

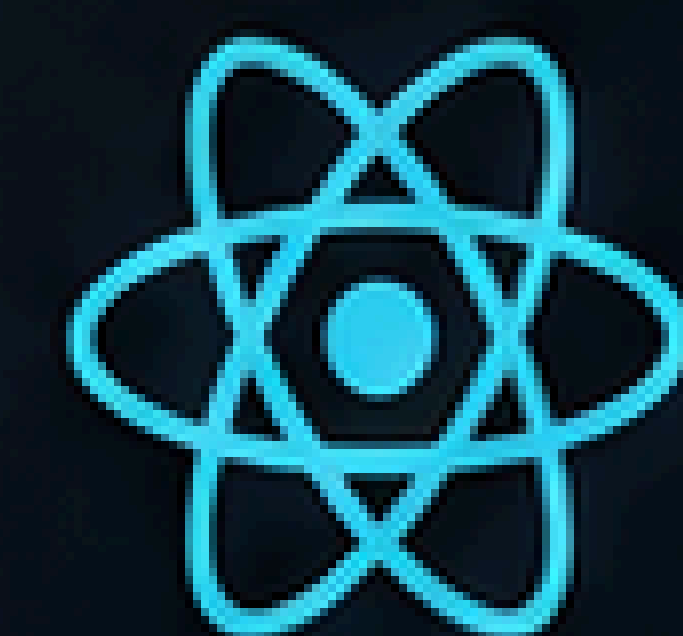
MERN STACK

Build Modern Web Applications



MONGODB
Database

NoSQL Database
for your application



REACT.JS
Frontend Library

Build interactive UIs
with component
based architecture



EXPRESS.JS

Backend Framework
Fast, minimal and
flexible Node.js
framework



NODE.JS
Runtime Environment

Run JavaScript on
the server side
with Node.js

MERN STACK

• with **AI Specialization** •

FOUNDATION PROGRAM



contact@regexsoftware.com



www.regexsoftware.com

ABOUT THE PROGRAM

At Regex Software, we offer a comprehensive 18–24 Month MERN Stack with AI Specialization Foundation Program designed especially for B.Tech, BCA, B.Sc, BBA, B.Com and other college students who want to build a strong career in full stack web development with AI skills.

This program is ideal for 1st and 2nd year students who want to start learning web technologies early and gain a competitive edge in the industry. The course is designed to build strong fundamentals first and then gradually move toward advanced concepts in the MERN stack and AI integration.

At Regex Software, we believe in practical learning rather than only theoretical knowledge. Our training approach combines conceptual understanding with hands-on implementation through real-world projects, live assignments, and industry case studies. Throughout the 18–24 month journey, students continuously work on practical tasks that help them understand how technologies are used in real companies and business environments.

The curriculum covers MongoDB, Express.js, React.js, Node.js, along with modern web tools and AI integration. Students also learn Git & GitHub, REST APIs, Authentication, Deployment, and DevOps basics. The entire learning path is designed according to current industry requirements so students become job-ready with practical industry skills.



MODE

Physical
(Jaipur & Ahmedabad)
or Online
(Google Meet)



DURATION

18–24 months
+ 6 months support



PARTICIPANTS

18 - 20 Per
Batch

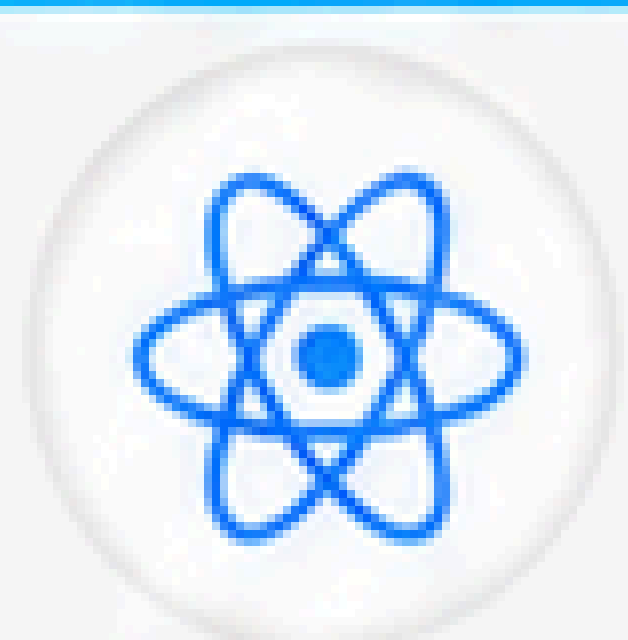
WHAT YOU WILL LEARN ?



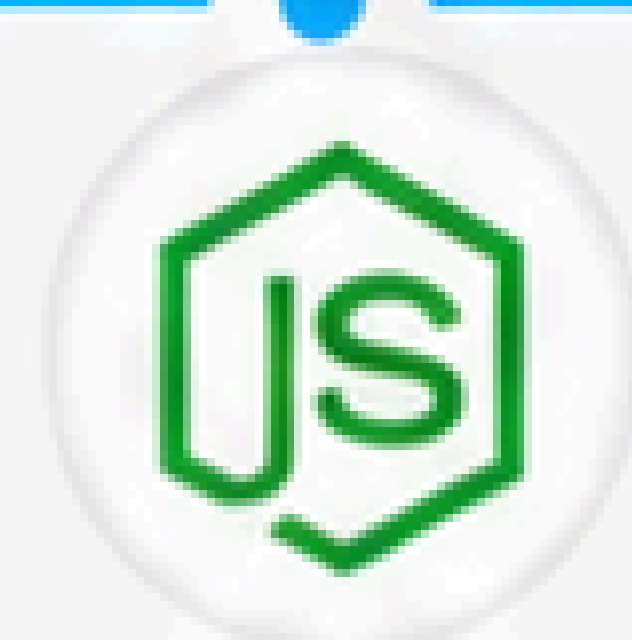
MongoDB



Express.js



React.js



Node.js



Redux



TypeScript



JWT Auth



HTML



CSS



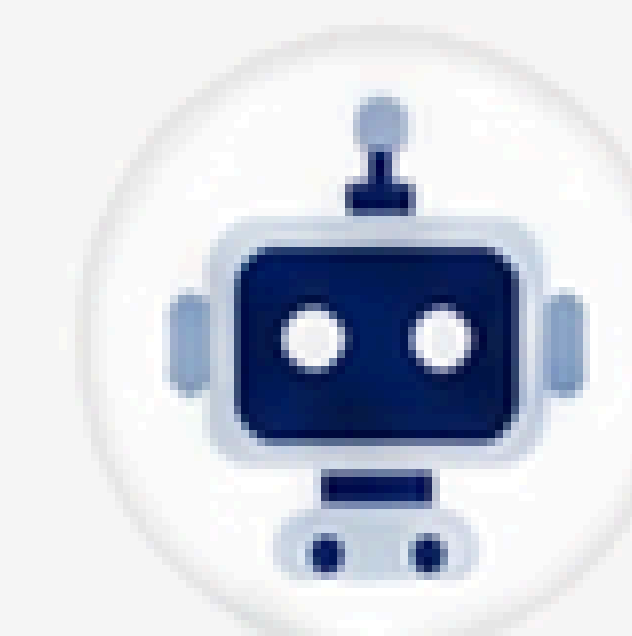
JavaScript



Bootstrap



Git & GitHub



AI Integration



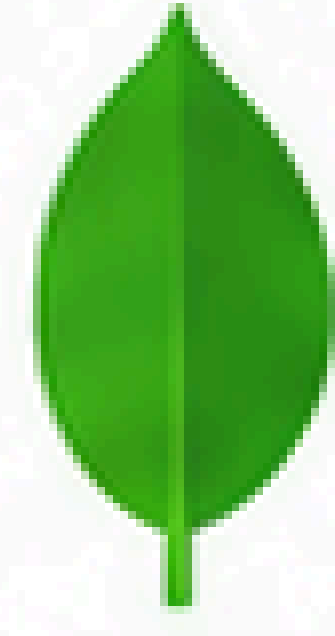
Deployment
& DevOps

MERN STACK

with

AI Specialization

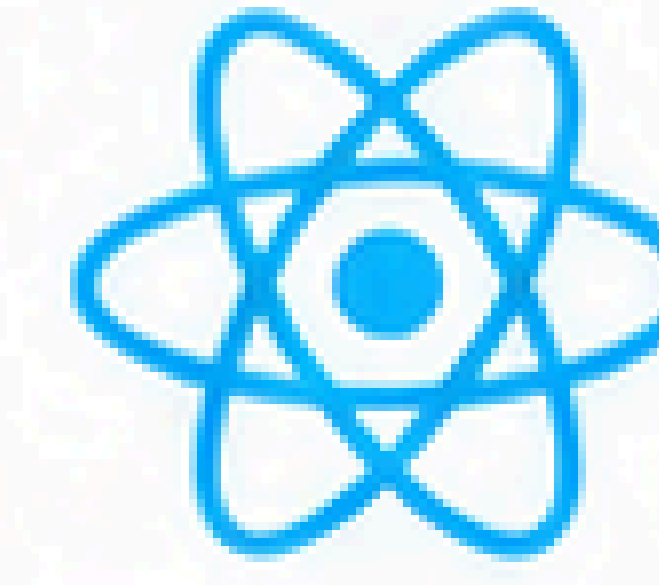
FOUNDATION PROGRAM



MongoDB



Express.js



React.js



Node.js

PACKAGE OFFERED SO FAR

IT CANDIDATES

→ Minimum Package
4 LPA

→ Average Package
4 – 6 LPA

→ Overall Highest Package
39 LPA

NON-IT CANDIDATES

→ Minimum Package
3 LPA

→ Average Package
3.5 – 5 LPA

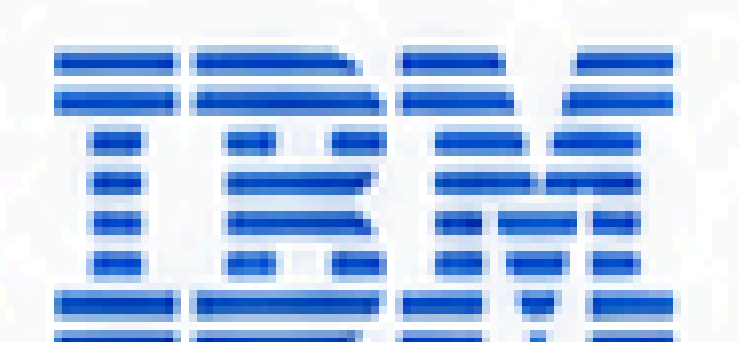
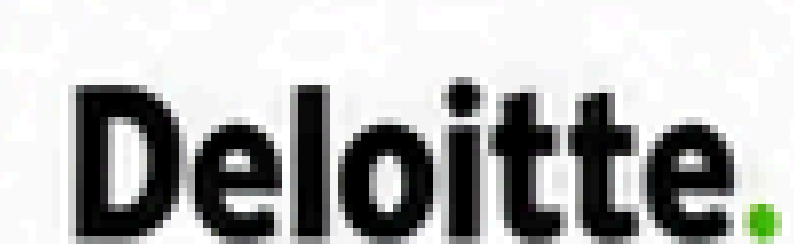
→ Overall Highest Package
14.5 LPA



EXTRA SESSIONS:

Additional Session on Git, Docker, AWS Basics, Jenkins and many more for all students.

