href="CompJavaAbstraction.html">Abstraction</a></li>
```

```
<li><a href="CompJavaPolymorphism.html">Polymorphism</a></li>
```

```
<li><a href="CompJavaPackage.html">Package & Interface</a></li>
```

```
<li><a href="CompJavaException.html">Exception Handling</a></li>
```

```
<li><a href="CompJavaMultithreading.html">Multithreading</a></li>
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<li><a href="CompJavaFile_Handling.html">File Handling</a></li>
```

```
<li><a href="CompJavaNetworking.html">Networking</a></li>
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</ul>
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</div>
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<div class="main_content">
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<div class="info">
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<div>
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```
<h2>Data Types</h2><br>
```

```
<p>In programming, data types are a way to classify and categorize data to specify the type of values a variable can
```

```
hold. Each data type has specific characteristics and operations that can be performed on it. Properly defining
```

```
data types is crucial for memory allocation, ensuring data integrity, and performing operations correctly.</p>
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</div>
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```
<div><h3>Types of Data in Java:</h3>
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```
<p>In Java, data types can be broadly categorized into two main groups:</p>
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```

```
<h3>A. Primitive Data Types:</h3>
```

```
<p><b>#</b> These are the basic data types directly supported by the language.</p>
```

**#** They are the simplest form of storing data and include numeric types, characters, and boolean.

### Numeric Types

**byte** -> 8-bit signed integer.

**short** -> 16-bit signed integer.

**int** -> 32-bit signed integer.

**long** -> 64-bit signed integer.

**float** -> 32-bit floating-point.

**double** -> 64-bit floating-point.

### Character Type:

**char** -> 16-bit Unicode character.

### Boolean Type:

**boolean** -> Represents true or false.

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### B. Reference Data Types:

**#** These are more complex types built upon primitive data types.

**#** They include objects, classes, interfaces, and arrays.

### Objects:

&emsp;&emsp;<b>#</b> Instances of classes created using the new keyword.

### &emsp;Classes:</h3>

&emsp;&emsp;<b>#</b> Blueprints for creating objects, defining their properties and behaviors.

### &emsp;Interfaces:</h3>

&emsp;&emsp;<b>#</b> Define a set of rules for classes to implement.

### &emsp;Arrays:</h3>

&emsp;&emsp;<b>#</b> Collections of elements of the same type.

### &emsp;Special Type:</h3>

&emsp;&emsp;<b># null:</b> Represents the absence of a value, often used for initializing object references.

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<div>

### Key Concepts:</h3>

<b>&emsp;Statically-typed:</b> The data type of a variable must be declared before it is used.<br>

<b>&emsp;Strongly-typed:</b> Once a variable is assigned a type, it cannot be changed.<br>

**&nbsp;Primitive vs. Reference:** Primitives store simple values directly, while references point to objects or memory locations.<br>

</div>

<div>

<h3>Example:</h3>

&nbsp;&nbsp;&nbsp;int age = 25;        // Primitive data type<br>

&nbsp;&nbsp;&nbsp;double salary = 50000.75; // Primitive data type<br>

&nbsp;&nbsp;&nbsp;String name = "John";   // Reference data type (String is a class in Java)<br>

**Note:** Understanding and choosing the right data types is essential for writing efficient and error-free Java programs.

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<div>

<h2>Variables</h2>

In Java, a variable is a container that holds data of a specific type. Before using a variable, you must declare it with a data type. Here are key

points about variables:</p>

</div>

<div>

<h3>Declaration:</h3>

**Syntax:** data\_type variable\_name;<br>

**Example:** int age;

</div>

<div>

<h3>Initialization:</h3>

Assigning a value to a variable.<br>

<b>Syntax:</b> variable\_name = value;<br>

<b>Example:</b> age = 25;

</div>

<div>

<h3>Naming Rules:</h3>

Variable names are case-sensitive.<br>

Must begin with a letter, underscore (\_), or dollar sign (\$).<br>

Subsequent characters can be letters, digits, underscores, or dollar signs.

</div>

<div>

<h2>Constants:</h2>

Declared using final keyword.<br>

<b>Example:</b> final double PI = 3.14;<br>

</div>

<div>

Variables have a scope, indicating where they can be accessed.<br>

**Local variables:** Defined within a method or block.<br>

**Instance variables:** Belong to an object and are declared within a class but outside any method.<br>

**Class (static) variables:** Shared among all instances of a class and declared with the static keyword.

</div>

</div>

<div class="nextprev">

[&laquo; Previous](CompJavaIntroduction.html)</a>

[Next &raquo;](CompJavaControl_Statements.html)</a>

</div>

</div>

</div>

</body>

</html>



# Html code for Comprehensive python notes

```
<!DOCTYPE html>
<html>
  <head>
    <title>Python</title>

    <link rel="stylesheet" href="CompJava.css">

  </head>
  <body>

    <div class="wrapper">
      <div class="sidebar">
        <h2>Python</h2>
        <ul>
          <li><a href="CompPythonIntroduction.html">Introduction</a></li>
          <li><a href="CompPythonBasics.html">Basics</a></li>
          <li><a href="CompPythonControlflow.html">Control
Statement</a></li>
          <li><a href="CompPythonFunctionsandModules.html">Functions and
Modules</a></li>
          <li><a href="CompPythonOOPs.html">OOPs</a></li>
          <li><a href="CompPythonFileHandling.html">File Handling</a></li>
```

`<li><a href="CompPythonExceptionHandling.html">Exception Handling</a></li>`

`<li><a href="CompPythonLibrary.html">Library and Frameworks</a></li>`

`<li><a href="CompPythonConcurrency.html">Concurrency and Parallelism</a></li>`

`<li><a href="CompPythonTesting.html">Testing and Debugging</a></li>`

`<li><a href="CompPythonDecorators.html">Decorators and Generators</a></li>`

`</ul>`

`</div>`

`<div class="main_content">`

`<div class="info">`

`<div>`

`<h2>Introduction<br></h2>`

`<br>`

Python, a high-level, interpreted programming language, was conceived by Guido van Rossum in the late 1980s and released as Python 0.9.0 in 1991. Van Rossum aimed to create a language that emphasized code readability, simplicity, and developer-friendly syntax. Python's design philosophy, often summarized as "The Zen of Python," prioritizes clarity and simplicity over complexity, fostering a community-driven approach to software development.<br>

`<br>`

Named after the British comedy group Monty Python, Python emphasizes a clean and straightforward syntax that reduces the cost of program maintenance and development. It gained popularity for its versatility and applicability in various domains, ranging from web development and data science to artificial intelligence and automation.<br>

<br>

The language's readability is enforced by the use of indentation rather than braces or keywords, making the code visually intuitive. Python supports multiple programming paradigms, including procedural, object-oriented, and functional programming, offering flexibility for diverse application needs.<br>

<br>

Over the years, Python has undergone several major releases, with Python 2 and Python 3 representing significant milestones. Python 3, introduced in 2008, brought improvements and enhancements to the language but introduced some backward incompatibility with Python 2. Despite this, the community has largely embraced Python 3, and support for Python 2 officially ended in 2020.<br>

<br>

Python's success can be attributed to its vibrant and welcoming community, extensive standard library, and a rich ecosystem of third-party packages and frameworks. The language's simplicity and readability have made it a preferred choice for beginners and seasoned developers alike, contributing to its widespread adoption in both educational and industrial settings. Python's open-source nature, coupled with its versatility and large community support, has cemented its place as one of the most popular and influential programming languages in the modern software development landscape. <br>

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</div>

```
<div class="nextprev">
```

```
  <a href="CompPythonBasics.html" class="next">Next &raquo;</a>
```

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</div>
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</div>
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```
</div>
```

```
</body>
```

```
</html>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <title>Python</title>
```

```
    <link rel="stylesheet" href="CompJava.css">
```

```
  </head>
```

```
  <body>
```

```
    <div class="wrapper">
```

```
      <div class="sidebar">
```

```
        <h2>Python</h2>
```

```
<ul>
  <li><a href="CompPythonIntroduction.html">Introduction</a></li>
  <li><a href="CompPythonBasics.html">Basics</a></li>
  <li><a href="CompPythonControlflow.html">Control
Statement</a></li>
  <li><a href="CompPythonFunctionsandModules.html">Functions and
Modules</a></li>
  <li><a href="CompPythonOOPs.html">OOPs</a></li>
  <li><a href="CompPythonFileHandling.html">File Handling</a></li>
  <li><a href="CompPythonExceptionHandling.html">Exception
Handling</a></li>
  <li><a href="CompPythonLibrary.html">Library and
Frameworks</a></li>
  <li><a href="CompPythonConcurrency.html">Concurrency and
Parallelism</a></li>
  <li><a href="CompPythonTesting.html">Testing and
Debugging</a></li>
  <li><a href="CompPythonDecorators.html">Decorators and
Generators</a></li>
</ul>
</div>
```