OUR STUDENTS PLACED // PARTNERSHIP



STUDY MATERIAL

- E-Notes
- Assignments & PDF test
- Live Video Lectures
- Access of Recordings & Study Material
- Mentorship Support
- Work on multiple Minor Projects & Use Cases
- Work on Live Projects



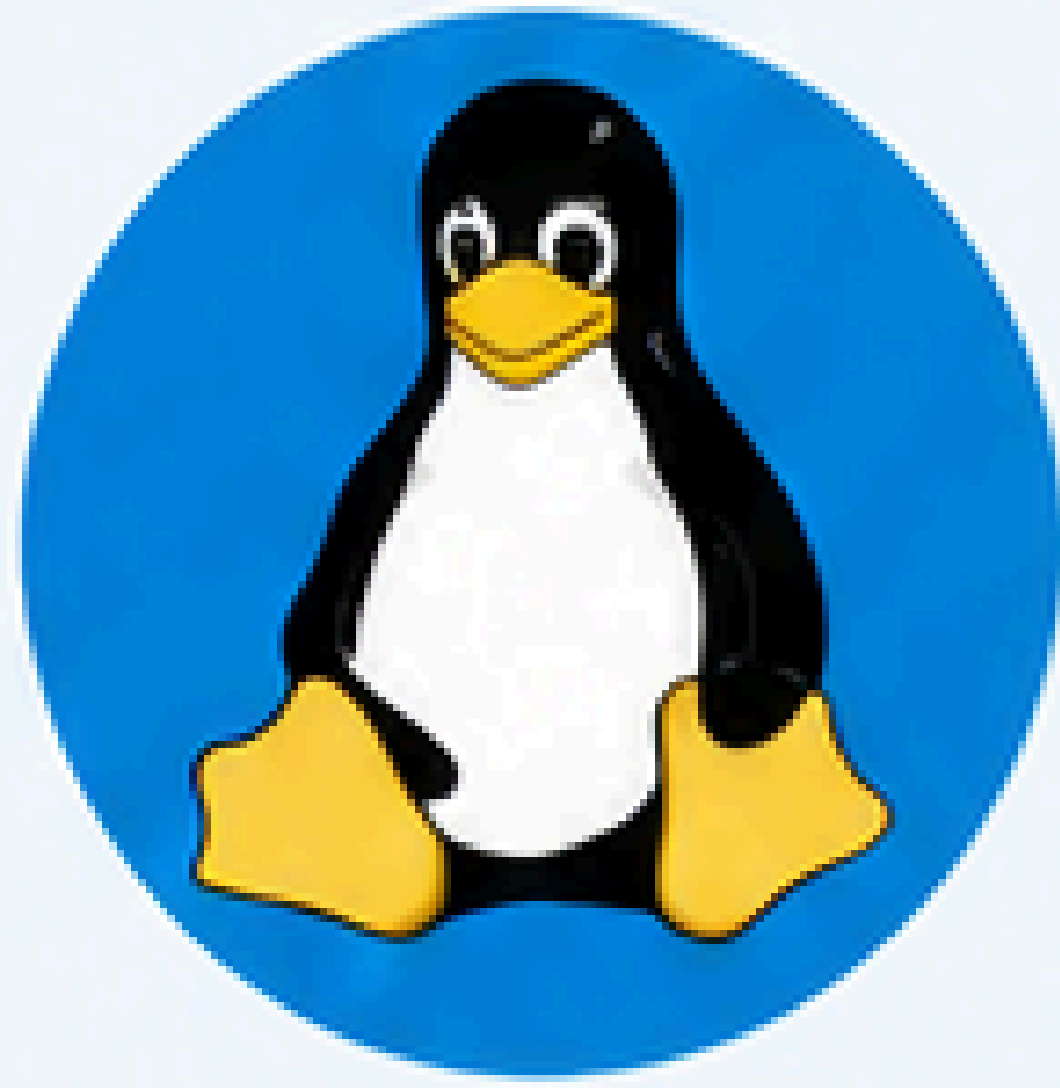
OUTPUT

- Build modern, responsive and scalable web applications
- Become job-ready Full Stack Developer with real-world projects
- Understand working of MERN stack in depth
- Build projects on multiple domains
- Work on more than 25 Use CASES & Projects
- Learn to deploy your applications on various cloud platforms
- Learn Git, GitHub, REST APIs, Authentication, and DevOps basics



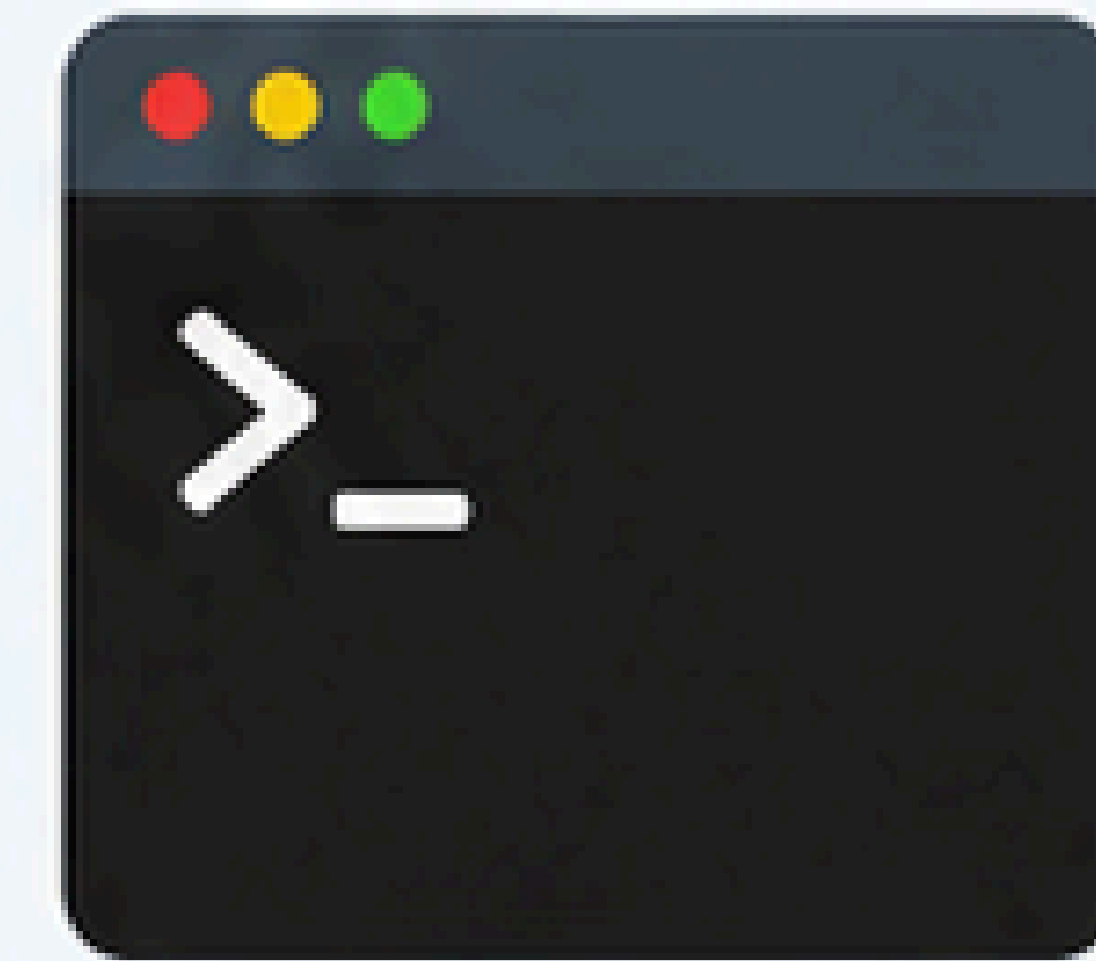
COURSE CONTENT:

PHASE 1



1. LINUX BASICS

- Introduction to Linux
- Basic Commands of Linux OS
- Vi Editor
- Tar Archive
- User Management and Permission



2. GITHUB

- Git vs GitHub
- Git Commands
- Git Branches
- Branching and Merging
- Git Push vs Pull Commands



3. C PROGRAMMING – CORE CONCEPTS

- Data Types
- Variables
- Variable Scope (Local, Global)
- Constants
- Operators
- Decision Making Statements (if Statement, if..else, Switch)
- Loops (While Loop, Do-While Loop, for-loop)



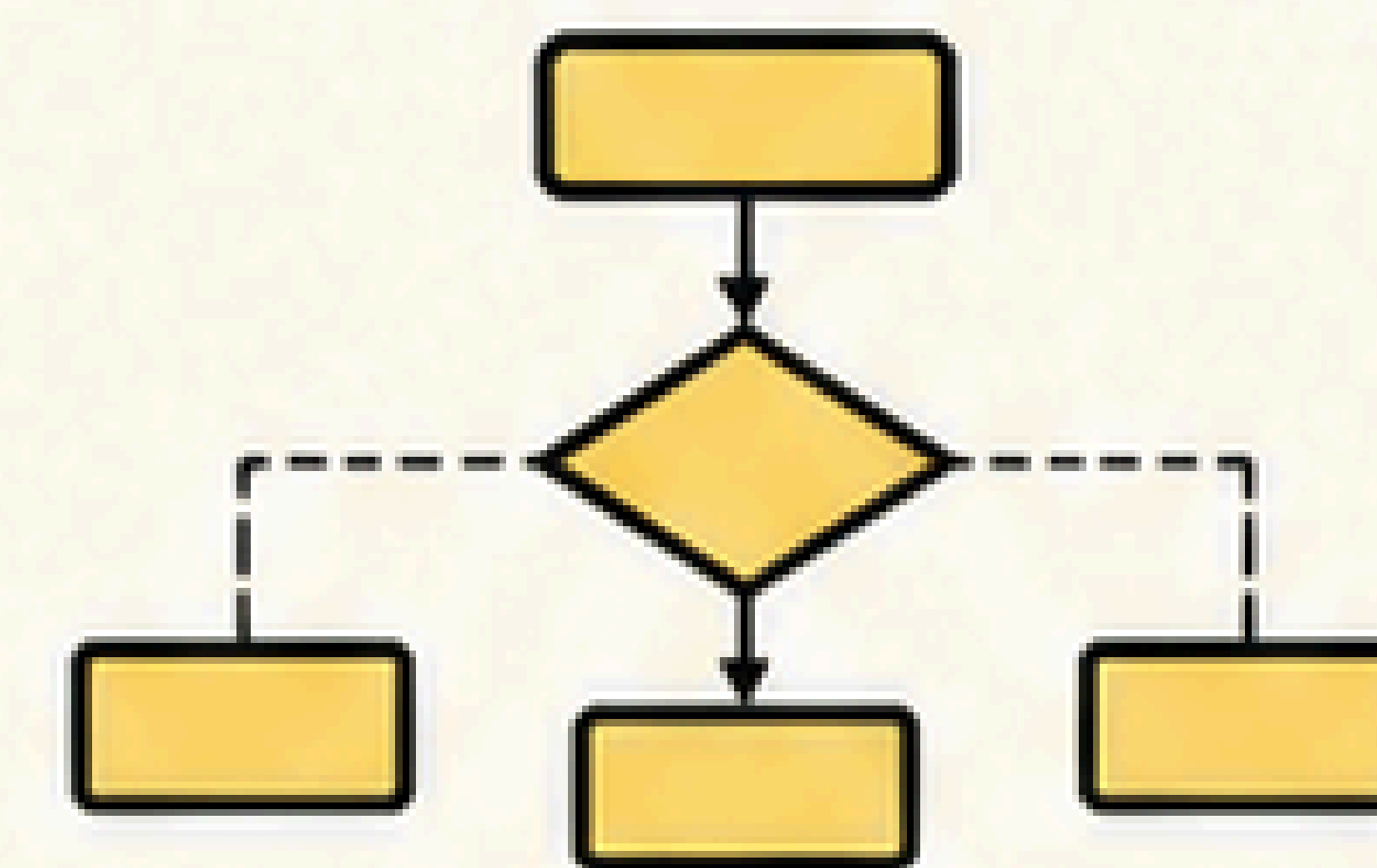
4. C PROGRAMMING – ADVANCED BASICS

- While Loop
- Do-While Loop
- for-loop
- Basic I/O Functions



5. LOGIC BUILDING

- Logical Thinking and Approach
- Flowcharts and Pseudocode
- Pattern Recognition
- Basic Problem-Solving