```
<div class="main_content">
```

```
<div class="info">
```

<div>

## <h2>Data Types</h2>

<br>

Python, as a dynamically-typed language, allows developers to work with a variety of data types without explicitly declaring them. Common data types include integers, floats, strings, booleans, lists, tuples, sets, and dictionaries. Variables in Python act as containers for storing values, and their types are determined dynamically based on the assigned values.<br>

<br>

## <h2>Variables</h2><br>

Variables are assigned using the assignment operator =. For example, x = 10 assigns the integer value 10 to the variable x. Python supports variable names with letters, underscores, and numbers (with some restrictions) and is case-sensitive.<br>

<br>

## <h2>Operators</h2><br>

Operators in Python perform various operations on variables and values. Arithmetic operators (+, -, \*, /, //, %, \*\*) handle basic mathematical operations. Comparison operators (==, !=, <, >, <=, >=) are used to compare values, and logical operators (and, or, not) combine conditions.<br>

<br>

String concatenation and repetition are achieved using the + and \* operators, respectively. Additionally, Python provides membership operators (in, not in) and identity operators (is, is not) for checking membership and object identity.<br>

<br>

Python supports dynamic typing, enabling variables to change types during runtime. This flexibility, combined with a rich set of operators and built-in functions, makes Python well-suited for various applications. Understanding data

types, variables, and operators is fundamental to effective Python programming, as they form the basis for data manipulation, control flow, and the development of complex algorithms.<br>

</div>

</div>

<div class="nextprev">

<a href="CompPythonIntroduction.html" class="previous">&laquo;  
Previous</a>

<a href="CompPythonControlflow.html" class="next">Next  
&raquo;</a>

</div>

</div>

</div>

</body>

</html>

# Html code for comprehensive DSA notes

```
<!DOCTYPE html>
<html>
  <head>
    <title>DSA</title>

    <link rel="stylesheet" href="CompJava.css">

  </head>
  <body>

    <div class="wrapper">
      <div class="sidebar">
        <h2>DSA</h2>
        <ul>
          <li><a href="CompDSAIntroduction.html">Introduction</a></li>
          <li><a href="CompDSAArraysandStrings.html">Arrays and
Strings</a></li>
          <li><a href="CompDSALinkedList.html">Linked List</a></li>
          <li><a href="CompDSASTacksandQueues.html">Stack and
Queues</a></li>
          <li><a href="CompDSATrees.html">Trees</a></li>
          <li><a href="CompDSAGraphs.html">Graphs</a></li>
          <li><a href="CompDSAHeaps.html">Heaps</a></li>
```



```
<li><a href="CompDSASearchingalgorithm.html">Searching  
Algorithm</a></li>
```

```
<li><a href="CompDSASortingalgorithm.html">Sorting  
Algorithm</a></li>
```

```
<li><a href="CompDSARecursion.html">Recursion</a></li>
```

```
<li><a href="CompDSAGreedyalgorithm.html">Greedy  
Algorithm</a></li>
```

```
</ul>
```

```
</div>
```

```
<div class="main_content">
```

```
<div class="info">
```

```
<div>
```

```
<h2>Introduction</h2>
```

```
<br>
```

Data structures and algorithms form the bedrock of computer science, playing a pivotal role in the design and implementation of efficient software solutions. These concepts are essential for organizing, storing, and manipulating data, as well as for designing algorithms to solve complex problems. Understanding data structures allows developers to choose the right organizational schemes for data, while knowledge of algorithms empowers them to devise efficient methods for data processing.<br>

```
<br>
```

```
<h2>Data Structures</h2>
```

```
<br>
```

Data structures are mechanisms for organizing and storing data to perform operations efficiently. They define the relationship between the data elements and the operations that can be performed on them. Common data structures include arrays, linked lists, stacks, queues, trees, graphs, and hash tables. Each data structure has its own strengths and weaknesses, making them suitable for specific use cases. Choosing the appropriate data structure is crucial for optimizing operations such as search, insertion, deletion, and traversal.<br>

<br>

## <h2>Algorithms</h2>

<br>

Algorithms are step-by-step procedures or sets of rules designed to perform a specific task or solve a particular problem. They provide the blueprint for transforming input data into desired output. Efficient algorithms are essential for optimizing resource usage and minimizing execution time. Algorithms are classified based on their design paradigms, such as greedy algorithms, dynamic programming, divide and conquer, and more. The choice of algorithm depends on the nature of the problem and the requirements of the solution.<br>

<br>

## <h2>Significance</h2>

<br>

The significance of data structures and algorithms lies in their impact on software performance and scalability. Well-designed data structures and algorithms enable the creation of robust and efficient software that can handle large datasets, execute tasks quickly, and scale to meet growing demands. Proficiency in these concepts is crucial for software engineers, developers, and computer scientists as it influences the quality and efficiency of software solutions.<br>

<br>

## <h2>Problem Solving</h2>

<br>

Data structures and algorithms are at the core of problem-solving in computer science. They provide the tools and techniques to break down complex problems into manageable components, facilitating systematic and efficient solutions. The process of selecting the right data structures and algorithms requires analytical thinking, optimization strategies, and an understanding of trade-offs.<br>

<br>

In conclusion, a strong foundation in data structures and algorithms is essential for anyone venturing into the field of computer science or software development. Proficiency in these concepts empowers individuals to write efficient, scalable, and optimized code, laying the groundwork for innovative solutions and advancements in technology. <br>

</div>

</div>

<div class="nextprev">

<a href="CompDSAArraysandStrings.html" class="next">Next  
&raquo;</a>

</div>

</div>

</div>

</body>

</html>

```
<!DOCTYPE html>
<html>
  <head>
    <title>DSA</title>

    <link rel="stylesheet" href="CompJava.css">

  </head>
  <body>

    <div class="wrapper">
      <div class="sidebar">
        <h2>DSA</h2>
        <ul>
          <li><a href="CompDSAIntroduction.html">Introduction</a></li>
          <li><a href="CompDSAArraysandStrings.html">Arrays and
Strings</a></li>
          <li><a href="CompDSALinkedList.html">Linked List</a></li>
          <li><a href="CompDSASTacksandQueues.html">Stack and
Queues</a></li>
          <li><a href="CompDSATrees.html">Trees</a></li>
          <li><a href="CompDSAGraphs.html">Graphs</a></li>
          <li><a href="CompDSAHeaps.html">Heaps</a></li>
        </ul>
      </div>
    </div>
  </body>
</html>
```

```
<li><a href="CompDSASearchingalgorithm.html">Searching  
Algorithm</a></li>
```

```
<li><a href="CompDSASortingalgorithm.html">Sorting  
Algorithm</a></li>
```

```
<li><a href="CompDSARecursion.html">Recursion</a></li>
```

```
<li><a href="CompDSAGreedyalgorithm.html">Greedy  
Algorithm</a></li>
```

```
</ul>
```

```
</div>
```

```
<div class="main_content">
```

```
<div class="info">
```

```
<div>
```

```
<h2>Arrays</h2>
```

```
<br>
```

Arrays are fundamental data structures that store elements of the same type in contiguous memory locations. The key features of arrays include constant-time access to elements using indices and efficient memory utilization. Arrays are versatile and support various operations, including insertion, deletion, and traversal.<br>

```
<br>
```

Access and Indexing: Elements in an array are accessed using an index, and this direct access allows for constant-time retrieval of elements.<br>

```
<br>
```

Insertion and Deletion: While accessing elements is efficient, inserting or deleting elements from an array can be less so. Inserting or removing elements in the middle requires shifting subsequent elements, resulting in a time complexity of  $O(n)$ .<br>

<br>

Static vs. Dynamic Arrays: Static arrays have a fixed size, while dynamic arrays can resize during runtime. Dynamic arrays, such as Python lists or Java ArrayLists, provide more flexibility but may involve occasional resizing operations.<br>

<br>

Arrays find applications in a myriad of algorithms, from simple searching and sorting to more complex tasks like dynamic programming and graph algorithms.<br>

<br>

## <h2>Strings</h2>

<br>

Strings, essentially sequences of characters, are a specific type of array where each element represents a character. Strings support various operations and algorithms specific to textual data.<br>

<br>

Immutable vs. Mutable: Strings are often immutable, meaning their values cannot be changed after creation. This immutability ensures data integrity but may require creating new strings for modifications. In contrast, some languages have mutable string types.<br>

<br>

String Matching: Algorithms like pattern matching and substring search are crucial for processing textual data efficiently. Algorithms like the Knuth-Morris-Pratt (KMP) and Boyer-Moore are employed for efficient substring matching.<br>

<br>

String Manipulation: String manipulation involves tasks such as concatenation, reversing, and splitting. Algorithms that work with strings often leverage array-based operations.<br>

<br>

Encoding and Compression: Handling character encoding and compression are important aspects of string algorithms, especially in scenarios involving file processing and data transmission.<br>

<br>

Understanding arrays and strings is foundational for any programmer or computer scientist. They serve as the building blocks for more complex data structures and algorithms. Proficiency in manipulating arrays and strings is essential for solving a wide range of problems, making them essential concepts for anyone involved in software development or algorithmic problem-solving.

<br>

</div>

</div>

<div class="nextprev">

<a href="CompDSAIntroduction.html" class="previous">&laquo;  
Previous</a>

<a href="CompDSALinkedList.html" class="next">Next &raquo;</a>

</div>

</div>

</div>

```
</body>  
</html>
```

## All code for C practical

```
<!DOCTYPE html>  
<html>  
  <head>  
    <title>C Practicals</title>  
  
    <style>  
  
      * {  
        padding: 0;  
        margin: 0;  
        box-sizing: border-box;  
      }  
  
      body {  
        background: rgb(16, 12, 45);  
        font-family: Georgia, 'Times New Roman', Times, serif;
```



```
display: flex;
align-items: center;
justify-content: center;
height: 100vh;
overflow: hidden;
}
```

```
.quiz-container {
background: white;
border-radius: 10px;
box-shadow: 0 0 10px 2px rgba(100, 100, 100, 0.1);
max-width: 600px;
width: 100%;
color: rgb(13, 13, 13);
}
```

```
.quiz-header {
display: flex;
align-items: center;
justify-content: space-between;
padding: 2rem 2rem;
box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);
border-top-left-radius: 10px;
border-top-right-radius: 10px;
```

```
}
```

```
.quiz-header h2 {  
font-size: 2rem;  
}
```

```
.quiz-header p {  
background: #111;  
padding: 0.4rem 1rem;  
color: #fff;  
border-radius: 5px;  
}
```