6. BASICS PROBLEM-SOLVING

- Understanding Problem Statements
- Breaking Problems into Steps
- Test Cases and Debugging
- Optimizing Solutions (Basics)



PHASE 2



1. C++ PROGRAMMING (OOP CONCEPTS)

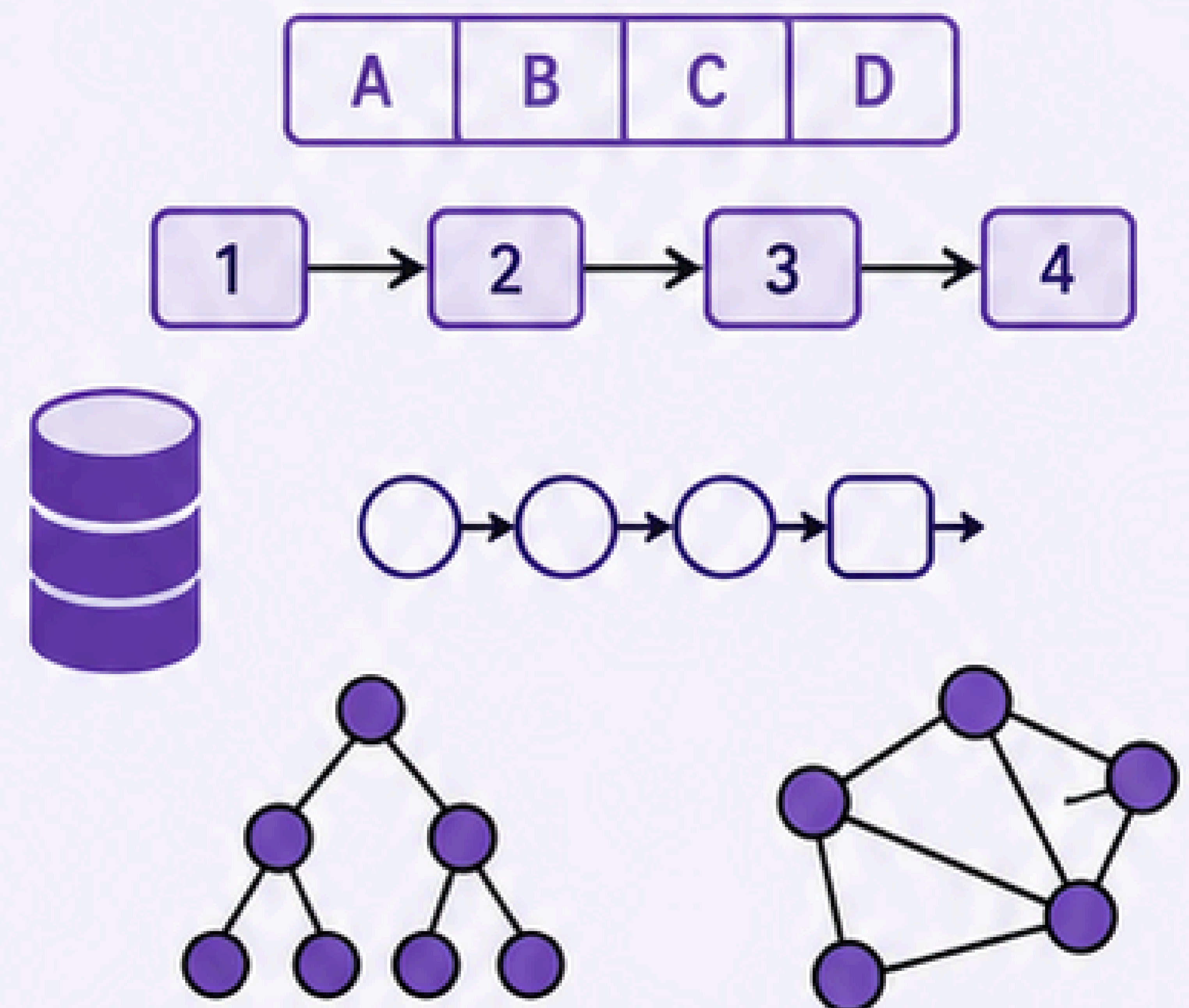
- Classes and Objects
- Constructors and Destructors
- this Pointer
- Access Specifiers: public, private, protected
- Getter and Setter Functions

```
class Student {  
public:  
    void set(int x);  
    int get();  
};
```



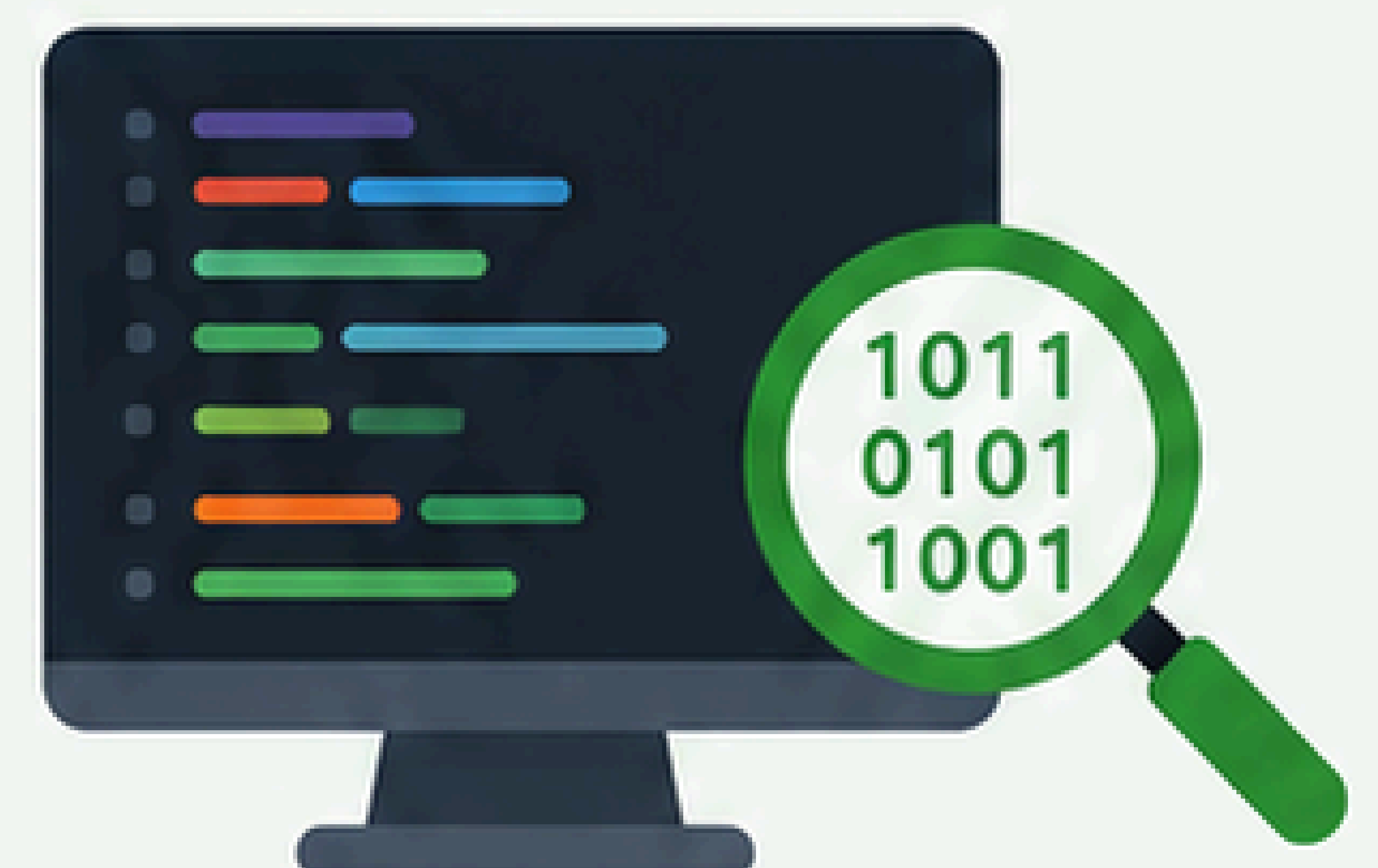
2. DATA STRUCTURES (ARRAY, LINKED LIST, STACK, QUEUE, TREES, GRAPHS)

- Arrays
- Linked List
- Stack
- Queue
- Trees
- Graphs



3. ALGORITHMS (SORTING, SEARCHING, RECURSION)

- Sorting Algorithms
- Searching Algorithms
- Recursion and Backtracking
- Time and Space Complexity



4. PROBLEM SOLVING (LEETCODE / CODEFORCES LEVEL)

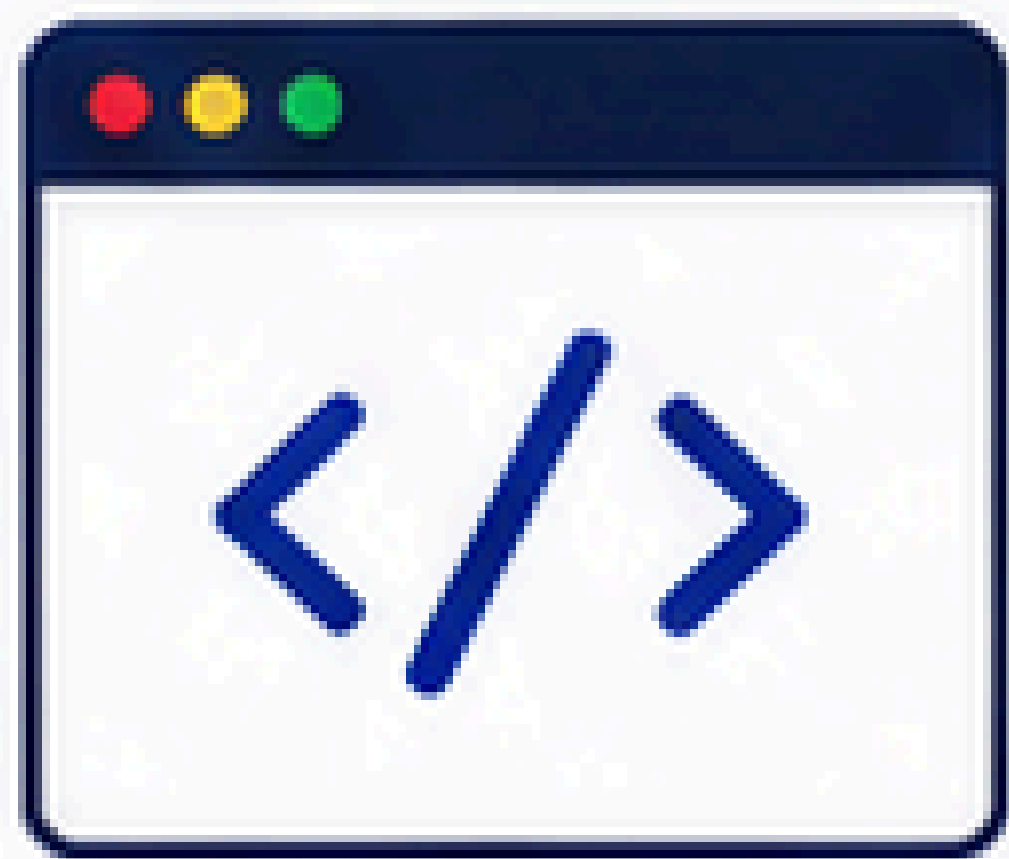
- Problem Solving Techniques
- Pattern Recognition
- Practice on LeetCode
- Practice on Codeforces



PHASE 3

HTML BASICS

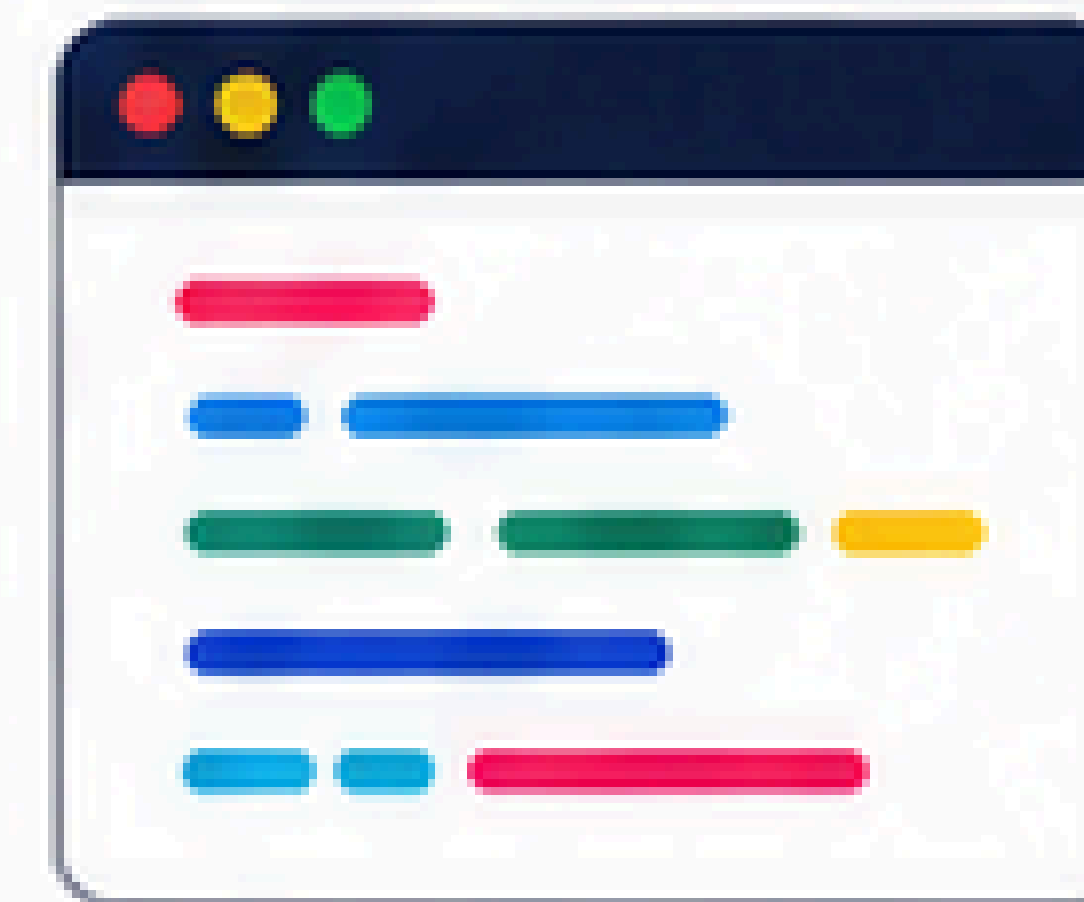
HTML



- Introduction to HTML and Basic Elements
- HTML Elements and Attributes
- Text Formatting Tags
- Lists and Links
- HTML Tables
- HTML Forms
- Form Attributes and Validation
- Including CSS in HTML
- CSS Syntax and Selectors

CSS BASICS

CSS



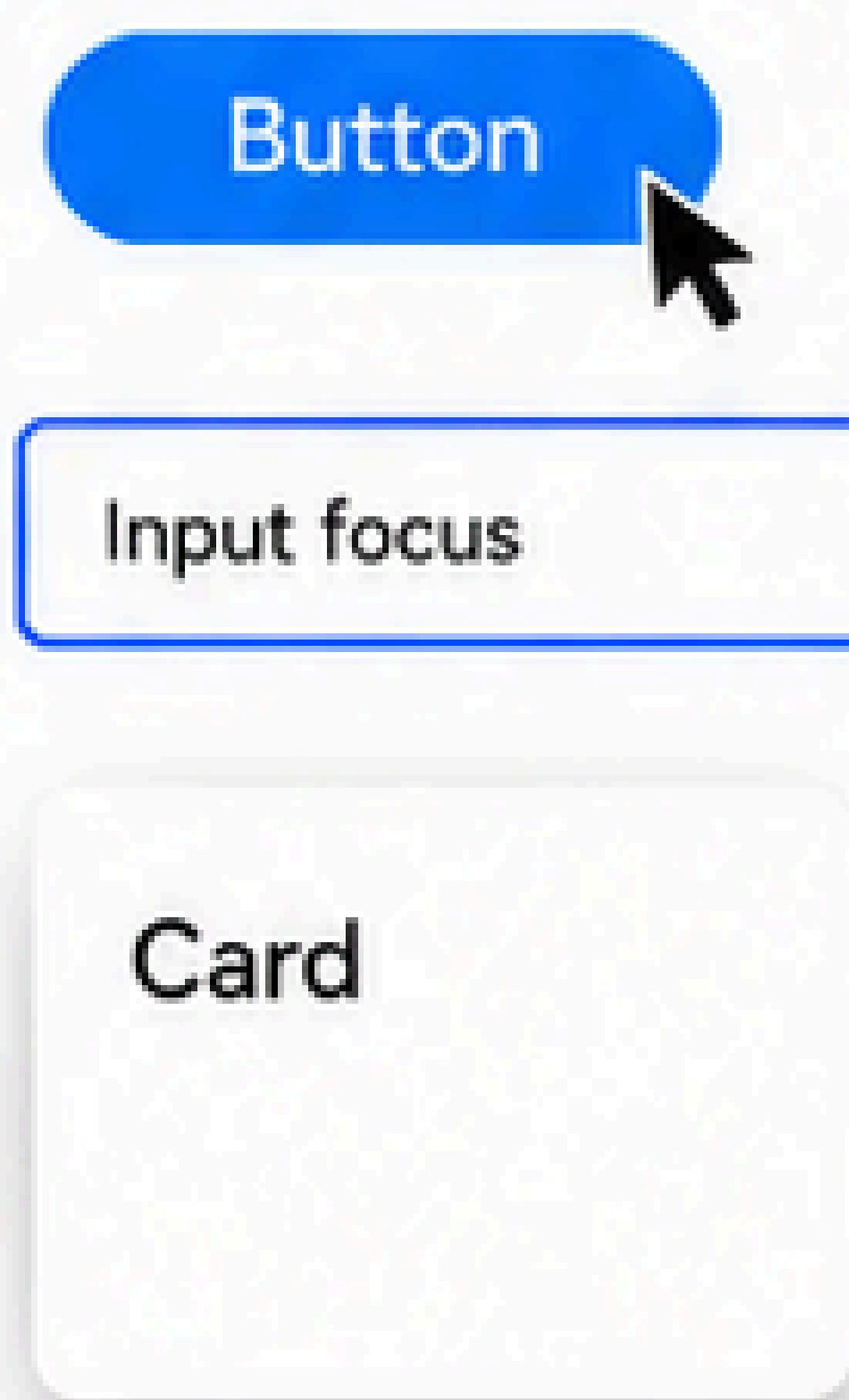
- Color and Background
- Text Styling
- The Box Model
- Display and Visibility
- Positioning
- Flexbox

RESPONSIVE DESIGN & CSS



- Responsive Design
 - CSS Transitions and Animations
 - Pseudo-classes and Pseudo-elements
 - CSS Grid
-
- Mobile-first approach
 - Using responsive utilities (sm.; md.; lg.; etc.)
 - Pseudo-Class Variants

HOVER, FOCUS & UTILITIES



- Hover, focus, active, etc.
 - Group hover and focus-within
 - Pseudo-Class Variants
-
- Hover, focus, active, etc.
 - Group hover and focus-within
 - Spacing Utilities
 - Margin and padding (m-4, p-2, etc.)
 - Negative margins
 - Shadow and Effects
 - Box shadows (shadow-sm, shadow-lg)
 - Opacity and blur

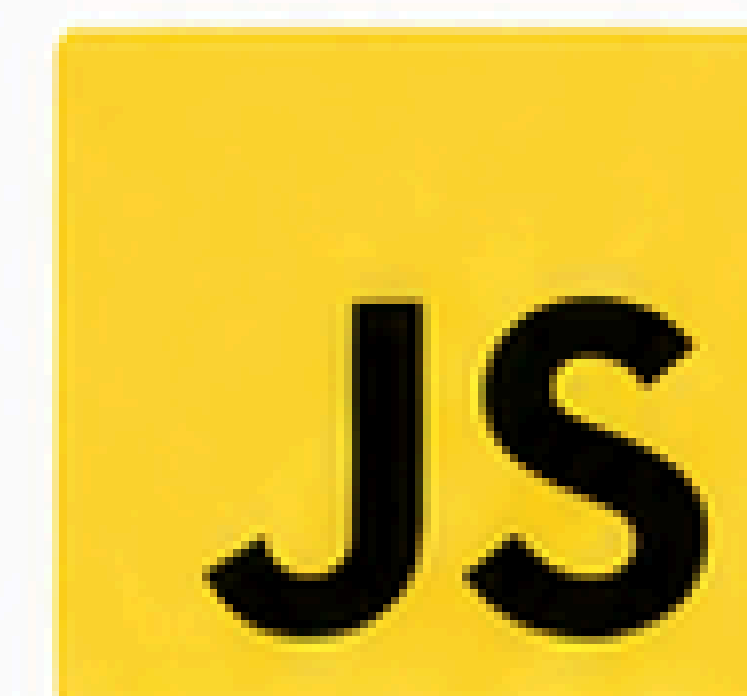
TAILWIND CSS



```
...  
<div class="  
  p-4 m-2 bg-blue-500  
  text-white rounded  
">
```

- What is Tailwind CSS?
 - Overview of utility-first CSS framework
 - Installation
-
- Installing via CDN
 - Installing using npm/yarn
 - Setting up with frameworks (React, Vue, Angular)
 - Responsive Design
-
- Mobile-first approach
 - Using responsive utilities (sm.; md.; lg.; etc.)
 - Pseudo-Class Variants

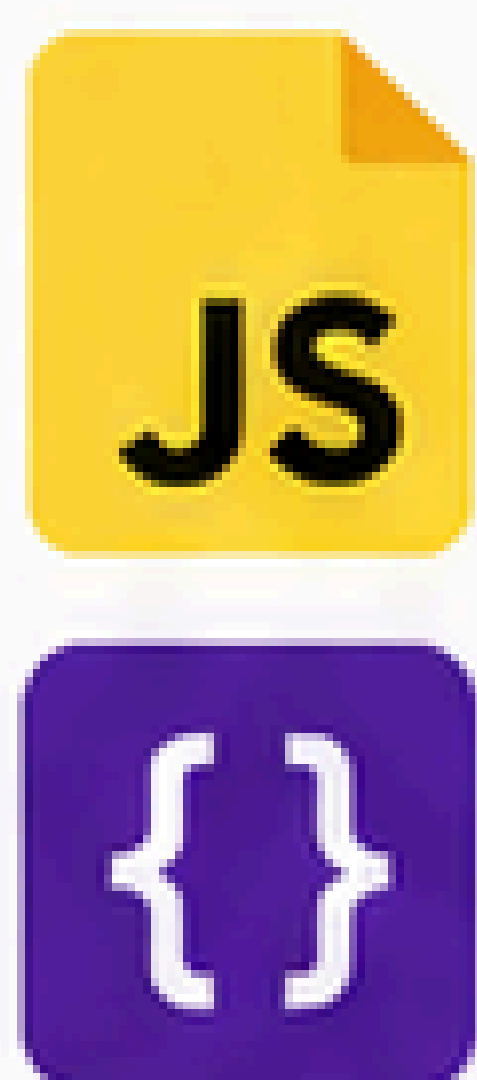
JAVASCRIPT BASICS



```
...  
let name = "John";  
if (name) {  
  console.log(name);  
}  
for(let i=0; i<5; i++) {  
  console.log(i);  
}
```