```
.quiz-body {  
padding: 2rem 2rem;  
}
```

```
.quiz-body h2 {  
padding: 1rem 0;  
font-size: 2rem;  
font-weight: 500;  
text-align: center;  
margin: 0;  
}
```

```
.quiz-body ul {  
list-style: none;  
padding: 0;  
}
```

```
.quiz-body ul li {  
margin: 1rem 0;  
font-size: 1rem;  
border: 1px solid rgb(16, 12, 45);  
padding: 0.7rem;  
border-radius: 5px;  
cursor: pointer;  
}
```

```
.quiz-body ul li label {  
cursor: pointer;  
padding: 0 0.4rem;  
}
```

```
.quiz-footer {  
display: flex;  
align-items: center;  
justify-content: space-between;
```

```
padding: 1rem 2rem;  
box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);  
}
```

```
.quiz-footer button {  
padding: 0.6rem 1.5rem;  
outline: none;  
background: rgb(16, 12, 45);  
border: 0;  
cursor: pointer;  
font-family: inherit;  
border-radius: 5px;  
color: #fff;  
opacity: 0.9;  
transition: 0.3s ease-in-out;  
}
```

```
.quiz-body button {  
padding: 0.6rem 1rem;  
outline: none;  
background: rgb(16, 12, 45);  
border: 0;  
cursor: pointer;  
font-family: inherit;
```

```
border-radius: 5px;
color: #fff;
opacity: 0.9;
transition: 0.3s ease-in-out;
display: block;
margin: 0 auto;
}
```

```
.quiz-footer button:hover {
  background-color: #463e65;
}
```

```
.quiz-body button:hover{
  background-color: #463e65;
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<div class="quiz-container" id="quiz">
```

```
<div class="quiz-header">
```

```
<h2 class="header-txt">C</h2>
```

```
</div>
```

```
<div class="quiz-body">
  <h2 id="question">Question Text</h2>
  <ul>
    <li>
      <input type="radio" name="answer" id="a" class="answer" />
      <label for="a" id="a_text">Questions</label>
    </li>
    <li>
      <input type="radio" name="answer" id="b" class="answer" />
      <label for="b" id="b_text">Questions</label>
    </li>
    <li>
      <input type="radio" name="answer" id="c" class="answer" />
      <label for="c" id="c_text">Questions</label>
    </li>
    <li>
      <input type="radio" name="answer" id="d" class="answer" />
      <label for="d" id="d_text">Questions</label>
    </li>
  </ul>
</div>
<div class="quiz-footer">
  <div class="quiz-details"></div>
  <button type="button" id="btn">Submit</button>
```

```
</div>
```

```
</div>
```

```
<script>
```

```
"use strict";
```

```
const quizData = [
```

```
{
```

```
question: "What is the correct way to declare a pointer variable in C?",
```

```
a: "int pointerVariable;",
```

```
b: "int *pointerVariable;",
```

```
c: "pointerVariable int;",
```

```
d: "pointerVariable *int;",
```

```
correct: "b"
```

```
},
```

```
{
```

```
question: "What is the purpose of the 'scanf' function in C?",
```

```
a: "Print formatted output to the console.",
```

```
b: "Read formatted input from the console.",
```

```
c: "Allocate memory for a variable.",
```

```
d: "Declare a new variable.",
```

```
correct: "b"
```

```
},
```

```
{  
question: "Which of the following is not a valid C data type?",  
a: "float",  
b: "boolean",  
c: "char",  
d: "double",  
correct: "b"  
},
```

```
{  
question: "In c, what does the 'sizeof' operator return?",  
a: "The size of a file.",  
b: "The size of a variable in bytes.",  
c: "The number of elements in an array.",  
d: "The length of a string.",  
correct: "b"  
},
```

```
{  
question: "What is the purpose of the 'break' statement in C?",  
a: "To terminate the program.",  
b: "To exit a loop or switch statement.",  
c: "To skip the current iteration in a loop.",  
d: "To indicate the end of a method.",  
correct: "b"  
},
```



{

question: "Which of the following is a valid way to comment out multiple lines in C?",

a: "// This is a comment",

b: "/\* This is a comment \*/",

c: "# This is a comment",

d: "<!-- This is a comment -->",

correct: "b"

},

{

question: "In C, how do you dynamically allocate memory for an integer variable using pointer?",

a: "int \*ptr = new int;",

b: "int \*ptr = malloc(sizeof(int));",

c: "int ptr = (int \*)malloc(sizeof(int));",

d: "int ptr = new int;",

correct: "b"

},

{

question: "What is the correct syntax to define a function in C?",

a: "function void myFunction() {}",

b: "myFunction() void {}",

c: "void myFunction() {}",

d: "myFUunction(void) {}",

correct: "c"

```
},
```

```
{
```

```
    question: "Which header file should be included to use the 'printf' and  
'scanf' functions in C?",
```

```
    a: "stdlib.h",
```

```
    b: "math.h",
```

```
    c: "stdio.h",
```

```
    d: "string.h",
```

```
    correct: "c"
```

```
},
```

```
{
```

```
    question: "What is the purpose of the 'static keyword in C'?",
```

```
    a: "To declare a variable that can be accessed from outside the file.",
```

```
    b: "To create a constant variable.",
```

```
    c: "To declare a variable with a fixed value.",
```

```
    d: "To define a function that can be used in other file.",
```

```
    correct: "a"
```

```
},
```

```
{
```

```
    question: "How do you include a newline character in a C string?",
```

```
    a: "\\n",
```

```
    b: "\\\n",
```

```
    c: "/n",
```

```
    d: "<newline>",
```

```
    correct: "a"
```

},

{

question: "What does the bitwise AND operator '&' do in C?",

a: "Performs logical AND operation.",

b: "Performs bitwise AND operation.",

c: "Performs arithmetic AND operation.",

d: "Checks equality.",

correct: "b"

},

{

question: "What is the purpose of the 'enum' keyword in C?",

a: "To declare a constant variable.",

b: "To define a new data type with named values.",

c: "To create a structure.",

d: "To declare a global variable.",

correct: "b"

},

{

question: "Which of the following statements is true about the 'const' keyword in C?",

a: "It declares a constant variable.",

b: "It allocates memory for a variable.",

c: "It is used to create a new instance of a class.",

d: "It is used for loop control.",

correct: "a"

```
},  
{  
  question: "What is the purpose of the 'calloc' function in C?",  
  a: "To allocate memory for a variable.",  
  b: "To create a constant variable.",  
  c: "To allocate memory for an array and initialize all elements to zero.",  
  d: "To release dynamically allocated memory.",  
  correct: "c"  
},
```

```
];
```

```
const quiz = document.querySelector(".quiz-body");  
const answerEl = document.querySelectorAll(".answer");  
const questionEl = document.getElementById("question");  
const footerEl = document.querySelector(".quiz-footer");  
const quizDetailEl = document.querySelector(".quiz-details");  
const liEl = document.querySelector("ul li");
```

```
const a_txt = document.getElementById("a_text");  
const b_txt = document.getElementById("b_text");  
const c_txt = document.getElementById("c_text");  
const d_txt = document.getElementById("d_text");
```

```
const btnSubmit = document.getElementById("btn");

let currentQuiz = 0;
let score = 0;

loadQuiz();

function loadQuiz() {
  deselectAnswers();
  const currentQuizData = quizData[currentQuiz];
  questionEl.innerText = currentQuizData.question;
  a_txt.innerText = currentQuizData.a;
  b_txt.innerText = currentQuizData.b;
  c_txt.innerText = currentQuizData.c;
  d_txt.innerText = currentQuizData.d;
  quizDetailEl.innerHTML = `

#{currentQuiz + 1} of
  ${quizData.length}</p>`;
}

// deselect
function deselectAnswers() {
  answerEl.forEach((answerEl) => {
    answerEl.checked = false;
  });
}


```

```
// get selected
function getSelected() {
  let answer;
  answerEl.forEach((answerEls) => {
    if (answerEls.checked) {
      answer = answerEls.id;
    }
  });
  return answer;
}

btnSubmit.addEventListener("click", function () {
  const answers = getSelected();

  if (answers) {
    if (answers === quizData[currentQuiz].correct) {
      score++;
    }
    nextQuestion();
  }
});

// next Slide
```

```
function nextQuestion() {
    currentQuiz++;

    if (currentQuiz < quizData.length) {
        loadQuiz();
    } else {
        quiz.innerHTML = `

## You answered ${score}/${quizData.length} question correctly</h2> <button type="button" onclick="location.reload()">Reload</button> `; footerEl.style.display = "none"; } } </script> </body> </html>


```

## All code for C++ practical

```
<!DOCTYPE html>
<html>
  <head>
    <title>C++ Practicals</title>
```

```
<style>
```

```
* {  
padding: 0;  
margin: 0;  
box-sizing: border-box;  
}
```

```
body {  
background: rgb(16, 12, 45);  
font-family: Georgia, 'Times New Roman', Times, serif;  
display: flex;  
align-items: center;  
justify-content: center;  
height: 100vh;  
overflow: hidden;  
}
```

```
.quiz-container {  
background: white;  
border-radius: 10px;  
box-shadow: 0 0 10px 2px rgba(100, 100, 100, 0.1);  
max-width: 600px;
```



```
width: 100%;  
color: rgb(13, 13, 13);  
}
```

```
.quiz-header {  
display: flex;  
align-items: center;  
justify-content: space-between;  
padding: 2rem 2rem;  
box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);  
border-top-left-radius: 10px;  
border-top-right-radius: 10px;  
}
```

```
.quiz-header h2 {  
font-size: 2rem;  
}
```

```
.quiz-header p {  
background: #111;  
padding: 0.4rem 1rem;  
color: #fff;  
border-radius: 5px;  
}
```