- Introduction to JavaScript
- Variables and Data Types
- Let, Const, and Block Scope
- Operators
- Control Structures (if, switch)
- Loops (for, while)
- String and String Methods

JAVASCRIPT ADVANCED

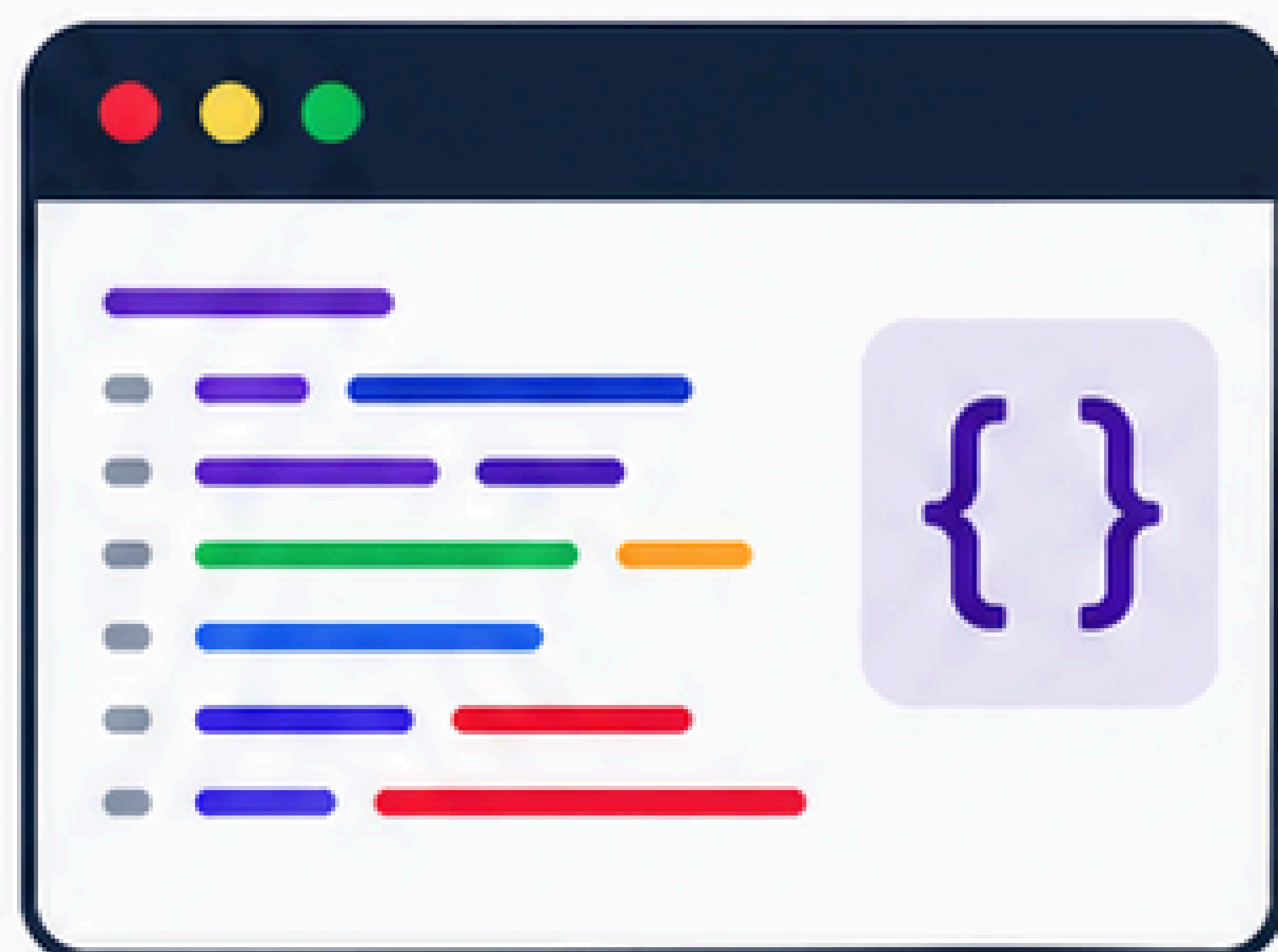


- Functions and Scope
- Lexical Scope
- Closures
- Currying
- Arrays and Objects
- Events and Event Handling
- Destructuring
- Spread and Rest Operators

```
const arr = [1, 2, 3];  
const [a, b, ...rest] = arr;  
const obj = { x: 10, y: 20 };  
const { x, y } = obj;  
  
button.addEventListener('click', () => {  
  console.log('Clicked');  
});
```

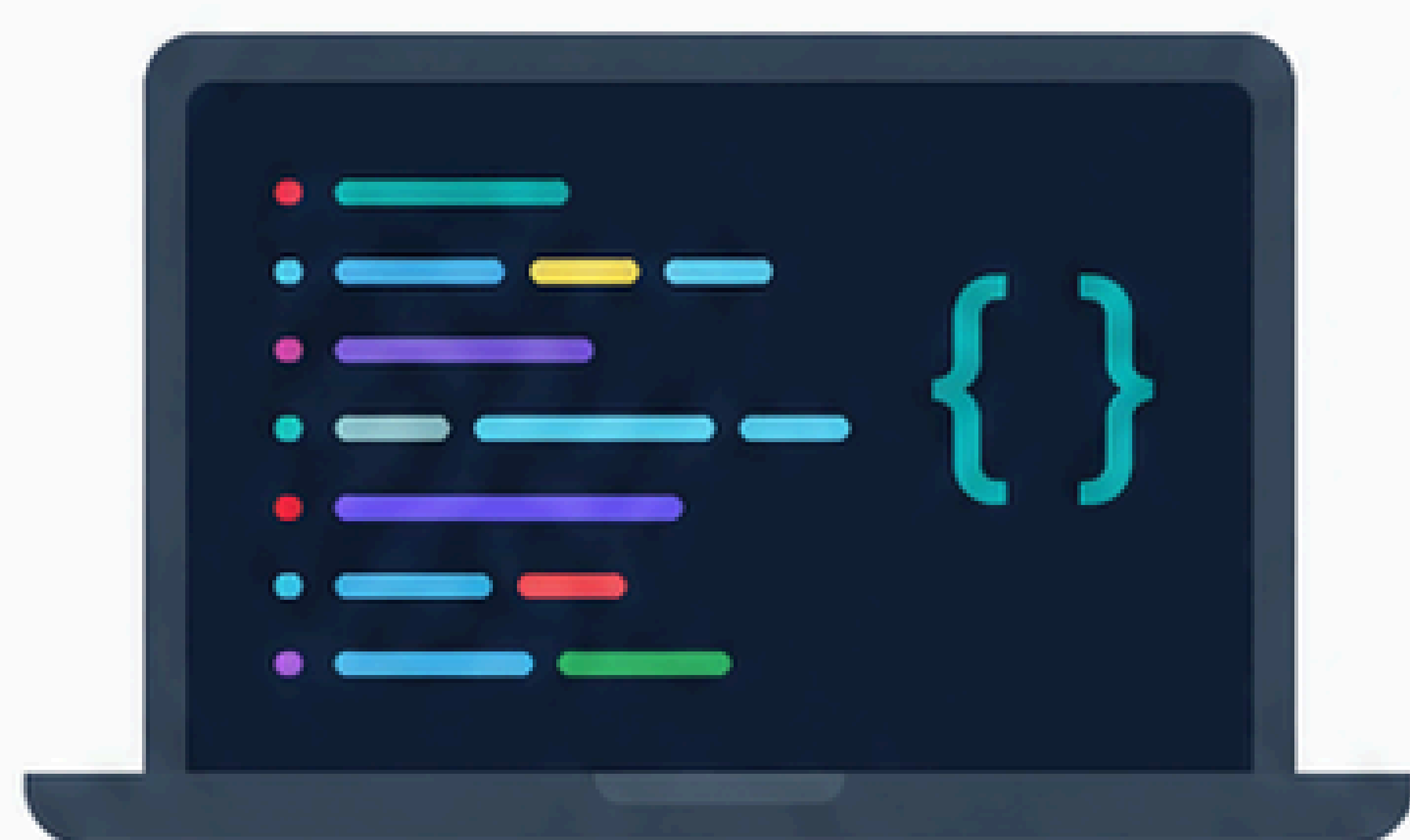
PHASE 3

PART 1 - ADVANCED JAVASCRIPT BASICS



- Callbacks
- Array Methods
- Object Methods
- Promises
- Async/Await
- JSON and Fetch API
- Error Handling
- Local Storage and Session Storage
- Lambda Functions

PART 2 - ES6+ CONCEPTS



- Closures
- Currying
- Arrays and Objects
- Events and Event Handling
- Destructuring
- Spread and Rest Operators

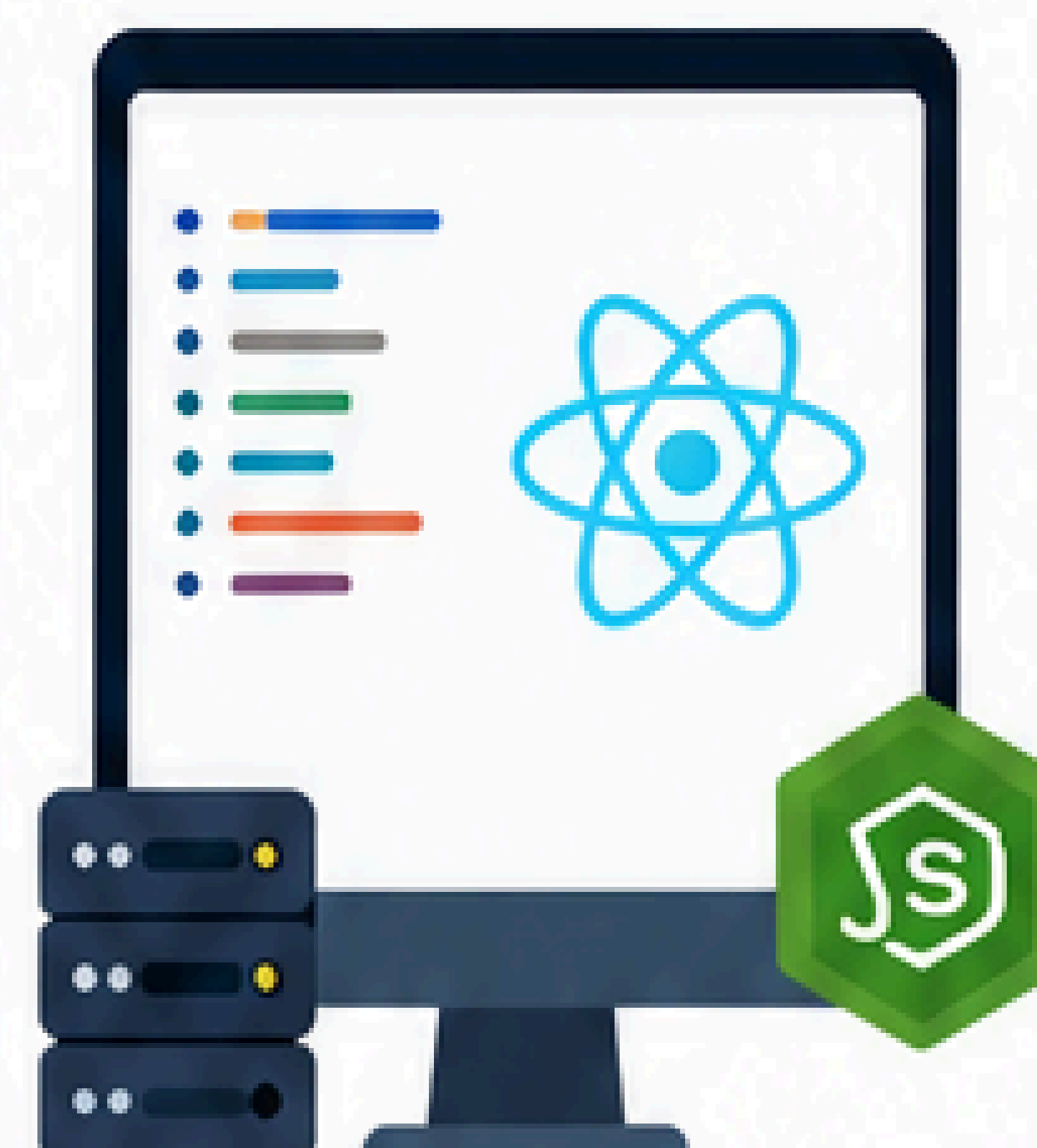
PHASE 4

PART 1 - NODE.JS & REACT BASICS



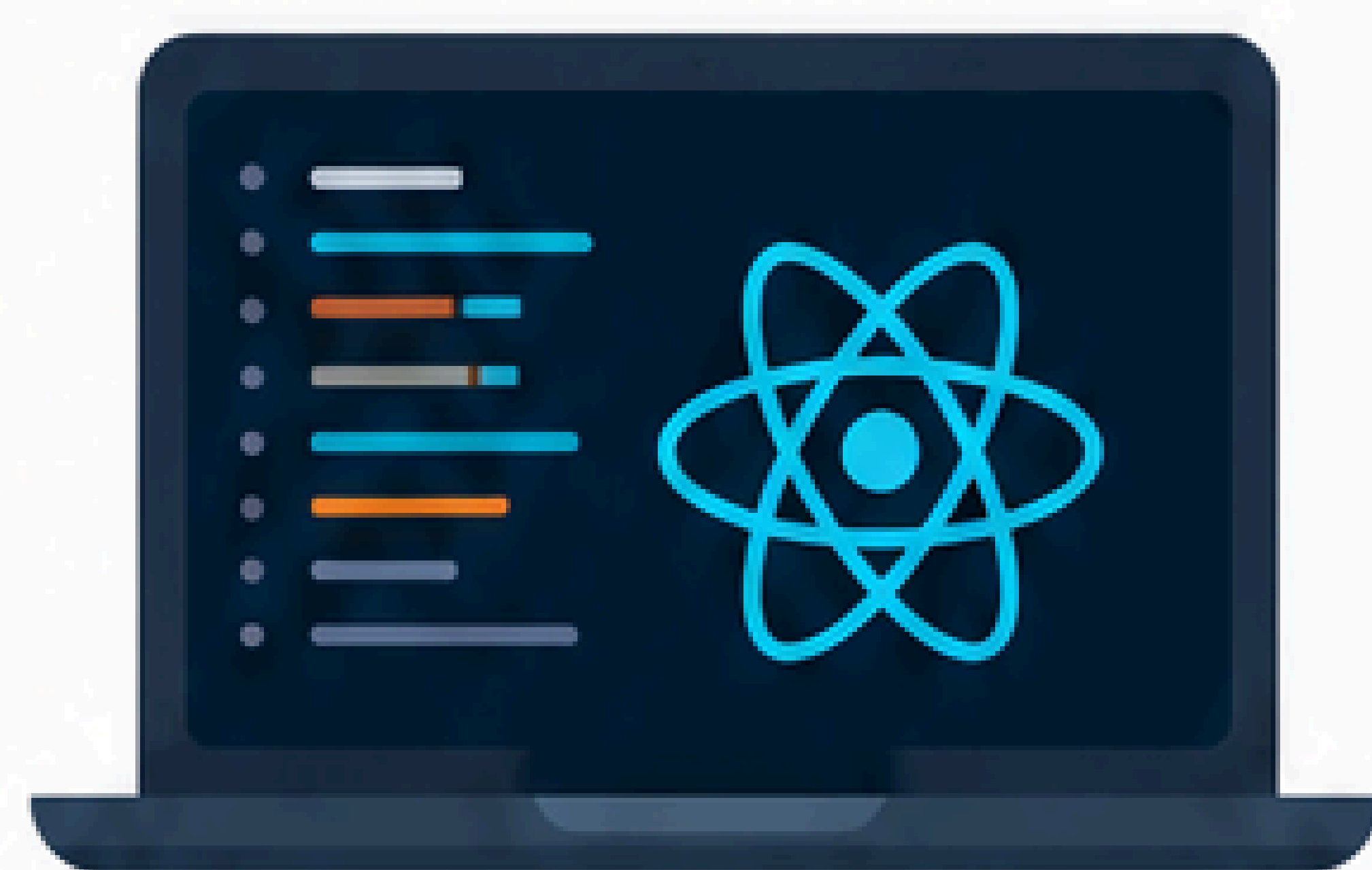
- Using nodejs and link from backend showing data in webpage
- Making component state dynamically changing.
- Passing props and understanding Children components.

PART 2 - REACT & EXPRESS BASICS



- different operations to filter data
- Creating component using reactjs and dynamically showing content using link created in express
- showing content using link created in express

PART 3 - REACT ADVANCED CONCEPTS



useState

useEffect

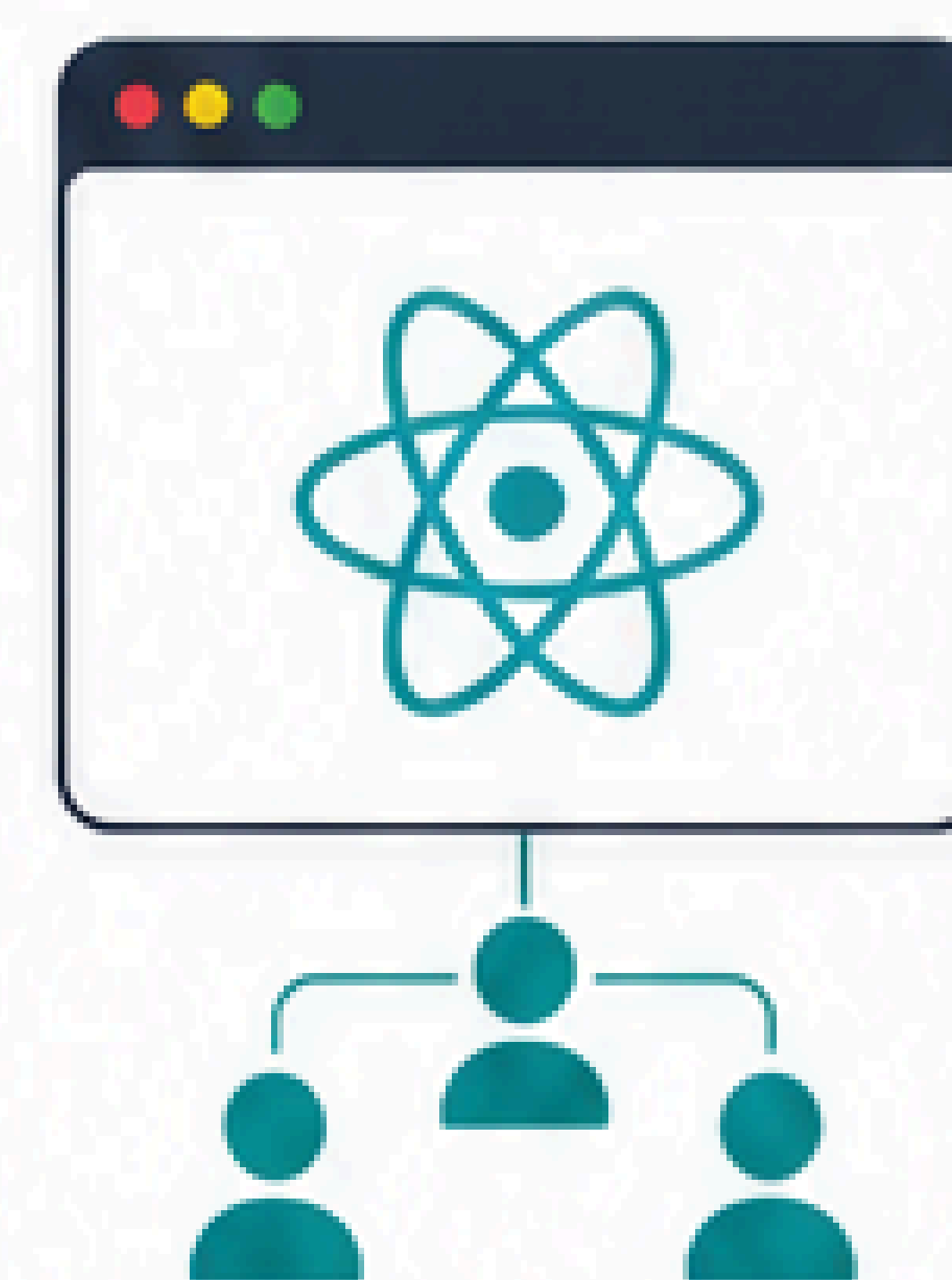
- introduction to hooks like useState, useEffect
- Introduction to api fetching
- making all the page content
- Understanding parent child relationship