```
.quiz-body {  
padding: 2rem 2rem;  
}
```

```
.quiz-body h2 {  
padding: 1rem 0;  
font-size: 2rem;  
font-weight: 500;  
text-align: center;  
margin: 0;  
}
```

```
.quiz-body ul {  
list-style: none;  
padding: 0;  
}
```

```
.quiz-body ul li {  
margin: 1rem 0;  
font-size: 1rem;  
border: 1px solid rgb(16, 12, 45);  
padding: 0.7rem;  
border-radius: 5px;
```

```
cursor: pointer;
}
```

```
.quiz-body ul li label {
cursor: pointer;
padding: 0 0.4rem;
}
```

```
.quiz-footer {
display: flex;
align-items: center;
justify-content: space-between;
padding: 1rem 2rem;
box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);
}
```

```
.quiz-footer button {
padding: 0.6rem 1.5rem;
outline: none;
background: rgb(16, 12, 45);
border: 0;
cursor: pointer;
font-family: inherit;
border-radius: 5px;
```

```
color: #fff;  
opacity: 0.9;  
transition: 0.3s ease-in-out;  
}
```

```
.quiz-body button {  
padding: 0.6rem 1rem;  
outline: none;  
background: rgb(16, 12, 45);  
border: 0;  
cursor: pointer;  
font-family: inherit;  
border-radius: 5px;  
color: #fff;  
opacity: 0.9;  
transition: 0.3s ease-in-out;  
display: block;  
margin: 0 auto;  
}
```

```
.quiz-footer button:hover {  
background-color: #463e65;  
}
```

```
.quiz-body button:hover{  
    background-color: #463e65;  
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<div class="quiz-container" id="quiz">
```

```
<div class="quiz-header">
```

```
<h2 class="header-txt">C++</h2>
```

```
</div>
```

```
<div class="quiz-body">
```

```
<h2 id="question">Question Text</h2>
```

```
<ul>
```

```
<li>
```

```
<input type="radio" name="answer" id="a" class="answer" />
```

```
<label for="a" id="a_text">Questions</label>
```

```
</li>
```

```
<li>
```

```
<input type="radio" name="answer" id="b" class="answer" />
```

```
<label for="b" id="b_text">Questions</label>
```

```
</li>
```

```
<li>
```

```
<input type="radio" name="answer" id="c" class="answer" />
<label for="c" id="c_text">Questions</label>
</li>
<li>
  <input type="radio" name="answer" id="d" class="answer" />
  <label for="d" id="d_text">Questions</label>
</li>
</ul>
</div>
<div class="quiz-footer">
  <div class="quiz-details"></div>
  <button type="button" id="btn">Submit</button>
</div>
</div>

<script>
  "use strict";

  const quizData = [
    {
      question: "What is the correct way to declare a pointer in C++?",
      a: "int ptr;",
      b: "int *ptr;",
```

c: "pointer int;",

d: "pointer \*int;",

correct: "b"

},

{

question: "What does the 'const' keyword indicate in a C++ declaration?",

a: "A constant variable",

b: "A variable with a constant value",

c: "A constant function",

d: "A function with a constant return type",

correct: "a"

},

{

question: "Which C++ keyword is used to allocate memory for a dynamic array?",

a: "new",

b: "malloc",

c: "alloc",

d: "create",

correct: "a"

},

{

question: "What is the purpose of the 'virtual' keyword in C++?",

a: "To declare a variable as virtual",

b: "To declare a function as virtual",

c: "To create a virtual memory space",

d: "To define a virtual class",

correct: "b"

},

{

question: "What is the correct syntax for defining a class in C++?",

a: "class MyClass;",

b: "define MyClass{};",

c: "class {MyClass};",

d: "class MyClass {};",

correct: "d"

},

{

question: "In C++, how is a reference different from a pointer?",

a: "References cannot be NULL",

b: "Pointers cannot be dereferenced",

c: "References have to be initialized when declared",

d: "Pointers have to be initialized when declared",

correct: "c"

},

{

question: "What is the purpose of the 'try', 'catch', and 'throw' keywords in C++?",

a: "Input/Output operations",

b: "Exception handling",



c: "Loop control",

d: "Memory allocation",

correct: "b"

},

{

question: "Which type of inheritance is not supported in C++?",

a: "Single Inheritance",

b: "Multiple Inheritance",

c: "Hierarchical Inheritance",

d: "Hybrid Inheritance",

correct: "b"

},

{

question: "What is the scope resolution operator in C++?",

a: "::",

b: "->",

c: "..",

d: ":",

correct: "a"

},

{

question: "What is the difference between '++i' and 'i++' in C++?",

a: "They are the same",

b: "'++i' increments before the current value is used",

c: "'i++' increments after the current value is used",

d: "'++i' and 'i++' are illegal in C++",

correct: "b"

},

{

question: "What is the purpose of the 'explicit' keyword in C++?",

a: "To specify an explicit constructor",

b: "To define an explicit variable",

c: "To declare an explicit function",

d: "To make a variable implicitly converted",

correct: "a"

},

{

question: "Which standard C++ library header is used for input/output operations?",

a: "<math.h>",

b: "<stdlib.h>",

c: "<iostream.h>",

d: "<string.h>",

correct: "c"

},

{

question: "What is the purpose of the 'typeid' operator in C++?",

a: "To check the type of an expression",

b: "To identify the type of a variable",

c: "To convert types implicitly",

d: "To define a new data type",

correct: "b"

},

{

question: "What is the role of the 'namespace' keyword in C++?",

a: "To create a new namespace",

b: "To include a namespace",

c: "To declare a variable in a namespace",

d: "To specify the scope of a block of code",

correct: "a"

},

{

question: "What is the purpose of the 'sizeof' operator in C++?",

a: "To determine the size of a variable or type",

b: "To calculate the square root",

c: "To find the length of a string",

d: "To allocate memory dynamically",

correct: ""

},

];

```
const quiz = document.querySelector(".quiz-body");
```

```
const answerEl = document.querySelectorAll(".answer");
const questionEl = document.getElementById("question");
const footerEl = document.querySelector(".quiz-footer");
const quizDetailEl = document.querySelector(".quiz-details");
const liEl = document.querySelector("ul li");
```

```
const a_txt = document.getElementById("a_text");
const b_txt = document.getElementById("b_text");
const c_txt = document.getElementById("c_text");
const d_txt = document.getElementById("d_text");
const btnSubmit = document.getElementById("btn");
```

```
let currentQuiz = 0;
```

```
let score = 0;
```

```
loadQuiz();
```

```
function loadQuiz() {
  deselectAnswers();
  const currentQuizData = quizData[currentQuiz];
  questionEl.innerHTML = currentQuizData.question;
  a_txt.innerHTML = currentQuizData.a;
  b_txt.innerHTML = currentQuizData.b;
  c_txt.innerHTML = currentQuizData.c;
```

```
d_txt.innerText = currentQuizData.d;

quizDetailEl.innerHTML = `

${currentQuiz + 1} of
${quizData.length}</p>`;
}

// deselect
function deselectAnswers() {
  answerEl.forEach((answerEl) => {
    answerEl.checked = false;
  });
}

// get selected
function getSelected() {
  let answer;
  answerEl.forEach((answerEls) => {
    if (answerEls.checked) {
      answer = answerEls.id;
    }
  });
  return answer;
}

btnSubmit.addEventListener("click", function () {
  const answers = getSelected();


```

```
    if (answers) {
    if (answers === quizData[currentQuiz].correct) {
    score++;
    }
    nextQuestion();
    }
    });

    // next Slide
    function nextQuestion() {
    currentQuiz++;

    if (currentQuiz < quizData.length) {
    loadQuiz();
    } else {
    quiz.innerHTML = `

## 


```

```
</body>  
</html>
```

## All code for java practical

```
<!DOCTYPE html>  
<html>  
  <head>  
    <title>  
      Practicals  
    </title>  
  
    <style>  
  
      * {  
        padding: 0;  
        margin: 0;  
        box-sizing: border-box;  
      }  
  
      body {  
        background: rgb(16, 12, 45);  
/      font-family: Georgia, 'Times New Roman', Times, serif;
```

```
display: flex;
align-items: center;
justify-content: center;
height: 100vh;
overflow: hidden;
}
```

```
.quiz-container {
background: white;
border-radius: 10px;
box-shadow: 0 0 10px 2px rgba(100, 100, 100, 0.1);
max-width: 600px;
width: 100%;
color: rgb(13, 13, 13);
}
```

```
.quiz-header {
display: flex;
align-items: center;
justify-content: space-between;
padding: 2rem 2rem;
box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);
border-top-left-radius: 10px;
border-top-right-radius: 10px;
```



```
}
```

```
.quiz-header h2 {  
font-size: 2rem;  
}
```

```
.quiz-header p {  
background: #111;  
padding: 0.4rem 1rem;  
color: #fff;  
border-radius: 5px;  
}
```

```
.quiz-body {  
padding: 2rem 2rem;  
}
```

```
.quiz-body h2 {  
padding: 1rem 0;  
font-size: 2rem;  
font-weight: 500;  
text-align: center;  
margin: 0;  
}
```

```
.quiz-body ul {  
list-style: none;  
padding: 0;  
}
```

```
.quiz-body ul li {  
margin: 1rem 0;  
font-size: 1rem;  
border: 1px solid rgb(16, 12, 45);  
padding: 0.7rem;  
border-radius: 5px;  
cursor: pointer;  
}
```

```
.quiz-body ul li label {  
cursor: pointer;  
padding: 0 0.4rem;  
}
```

```
.quiz-footer {  
display: flex;  
align-items: center;  
justify-content: space-between;
```

```
padding: 1rem 2rem;  
box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);  
}
```

```
.quiz-footer button {  
padding: 0.6rem 1.5rem;  
outline: none;  
background: rgb(16, 12, 45);  
border: 0;  
cursor: pointer;  
font-family: inherit;  
border-radius: 5px;  
color: #fff;  
opacity: 0.9;  
transition: 0.3s ease-in-out;  
}
```

```
.quiz-body button {  
padding: 0.6rem 1rem;  
outline: none;  
background: rgb(16, 12, 45);  
border: 0;  
cursor: pointer;  
font-family: inherit;
```

```
border-radius: 5px;
color: #fff;
opacity: 0.9;
transition: 0.3s ease-in-out;
display: block;
margin: 0 auto;
}
```

```
.quiz-footer button:hover {
    background-color: #463e65;
}
```

```
.quiz-body button:hover{
    background-color: #463e65;
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<div class="quiz-container" id="quiz">
```

```
<div class="quiz-header">
```

```
<h2 class="header-txt">Java</h2>
```

```
</div>
```

```
<div class="quiz-body">
  <h2 id="question">Question Text</h2>
  <ul>
    <li>
      <input type="radio" name="answer" id="a" class="answer" />
      <label for="a" id="a_text">Questions</label>
    </li>
    <li>
      <input type="radio" name="answer" id="b" class="answer" />
      <label for="b" id="b_text">Questions</label>
    </li>
    <li>
      <input type="radio" name="answer" id="c" class="answer" />
      <label for="c" id="c_text">Questions</label>
    </li>
    <li>
      <input type="radio" name="answer" id="d" class="answer" />
      <label for="d" id="d_text">Questions</label>
    </li>
  </ul>
</div>
<div class="quiz-footer">
  <div class="quiz-details"></div>
  <button type="button" id="btn">Submit</button>
```

```
</div>
```

```
</div>
```

```
<script>
```

```
"use strict";
```

```
const quizData = [
```

```
{
```

```
question: "What is the purpose of the 'break' statement in Java?",
```

```
a: "To terminate the program",
```

```
b: "To exit a loop or switch statement",
```

```
c: "To skip the current iteration in a loop",
```

```
d: "To indicate the end of a method",
```

```
correct: "b"
```

```
},
```

```
{
```

```
question: "Which of the following is a valid declaration of a constant in  
Java?",
```

```
a: "constant int MAX_VALUE = 100;",
```

```
b: "final int MAX_VALUE = 100;",
```

```
c: "static final int MAX_VALUE = 100;",
```

```
d: "const int MAX_VALUE = 100;",
```

```
correct: "c"
```

},

{

question: "What is the default value of the elements in Java array of integers?",

a: "0",

b: "1",

c: "-1",

d: "Null",

correct: "a"

},

{

question: "Which keyword is used to implement method overriding in Java?",

a: "override",

b: "implements",

c: "extends",

d: "super",

correct: "c"

},

{

question: "What is the purpose of the 'this' keyword in Java?",

a: "To create a new instance of a class.",

b: "To refer to the current object.",

c: "To call a static method.",

d: "TO define a constructor.",

correct: "b"

},

{

question: "Which of the following is not a valid access modifier in Java?",

a: "private",

b: "protected",

c: "package-private",

d: "global",

correct: "d"

},

{

question: "What is the purpose of the 'StringBuilder' class in Java?",

a: "To create immutable strings.",

b: "To format output.",

c: "To build and modify mutable strings efficiently.",

d: "To perform mathematical operations.",

correct: "c"

},

{

question: "In Java, what is the main purpose of the 'try-catch' block?",

a: "To declare variables.",

b: "To define a loop.",

c: "To handle exceptions.",

d: "To create objects.",



correct: "c"

},

{

question: "Which of the following is true about the 'super' keyword in Java?",

a: "It refers to the superclass of the current class.",

b: "It can be used in static methods.",

c: "It is used to create a new instance of a class.",

d: "It is used for garbage collection.",

correct: "a"

},

{

question: "What will be the output of the following code snippet?\nint x = 5;\nx = x++ + ++x;",

a: "10",

b: "11",

c: "12",

d: "13",

correct: "c"

},

{

question: "What is the result of '3 << 2' in Java?",

a: "6",

b: "8",

c: "12",

d: "24",

correct: "b"

},

{

question: "Which method is called when an object is garbage collected in Java?",

a: "finalize()",

b: "dispose()",

c: "collect()",

d: "delete()",

correct: "a"

},

{

question: "What will happen if you attempt to compile and run a Java program that contains a 'main' method with the incorrect signature?",

a: "The program will not compile.",

b: "The program will compile but not run.",

c: "The program will run, but the 'main' method will be ignored.",

d: "The program will compile and run successfully.",

correct: "a"

},

{

question: "Which of the following is used to create a thread in Java?",

a: "run()",

b: "createThread()",

```
c: "start()",
d: "execute()",
correct: "c"
},
{
```

```
question: "What is the output of the following code snippet?\nString str1 =\n\"Hello\"; \nString str2 = \"World;\" \nString result = str1.concat(str2);\n\nSystem.out.println(result);",
```

```
a: "Hello",
b: "World",
c: "HelloWorld",
d: "null",
correct: "c"
},
```

```
];
```

```
const quiz = document.querySelector(".quiz-body");
const answerEl = document.querySelectorAll(".answer");
const questionEl = document.getElementById("question");
const footerEl = document.querySelector(".quiz-footer");
const quizDetailEl = document.querySelector(".quiz-details");
const liEl = document.querySelector("ul li");
```

```
const a_txt = document.getElementById("a_text");
```

```
const b_txt = document.getElementById("b_text");
const c_txt = document.getElementById("c_text");
const d_txt = document.getElementById("d_text");
const btnSubmit = document.getElementById("btn");

let currentQuiz = 0;
let score = 0;

loadQuiz();

function loadQuiz() {
  deselectAnswers();
  const currentQuizData = quizData[currentQuiz];
  questionEl.innerText = currentQuizData.question;
  a_txt.innerText = currentQuizData.a;
  b_txt.innerText = currentQuizData.b;
  c_txt.innerText = currentQuizData.c;
  d_txt.innerText = currentQuizData.d;
  quizDetailEl.innerHTML = `

`${currentQuiz + 1}` of
  `${quizData.length}`</p>`;
}

// deselect
function deselectAnswers() {
  answerEl.forEach((answerEl) => {


```

```
answerEl.checked = false;
});
}

// get selected
function getSelected() {
  let answer;
  answerEl.forEach((answerEls) => {
    if (answerEls.checked) {
      answer = answerEls.id;
    }
  });
  return answer;
}

btnSubmit.addEventListener("click", function () {
  const answers = getSelected();

  if (answers) {
    if (answers === quizData[currentQuiz].correct) {
      score++;
    }
    nextQuestion();
  }
}
```

```
});

// next Slide
function nextQuestion() {
  currentQuiz++;

  if (currentQuiz < quizData.length) {
    loadQuiz();
  } else {
    quiz.innerHTML = `