PART 4 - MONGODB & DATABASE BASICS



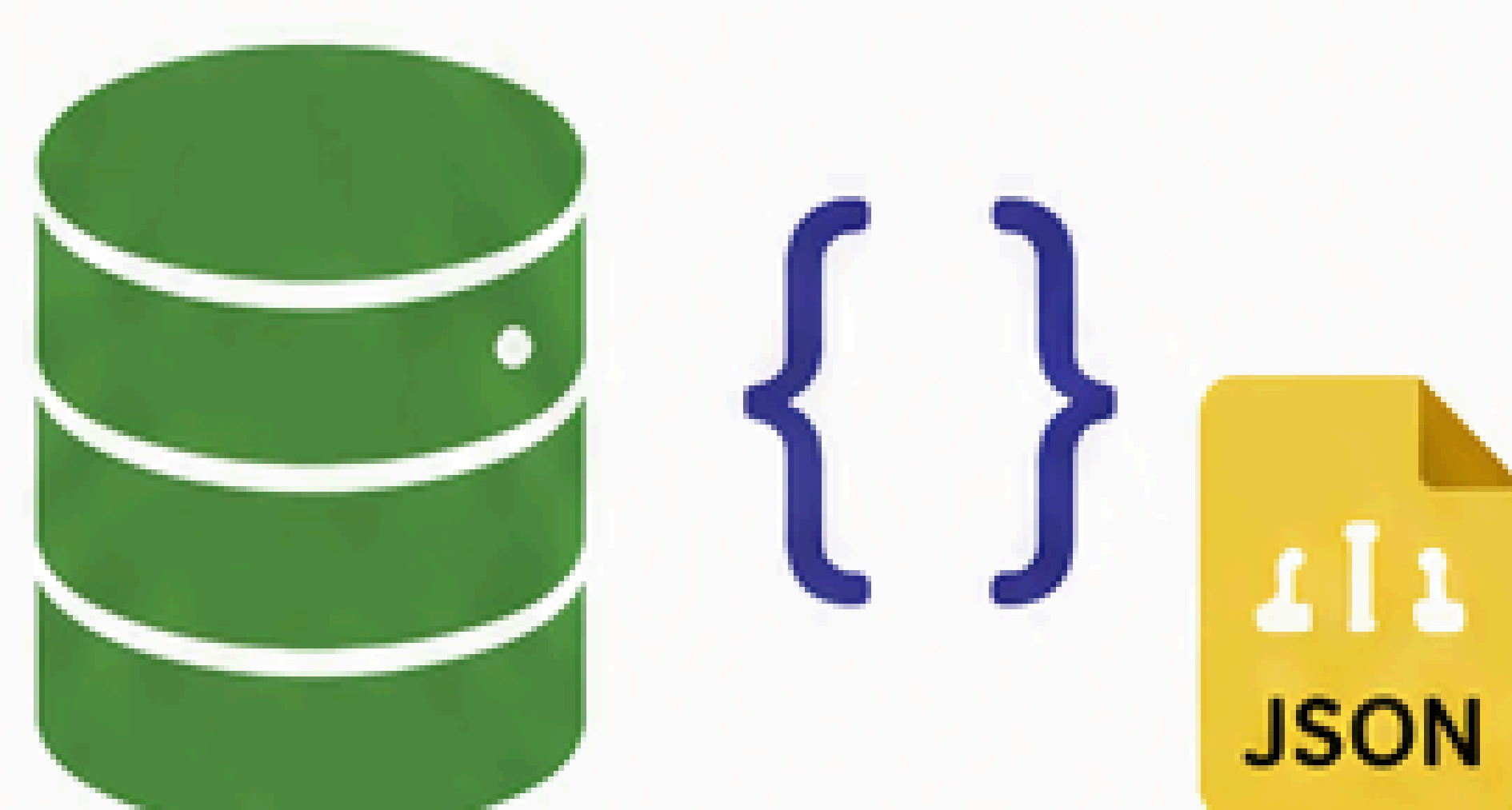
- Introduction to Full Stack
- database and difference between data structure and database
- nosql vs sql database
- why mongodb is chosen
- How to install mongodb atlas, compass, shell

PART 5 - CONTEXT API



- Introduction to Context API
- useContext, provider

PART 6 - MONGODB OPERATIONS






- How to upload json file in mongodb
- DDL commands to put data in mongodb
- DML commands basic introduction
- What is filter query and how it is implemented
- what is collection
- what is document

PHASE 5






PART 1 - CRUD OPERATIONS



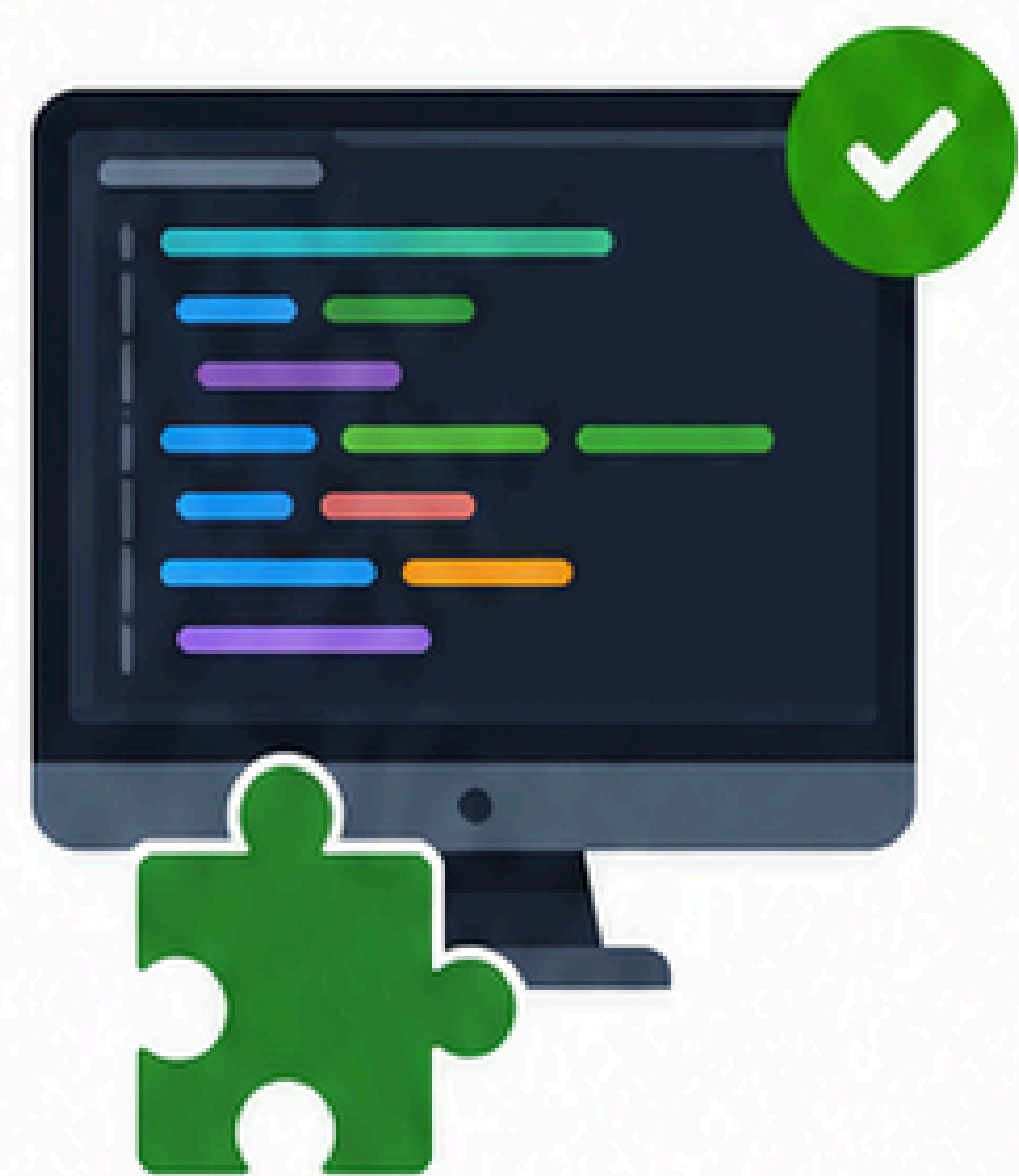
-  Creating proper folder structure to arrange data
-  updating data using put request
-  deleting data using delete request




PART 2 - NODE.JS BASICS



-  Introduction to Nodejs
-  What is backend
-  what is runtime environment
-  what is difference between node and vanilla js
-  asynchronous javascript


PART 3 - PROJECT INTEGRATION



-  Integrating the complete project
-  started applying concepts of Higher order Components
-  State Uplifting

PART 4 - MONGODB & SCHEMA DESIGNING





-  Introduction to Schema Designing
-  Introduction to create models
-  Creating multiple models

PART 5 - API TESTING & DATA FETCHING








POSTMAN



-  Adding data using post request using postman
-  adding fetching data using get url

PART 6 - ROUTING & STATE MANAGEMENT



-  Starting from login Page
-  Register Page
-  then Main Page
-  All Axios Intregation
-  Linking all the pages using browser Router
- React Redux to manage State