## You answered ${score}/${quizData.length} question correctly</h2> <button type="button" onclick="location.reload()">Reload</button> `; footerEl.style.display = "none"; } } </script> </body> </html>


```

# All code for PHP practical

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <title>PHP Practicals</title>
```

```
  <style>
```

```
    * {
```

```
      padding: 0;
```

```
      margin: 0;
```

```
      box-sizing: border-box;
```

```
    }
```

```
    body {
```

```
      background: rgb(16, 12, 45);
```

```
      font-family: Georgia, 'Times New Roman', Times, serif;
```

```
      display: flex;
```

```
      align-items: center;
```

```
      justify-content: center;
```

```
      height: 100vh;
```

```
      overflow: hidden;
```

```
    }
```

```
.quiz-container {  
  background: white;  
  border-radius: 10px;  
  box-shadow: 0 0 10px 2px rgba(100, 100, 100, 0.1);  
  max-width: 600px;  
  width: 100%;  
  color: rgb(13, 13, 13);  
}
```

```
.quiz-header {  
  display: flex;  
  align-items: center;  
  justify-content: space-between;  
  padding: 2rem 2rem;  
  box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);  
  border-top-left-radius: 10px;  
  border-top-right-radius: 10px;  
}
```

```
.quiz-header h2 {  
  font-size: 2rem;  
}
```



```
.quiz-header p {  
  background: #111;  
  padding: 0.4rem 1rem;  
  color: #fff;  
  border-radius: 5px;  
}
```

```
.quiz-body {  
  padding: 2rem 2rem;  
}
```

```
.quiz-body h2 {  
  padding: 1rem 0;  
  font-size: 2rem;  
  font-weight: 500;  
  text-align: center;  
  margin: 0;  
}
```

```
.quiz-body ul {  
  list-style: none;  
  padding: 0;  
}
```

```
.quiz-body ul li {  
margin: 1rem 0;  
font-size: 1rem;  
border: 1px solid rgb(16, 12, 45);  
padding: 0.7rem;  
border-radius: 5px;  
cursor: pointer;  
}
```

```
.quiz-body ul li label {  
cursor: pointer;  
padding: 0 0.4rem;  
}
```

```
.quiz-footer {  
display: flex;  
align-items: center;  
justify-content: space-between;  
padding: 1rem 2rem;  
box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);  
}
```

```
.quiz-footer button {  
padding: 0.6rem 1.5rem;
```

```
outline: none;
background: rgb(16, 12, 45);
border: 0;
cursor: pointer;
font-family: inherit;
border-radius: 5px;
color: #fff;
opacity: 0.9;
transition: 0.3s ease-in-out;
}
```

```
.quiz-body button {
padding: 0.6rem 1rem;
outline: none;
background: rgb(16, 12, 45);
border: 0;
cursor: pointer;
font-family: inherit;
border-radius: 5px;
color: #fff;
opacity: 0.9;
transition: 0.3s ease-in-out;
display: block;
margin: 0 auto;
```

```
}
```

```
.quiz-footer button:hover {  
    background-color: #463e65;  
}
```

```
.quiz-body button:hover{  
    background-color: #463e65;  
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<div class="quiz-container" id="quiz">
```

```
<div class="quiz-header">
```

```
<h2 class="header-txt">PHP</h2>
```

```
</div>
```

```
<div class="quiz-body">
```

```
<h2 id="question">Question Text</h2>
```

```
<ul>
```

```
<li>
```

```
<input type="radio" name="answer" id="a" class="answer" />
```

```
<label for="a" id="a_text">Questions</label>
```

```
</li>
<li>
  <input type="radio" name="answer" id="b" class="answer" />
  <label for="b" id="b_text">Questions</label>
</li>
<li>
  <input type="radio" name="answer" id="c" class="answer" />
  <label for="c" id="c_text">Questions</label>
</li>
<li>
  <input type="radio" name="answer" id="d" class="answer" />
  <label for="d" id="d_text">Questions</label>
</li>
</ul>
</div>
<div class="quiz-footer">
  <div class="quiz-details"></div>
  <button type="button" id="btn">Submit</button>
</div>
</div>

<script>
  "use strict";
```

```
const quizData = [  
  {  
    question: "What does PHP stand for?",  
    a: "Personal Home Page",  
    b: "Hyper Home Page",  
    c: "Public Hosting Platform",  
    d: "Programming Hyperlinks",  
    correct: "b"  
  },  
  {  
    question: "Which of the following is the correct way to start a PHP script?",  
    a: "<?php start",  
    b: "<?start",  
    c: "<php? start",  
    d: "<?php",  
    correct: "d"  
  },  
  {  
    question: "How do you comment a single line in PHP?",  
    a: "// comment",  
    b: "/* Comment */",  
    c: "--Comment--",  
    d: "#Comment#",
```

```
correct: "a"
```

```
},
```

```
{
```

```
question: "What function is used to output text in PHP?",
```

```
a: "echo",
```

```
b: "print",
```

```
c: "printf",
```

```
d: "display",
```

```
correct: "a"
```

```
},
```

```
{
```

```
question: "What is the correct way to check if two values are equal and of  
the same data type in PHP?",
```

```
a: "==",
```

```
b: "===",
```

```
c: "=",
```

```
d: "!=",
```

```
correct: "b"
```

```
},
```

```
{
```

```
question: "Which superglobal variable is used to access form data after  
submitting an HTML form with the 'post' method?",
```

```
a: "$_POST",
```

```
b: "$_GET",
```

```
c: "$_REQUEST",
```

```
d: "$_SESSION",
```

```
correct: "a"
```

```
},
```

```
{
```

```
question: "How do you include an external PHP file named 'functions.php' in your script?",
```

```
a: "include('functions.php')",
```

```
b: "require('functions.php')",
```

```
c: "include_once('functions.php')",
```

```
d: "All of the above",
```

```
correct: "d"
```

```
},
```

```
{
```

```
question: "What is the purpose of the 'session_start()' function in PHP?",
```

```
a: "To start a new PHP session",
```

```
b: "To resume an existing PHP session",
```

```
c: "To destroy a PHP session",
```

```
d: "To include session-related files",
```

```
correct: "a"
```

```
},
```

```
{
```

```
question: "Which of the following is used to connect to a MySQL database in PHP?",
```

```
a: "mysqli_connect()",
```

```
b: "mysql_connect()",
```



c: "pdo\_connect()",

d: "db\_connect()",

correct: "a"

},

{

question: "What is the purpose of the 'htmlspecialchars()' function in PHP?",

a: "convert special characters to HTML entities",

b: "Validate HTML code",

c: "Remove HTML tags from a string",

d: "Encode URLs",

correct: "a"

},

{

question: "What does the 'foreach' loop in PHP iterate over?",

a: "Keys of an array",

b: "Values of an array",

c: "Both keys and values of an array",

d: "Elements of a string",

correct: "c"

},

{

question: "Which function is used to find the length of a string in PHP?",

a: "str\_length()",

b: "count\_chars()",

c: "strlen()",

d: "str\_count()",

correct: "c"

},

{

question: "What is the purpose of the 'header()' function in PHP?",

a: "Include an external file",

b: "Redirect the user to a different page",

c: "Set HTTP response code",

d: "Print a header message",

correct: "c"

},

{

question: "Which PHP magic constant returns the current file's path?",

a: "FILE",

b: "DIR",

c: "PATH",

d: "CURRENT",

correct: "a"

},

{

question: "What is the purpose of the 'unset()' function in PHP?",

a: "Destroy a session variable",

b: "Remove a variable or element",

```
c: "Unset a cookie",  
d: "Stop script execution",  
correct: "b"  
},  
  
];
```

```
const quiz = document.querySelector(".quiz-body");  
const answerEl = document.querySelectorAll(".answer");  
const questionEl = document.getElementById("question");  
const footerEl = document.querySelector(".quiz-footer");  
const quizDetailEl = document.querySelector(".quiz-details");  
const liEl = document.querySelector("ul li");
```

```
const a_txt = document.getElementById("a_text");  
const b_txt = document.getElementById("b_text");  
const c_txt = document.getElementById("c_text");  
const d_txt = document.getElementById("d_text");  
const btnSubmit = document.getElementById("btn");
```

```
let currentQuiz = 0;
```

```
let score = 0;
```

```
loadQuiz();
```

```
function loadQuiz() {
  deselectAnswers();
  const currentQuizData = quizData[currentQuiz];
  questionEl.innerHTML = currentQuizData.question;
  a_txt.innerHTML = currentQuizData.a;
  b_txt.innerHTML = currentQuizData.b;
  c_txt.innerHTML = currentQuizData.c;
  d_txt.innerHTML = currentQuizData.d;
  quizDetailEl.innerHTML = `

`${currentQuiz + 1} of
  `${quizData.length}</p>`;
}


```

```
// deselect
```

```
function deselectAnswers() {
  answerEl.forEach((answerEl) => {
    answerEl.checked = false;
  });
}
```

```
// get selected
```

```
function getSelected() {
  let answer;
  answerEl.forEach((answerEls) => {
    if (answerEls.checked) {
```

```
answer = answerEls.id;
```

```
}
```

```
});
```

```
return answer;
```

```
}
```

```
btnSubmit.addEventListener("click", function () {
```

```
const answers = getSelected();
```

```
if (answers) {
```

```
if (answers === quizData[currentQuiz].correct) {
```

```
score++;
```

```
}
```

```
nextQuestion();
```

```
}
```

```
});
```

```
// next Slide
```

```
function nextQuestion() {
```

```
currentQuiz++;
```

```
if (currentQuiz < quizData.length) {
```

```
loadQuiz();
```

```
} else {
```

```
quiz.innerHTML = `

## You answered ${score}/${quizData.length} question correctly</h2> <button type="button" onclick="location.reload()">Reload</button> `; footerEl.style.display = "none"; } } </script> </body> </html>


```

## All code for Python practical

```
<!DOCTYPE html>
<html>
  <head>

    <style>

      * {
        padding: 0;
        margin: 0;
```

```
box-sizing: border-box;  
}
```

```
body {  
background: rgb(16, 12, 45);  
font-family: Georgia, 'Times New Roman', Times, serif;  
display: flex;  
align-items: center;  
justify-content: center;  
height: 100vh;  
overflow: hidden;  
}
```

```
.quiz-container {  
background: white;  
border-radius: 10px;  
box-shadow: 0 0 10px 2px rgba(100, 100, 100, 0.1);  
max-width: 600px;  
width: 100%;  
color: rgb(13, 13, 13);  
}
```

```
.quiz-header {  
display: flex;
```

```
align-items: center;
justify-content: space-between;
padding: 2rem 2rem;
box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);
border-top-left-radius: 10px;
border-top-right-radius: 10px;
}
```

```
.quiz-header h2 {
font-size: 2rem;
}
```

```
.quiz-header p {
background: #111;
padding: 0.4rem 1rem;
color: #fff;
border-radius: 5px;
}
```

```
.quiz-body {
padding: 2rem 2rem;
}
```

```
.quiz-body h2 {
```



```
padding: 1rem 0;  
font-size: 2rem;  
font-weight: 500;  
text-align: center;  
margin: 0;  
}
```

```
.quiz-body ul {  
list-style: none;  
padding: 0;  
}
```

```
.quiz-body ul li {  
margin: 1rem 0;  
font-size: 1rem;  
border: 1px solid rgb(16, 12, 45);  
padding: 0.7rem;  
border-radius: 5px;  
cursor: pointer;  
}
```

```
.quiz-body ul li label {  
cursor: pointer;  
padding: 0 0.4rem;
```

```
}
```

```
.quiz-footer {  
display: flex;  
align-items: center;  
justify-content: space-between;  
padding: 1rem 2rem;  
box-shadow: 0px 0px 5px rgba(0, 0, 0, 0.5);  
}
```

```
.quiz-footer button {  
padding: 0.6rem 1.5rem;  
outline: none;  
background: rgb(16, 12, 45);  
border: 0;  
cursor: pointer;  
font-family: inherit;  
border-radius: 5px;  
color: #fff;  
opacity: 0.9;  
transition: 0.3s ease-in-out;  
}
```

```
.quiz-body button {
```

```
padding: 0.6rem 1rem;
outline: none;
background: rgb(16, 12, 45);
border: 0;
cursor: pointer;
font-family: inherit;
border-radius: 5px;
color: #fff;
opacity: 0.9;
transition: 0.3s ease-in-out;
display: block;
margin: 0 auto;
}
```

```
.quiz-footer button:hover {
  background-color: #463e65;
}
```

```
.quiz-body button:hover{
  background-color: #463e65;
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
  <div class="quiz-container" id="quiz">
```

```
    <div class="quiz-header">
```

```
      <h2 class="header-txt">Python</h2>
```

```
    </div>
```

```
    <div class="quiz-body">
```

```
      <h2 id="question">Question Text</h2>
```

```
      <ul>
```

```
        <li>
```

```
          <input type="radio" name="answer" id="a" class="answer" />
```

```
          <label for="a" id="a_text">Questions</label>
```

```
        </li>
```

```
        <li>
```

```
          <input type="radio" name="answer" id="b" class="answer" />
```

```
          <label for="b" id="b_text">Questions</label>
```

```
        </li>
```

```
        <li>
```

```
          <input type="radio" name="answer" id="c" class="answer" />
```

```
          <label for="c" id="c_text">Questions</label>
```

```
        </li>
```

```
        <li>
```

```
          <input type="radio" name="answer" id="d" class="answer" />
```

```
          <label for="d" id="d_text">Questions</label>
```

```
    </li>
  </ul>
</div>
<div class="quiz-footer">
  <div class="quiz-details"></div>
  <button type="button" id="btn">Submit</button>
</div>
</div>
```

```
<script>
  "use strict";

  const quizData = [
    {
      question: "What is the purpose of the '__init__' method in Python class?",
      a: "To initialize class variables.",
      b: "To create a new instance of the class.",
      c: "To define a constructor.",
      d: "To destroy the class instance.",
      correct: "c"
    },
    {
      question: "What does the 'padd' statement do in Python?",
```

- a: "Terminates the program.",
- b: "Skips the current iteration in a loop.",
- c: "Creates a new instance of a class.",
- d: "Represents a null operation.",

correct: "d"

},

{

question: "In Python, what does the 'global' keyword do?",

- a: "Declares a global variable.",
- b: "Allocates memory for a variable.",
- c: "Specifies the data type of a variable.",
- d: "Converts a local variable into a global variable.",

correct: "a"

},

{

question: "What is the purpose of the 'open()' function in Python?",

- a: "Opens a file for reading or writing.",
- b: "Declares a new variable.",
- c: "Creates a new instance of a class.",
- d: "Executes a system command.",

correct: "a"

},

{

question: "How can you comment out multiple lines in Python?",

a: "// This is a comment",  
b: "/\* This is a comment \*/",  
c: "# This is a comment",  
d: "<!-- This is a comment -->",

correct: "c"

},

{

question: "What is the correct way to import the 'math' module in Python?",

a: "import math",  
b: "use math",  
c: "include math",  
d: "from math import",

correct: "a"

},

{

question: "Which of the following is a mutable data type in Python?",

a: "Tuple",  
b: "String",  
c: "List",  
d: "Set",

correct: "c"

},

{

question: "What does the 'len()' function return in Python?",

a: "The length of a string.",  
b: "The number of elements in a list.",  
c: "The size of a file.",  
d: "The type of a variable.",  
correct: "b"

},

{

question: "What is the purpose of the 'else' clause in a 'try-except' block?",

a: "It is always executed after the 'try' block.",  
b: "It is executed when an exception occurs.",  
c: "It is executed when no exception occurs.",  
d: "It is used to define a default exception.",  
correct: "c"

},

{

question: "Which of the following is a valid way to create an empty list in Python?",

a: "list = {}",  
b: "list = []",  
c: "list = ()",  
d: "list = None",  
correct: "b"

},

{

question: "How do you define a function in Python?",



a: "def function\_name:",  
b: "function function\_name():",  
c: "define function\_name():",  
d: "function\_name():",

correct: "b"

},

{

question: "What is the purpose of the '\_\_str\_\_' method in Python?",

a: "To convert an object to a string representation.",

b: "To compare two objects.",

c: "To define a constructor.",

d: "To check if an object is iterable.",

correct: "a"

},

{

question: "Which statement is used to exit a loop permanently in Python?",

a: "return",

b: "exit",

c: "break",

d: "continue",

correct: "c"

},

{

question: "What does the 'is' keyword do in Python?",

a: "Checks if two variables refer to the same object.",

b: "Compares the values of two variables.",

c: "Checks if a variable is of a certain type.",

d: "Assigns a value to a variable.",

correct: "a"

},

{

question: "What is the purpose of the 'yield' keyword in Python?",

a: "To define a generator function.",

b: "To terminate a loop permanently.",

c: "To create a new instance of a class.",

d: "To declare a constant variable.",

correct: "a"

},

];

```
const quiz = document.querySelector(".quiz-body");
```

```
const answerEl = document.querySelectorAll(".answer");
```

```
const questionEl = document.getElementById("question");
```

```
const footerEl = document.querySelector(".quiz-footer");
```

```
const quizDetailEl = document.querySelector(".quiz-details");
```

```
const liEl = document.querySelector("ul li");
```

```
const a_txt = document.getElementById("a_text");
const b_txt = document.getElementById("b_text");
const c_txt = document.getElementById("c_text");
const d_txt = document.getElementById("d_text");
const btnSubmit = document.getElementById("btn");

let currentQuiz = 0;
let score = 0;

loadQuiz();

function loadQuiz() {
  deselectAnswers();
  const currentQuizData = quizData[currentQuiz];
  questionEl.innerHTML = currentQuizData.question;
  a_txt.innerHTML = currentQuizData.a;
  b_txt.innerHTML = currentQuizData.b;
  c_txt.innerHTML = currentQuizData.c;
  d_txt.innerHTML = currentQuizData.d;
  quizDetailEl.innerHTML = `

`${currentQuiz + 1} of
  `${quizData.length}</p>`;
}

// deselect
function deselectAnswers() {


```

```
answerEl.forEach((answerEl) => {
  answerEl.checked = false;
});
}

// get selected
function getSelected() {
  let answer;
  answerEl.forEach((answerEls) => {
    if (answerEls.checked) {
      answer = answerEls.id;
    }
  });
  return answer;
}

btnSubmit.addEventListener("click", function () {
  const answers = getSelected();

  if (answers) {
    if (answers === quizData[currentQuiz].correct) {
      score++;
    }
  }
  nextQuestion();
}
```

```
    }
  });

  // next Slide
  function nextQuestion() {
    currentQuiz++;

    if (currentQuiz < quizData.length) {
      loadQuiz();
    } else {
      quiz.innerHTML = `

## You answered ${score}/${quizData.length} question correctly</h2> <button type="button" onclick="location.reload()">Reload</button> `; footerEl.style.display = "none"; } } </script> </body> </html>


```

# OUTPUT

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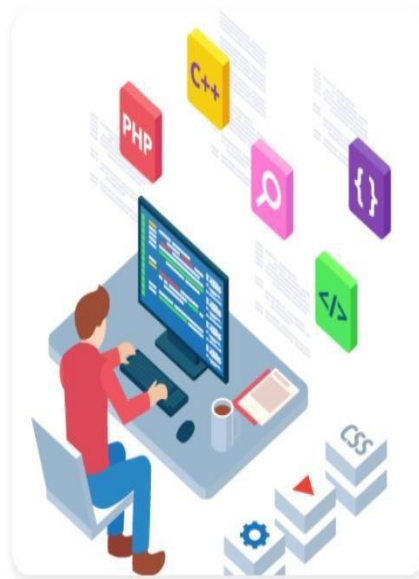
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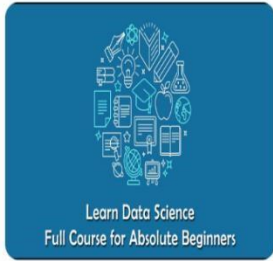


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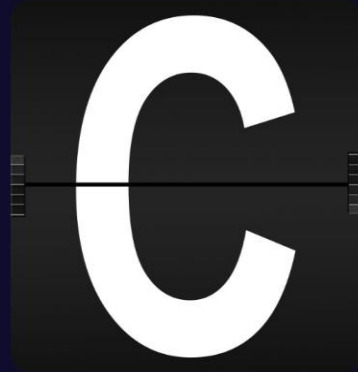
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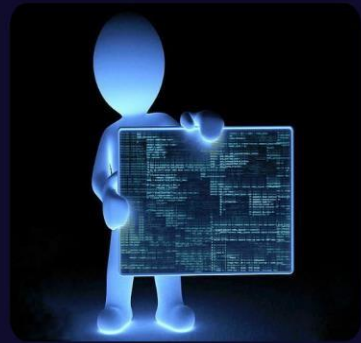
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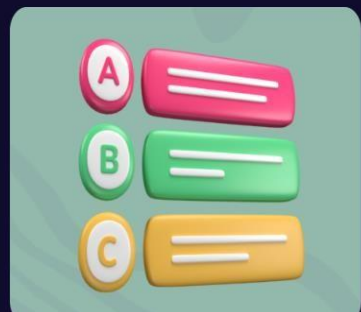
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## C

Introduction

Basics

Control Flow

Functions

Array & String

Pointer

Structure & Union

File Handling

Bitwise Operations

### Introduction

C is a versatile and influential programming language that has played a pivotal role in shaping the field of computer science and software development. Developed in the early 1970s by Dennis Ritchie at Bell Labs, C was created as an evolution of the B programming language. Its design aimed to provide low-level access to memory and hardware, allowing for efficient and close-to-the-machine programming. C quickly gained popularity due to its simplicity, efficiency, and the ability to write compact and fast code. Despite its age, C remains relevant and widely used today, forming the foundation for numerous modern programming languages.

### History of C Language:

The history of C can be traced back to the Bell Labs research center, where Dennis Ritchie, along with his colleagues, developed the language between 1972 and 1973. The motivation behind creating C was to build upon the limitations of the B programming language, addressing issues related to portability and code efficiency. C inherited the procedural programming paradigm from its predecessors but introduced structured programming constructs, making it more readable and maintainable. In 1978, the American National Standards Institute (ANSI) standardized the language, resulting in ANSI C, a crucial step that contributed to C's widespread adoption and uniformity in programming practices.

C's influence further expanded with the development of the Unix operating system, which was largely implemented in C. This association with Unix played a significant role in C's popularity, as Unix became a widely used operating system in academic and commercial environments. Over the years, C has served as the foundation for various operating systems, including Linux, and has been instrumental in the development of embedded systems, compilers, and software applications across diverse domains.

The simplicity and efficiency of C have led to its integration into numerous fields, from system programming to game development. Its syntax and features have inspired the creation of many programming languages, such as C++, C#, and Objective-C. C's legacy endures not only through its direct applications but also through the enduring principles and concepts it introduced to the world of programming, making it an essential language in the education and practice of computer science.

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**C**

**Introduction to C:**

C is a general-purpose, procedural programming language developed by Dennis Ritchie at Bell Labs in 1972.

Known for its efficiency, close-to-hardware functionality, and widespread use in system programming.

**Structure of a C Program:**

C programs start executing from the main() function.

Statements in C are terminated by semicolons, and blocks of code are enclosed in curly braces.

**Data Types:**

Basic data types include integers (int), floating-point numbers (float, double), and characters (char).

Derived data types include arrays (collections of elements of the same type), structures (composite data types), and pointers (variables that store memory addresses).

**C**

What is the correct way to declare a pointer variable in C?

int pointerVariable;

int \*pointerVariable;

pointerVariable int;

pointerVariable \*int;

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# C++ Language

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The C++ logo is displayed in white on a dark blue background. It consists of the letters 'C', '+', and '+' in a stylized, monospace font.

## C++

Introduction

Basics

Control Flow

Functions

OOPs

Templates

Memory Management

Exception Handling

STL Algorithms

Lambda Expressions

Operator Overloading

### Introduction

C++ is a versatile and widely used programming language that builds upon the foundation laid by its predecessor, the C programming language. Developed by Bjarne Stroustrup in the early 1980s at Bell Labs, C++ was conceived as an extension of C with additional features for object-oriented programming. The name "C++" reflects this evolution, as the "++" operator in C increments a variable, symbolizing an enhancement or evolution of the original language. C++ combines the procedural programming paradigm of C with powerful abstractions and features for organizing code and data, making it suitable for a broad spectrum of application domains.

### History

The journey of C++ began with Bjarne Stroustrup's desire to improve the efficiency and expressiveness of C while incorporating the principles of object-oriented programming (OOP). Stroustrup aimed to create a language that would enable developers to write efficient, modular, and reusable code. The first version of C++ was implemented in 1983, and it included classes, derived classes, and basic inheritance. Subsequent versions introduced key features such as virtual functions, operator overloading, and templates, expanding the language's capabilities and expressive power.

The standardization of C++ began in the late 1980s, leading to the release of the first official standard, known as C++98, in 1998. This standardization process, overseen by the International Organization for Standardization (ISO), played a crucial role in establishing C++ as a stable and widely adopted programming language. Subsequent standards, including C++11, C++14, C++17, and C++20, brought further enhancements, incorporating modern features, improvements, and expanded libraries.

Throughout its evolution, C++ has been influential in various industries, including systems programming, game development, embedded systems, and large-scale software projects. Its ability to combine low-level programming with high-level abstractions makes it suitable for a diverse range of applications. C++ has influenced the development of other programming languages and continues to be a cornerstone in the education and practice of computer science and software engineering. Its rich history and ongoing relevance underscore its position as a language that has stood the test of time and remains a powerful tool for developers worldwide.

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**C++**

**Introduction to C++:**  
C++ is an extension of the C programming language with object-oriented programming features.  
Developed by Bjarne Stroustrup in 1979.

**Object-Oriented Programming (OOP):**  
Core paradigm in C++, emphasizing classes and objects.  
Encapsulation, inheritance, and polymorphism are key OOP concepts.

**Classes and Objects:**  
Classes define blueprints for objects.  
Objects are instances of classes, encapsulating data and methods.

**Inheritance:**  
Allows a class to inherit properties and behaviors from another class.  
Supports the creation of a hierarchy of classes.

**C++**

What is the correct way to declare a pointer in C++?

int ptr;

int \*ptr;

pointer int;

pointer \*int;

1 of 15 Submit



# Java

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## JAVA

Introduction

Basics

Control Statement

Functions

Class and Object

Encapsulation

Inheritance

Abstraction

Polymorphism

Package & Interface

Exception Handling

Multithreading

File Handling

### Introduction

# Java, a programming language that emerged in 1995, has become a cornerstone of modern software development. Conceived by Sun Microsystems and now stewarded by Oracle, Java has left an indelible mark on the tech industry. Its core tenets include platform independence, achieved through the Java Virtual Machine (JVM), which allows Java code to run on any device with a compatible JVM implementation. This "Write Once, Run Anywhere" philosophy facilitates widespread adoption in diverse domains.

# Java's strength lies in its object-oriented design, automatic memory management, and a rich standard library. Developers benefit from its portability, enabling the creation of applications that seamlessly operate on various platforms. The language's versatility extends from enterprise-level solutions to web development and mobile applications, with Android OS relying heavily on Java.

# The Java ecosystem flourishes with robust frameworks like Spring and Hibernate, empowering developers to build scalable and maintainable systems efficiently. Java's commitment to backward compatibility ensures the longevity of applications, providing a stable foundation for innovation.

# Furthermore, Java continually evolves, with updates introducing new features and enhancements. The community-driven nature of Java's development, fostered through Java Community Process (JCP), ensures that the language stays relevant in the ever-changing tech landscape.

# In conclusion, Java's enduring popularity stems from its adaptability, portability, and the vibrant community that sustains its growth. As a language that has withstood the test of time, Java remains a linchpin in modern software engineering, driving innovation across a spectrum of applications and industries.

### History:

# **1991-1995:** Java's story began with a team at Sun Microsystems, led by James Gosling. The project was originally called Oak and aimed at creating a language for consumer electronic devices. However, with the rise of the Internet, the team adapted the language for the web.

# **1995:** Java 1.0 was officially released, and its key feature was the ability to run on any device with a Java Virtual Machine, allowing developers to "write once, run anywhere."

# **1996:** The first major update, Java 1.1, included significant improvements and introduced the JavaBeans component architecture.

# **2004:** Java 5 (or Java 1.5) brought about major changes, including the introduction of generics, metadata annotations, and the enhanced for loop.

# **2014:** Java 8 introduced lambda expressions, the Stream API, and other features to support functional programming.

# **2017:** Java 9 marked the beginning of a new release cadence, with features like the module system and JShell for interactive Java.

# **2018-present:** The Java release cycle shifted to a time-driven model, delivering a new feature release every six months. This rapid release cycle allows developers to access new features more frequently.



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## Java

**Introduction to Java:**

Java is a versatile programming language known for its object-oriented approach, designed to run on any device with the help of the Java Virtual Machine (JVM).

It emphasizes code portability, allowing developers to write applications that can be executed across diverse platforms.

**Basic Structure:**

Java programs are organized into classes and methods, with the main method serving as the entry point for execution.

This modular structure promotes code organization and readability in software development.

**Variables:**

Variables in Java act as containers for data, declared with a type and a name, and can hold different types of information, such as integers, doubles, characters, or boolean values.

They serve as essential building blocks for storing and manipulating data

## Java

What is the purpose of the 'break' statement in Java?

To terminate the program

To exit a loop or switch statement

To skip the current iteration in a loop

To indicate the end of a method

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# Python

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**Python**

**Introduction to Python:**  
General-purpose, high-level programming language.  
Emphasizes readability and ease of use.

**Syntax and Variables:**  
Clear, readable syntax with indentation.  
Variables dynamically typed; no need for explicit declaration.

**Data Types:**  
Basic types include integers, floats, strings, booleans.  
Lists, tuples, sets, and dictionaries for more complex data structures.

**Control Structures:**  
Conditional statements (if, else, elif).  
Looping constructs (for, while).

## Python

What is the purpose of the '`__init__`' method in Python class?

To initialize class variables.

To create a new instance of the class.

To define a constructor.

To destroy the class instance.

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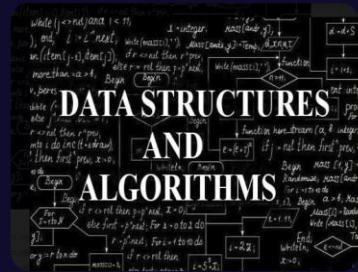
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# DSA (Data Structures and Algorithms)

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## Data Structures

**Arrays:**  
Contiguous memory storage for elements.  
O(1) access time, but insertions and deletions may be inefficient.

**Linked Lists:**  
Nodes linked together, allowing dynamic size.  
Singly linked lists, doubly linked lists, and circular linked lists.

**Stacks:**  
LIFO (Last In, First Out) data structure.  
Used for managing function calls, undo mechanisms, etc.

**Queues:**  
FIFO (First In, First Out) data structure.  
Implementations include regular queues and priority queues.

## DSA

Which of the following is not a linear data structure?

Array

Linked List

Stack

Tree

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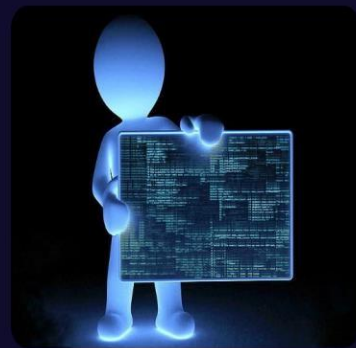
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## PHP Language

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