PHASE 7

PART 1 – API & POSTMAN BASICS



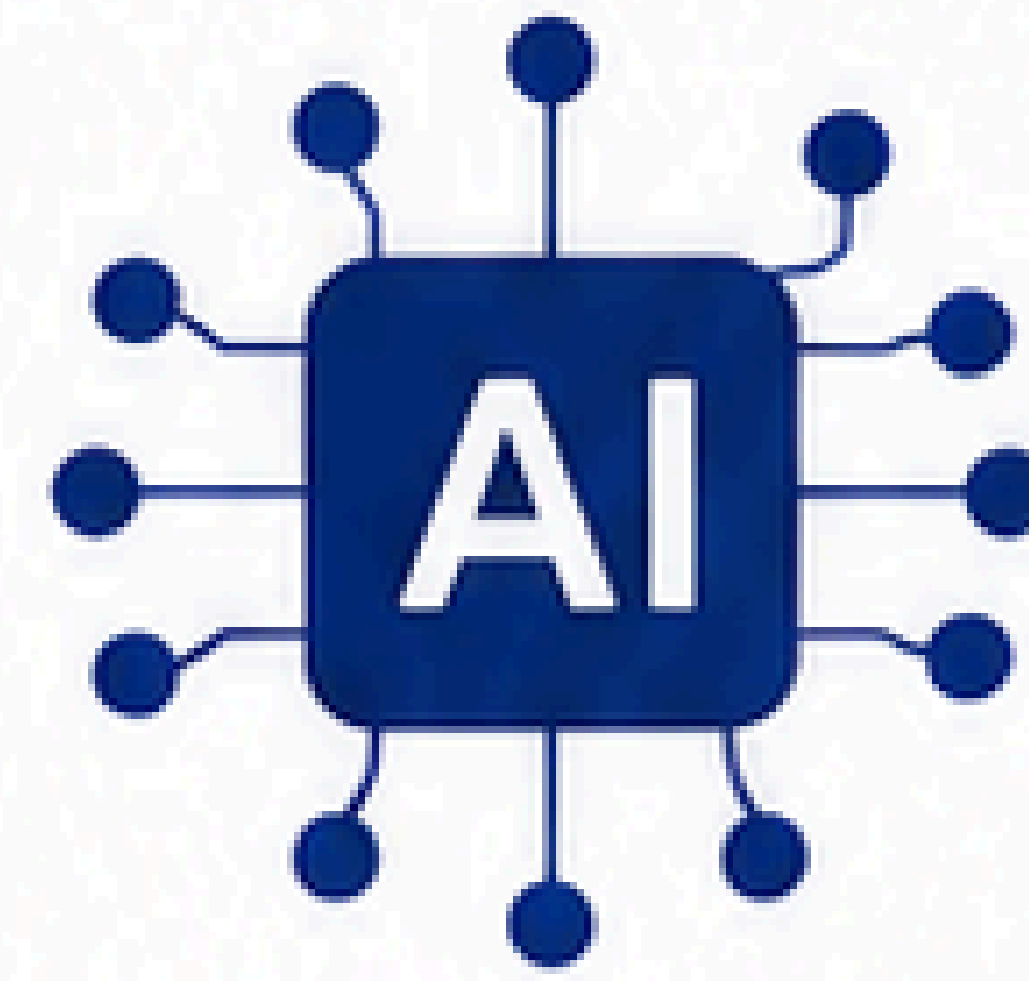
API Creating api

Testing api using postman



HTTPS what are different https methods

PART 2 – AI & GENAI PROJECTS



Token Auth AI

Chatbot

A2A

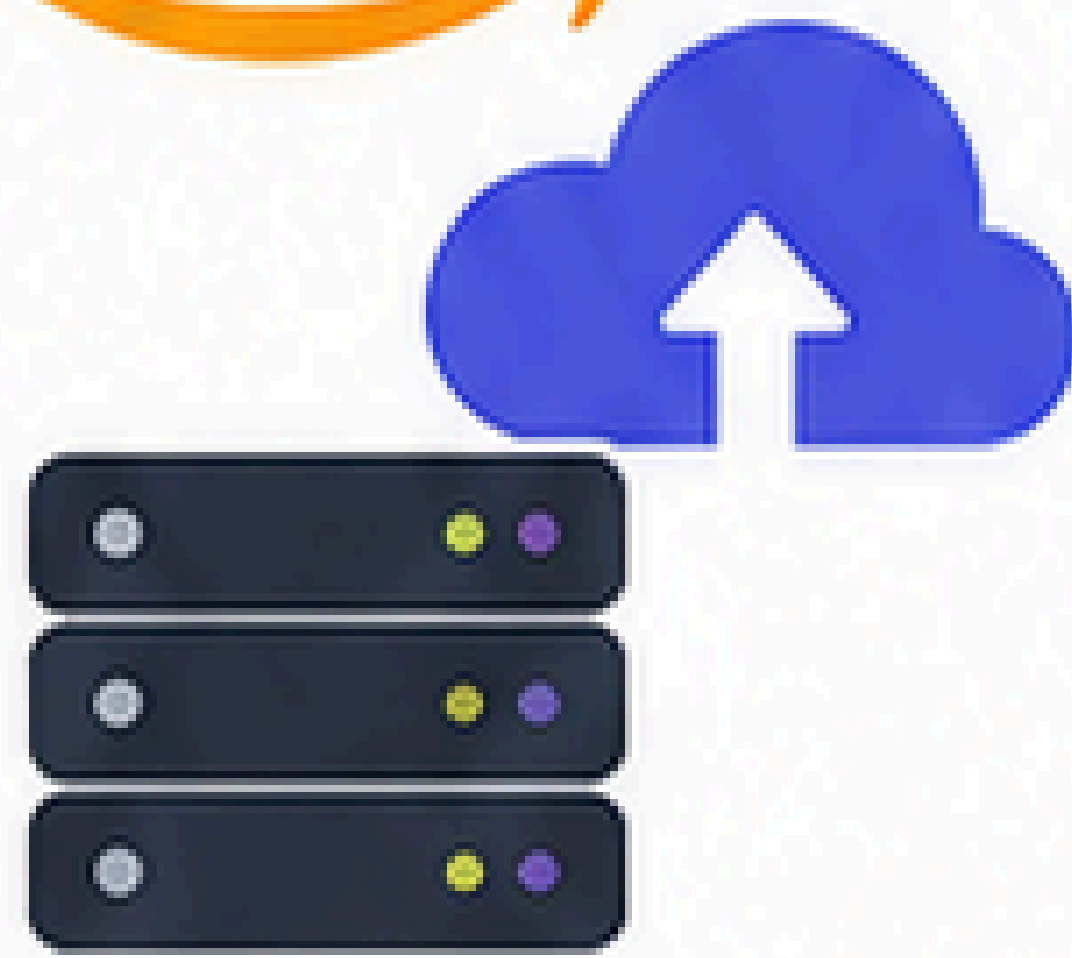
MCP

Analyse Resume Using GenAI

Dynamic Quiz Calculator using GenAI



PART 3 – CLOUD & DEPLOYMENT



Introduction to AWS

Application Deployment

PART 4 – PROJECT COMPLETION



Completing the ongoing Project and discussing the doubts

PART 5 – TYPESCRIPT



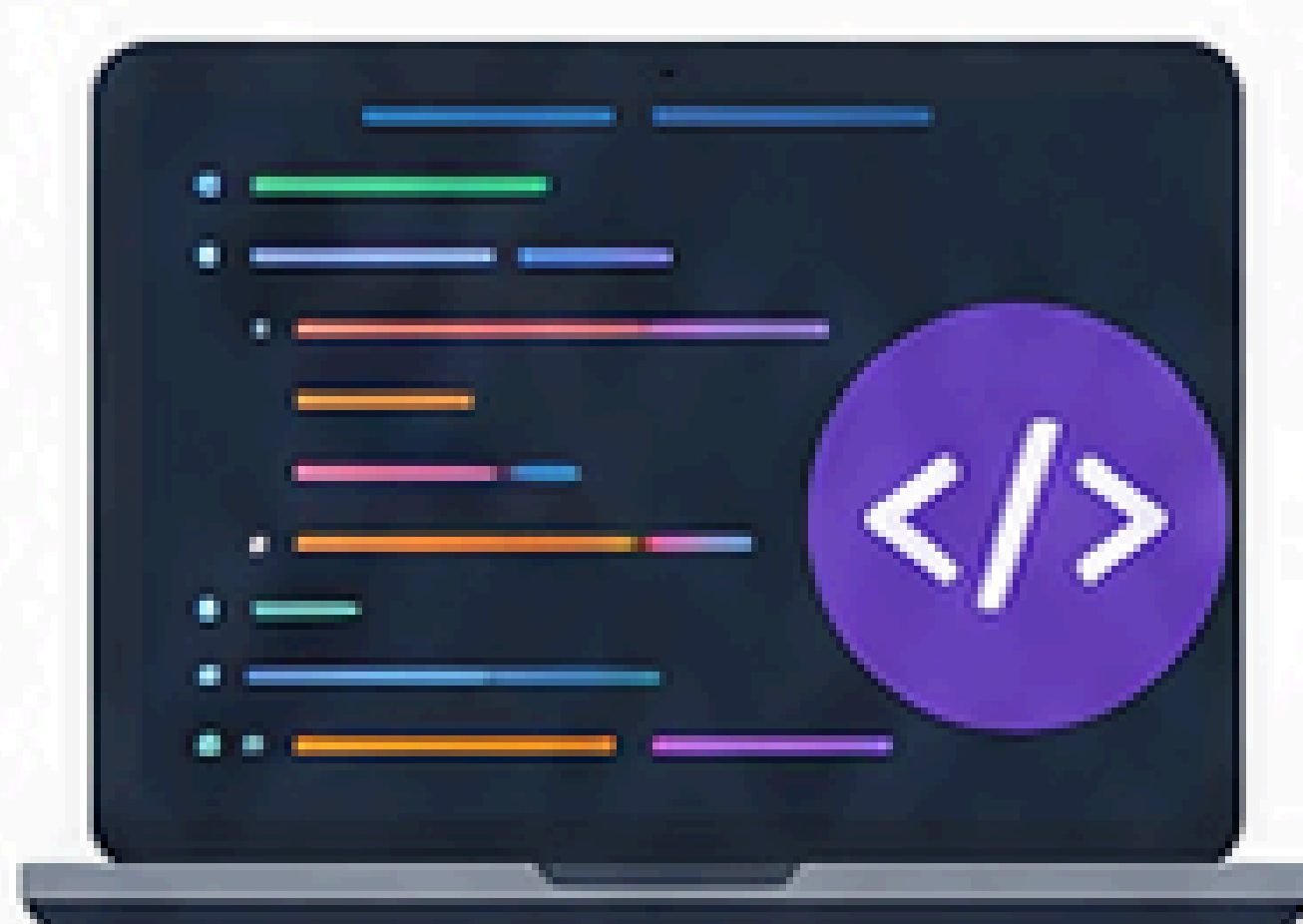
- Introduction to TypeScript
- Type System Basics
- Functions in TypeScript
- Objects and Interfaces
- Type Annotations
- Type Inference
- Arrays and Tuples
- Enums
- Generics
- Modules
- Decorators
- Mixins

PART 6 – NEXT.JS BASICS



- Introduction to Next.js
- CSR Vs SSR
- Pages & Routing
- Dynamic Routing
- Rendering Methods
- Components & Styling
- Server vs Client Side Components (use client)
- API Routes
- Data Fetching & State Management
- Redux in Next.js
- Forms, Auth, and Middleware
- App Router

PART 7 – ADVANCED TOPICS



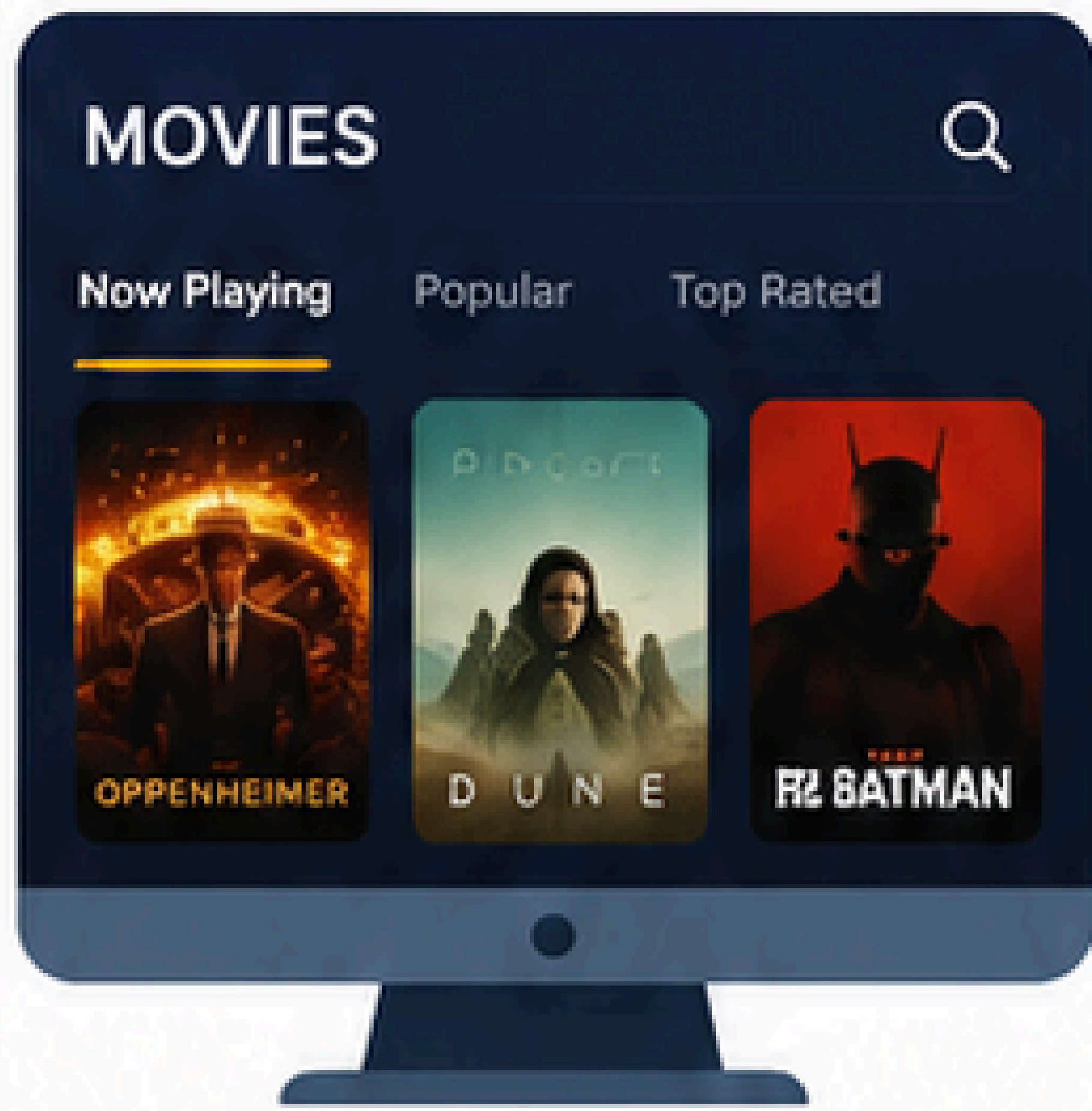
- Creating proper folder structure to arrange data
- Updating data using put request
- Deleting data using delete request

- Adding multiple routes
- Modular routing
- Nested Routes in Express.js
- Using `express.Router()` for Modular Routes
- Mounting Multiple Routes in Express

- Controllers and middlewares
- Introduction to Schema Designing
- Introduction to create models
- Creating multiple models

PHASE 8

PART 1 – MOVIE WEBSITE APP IN MERN STACK



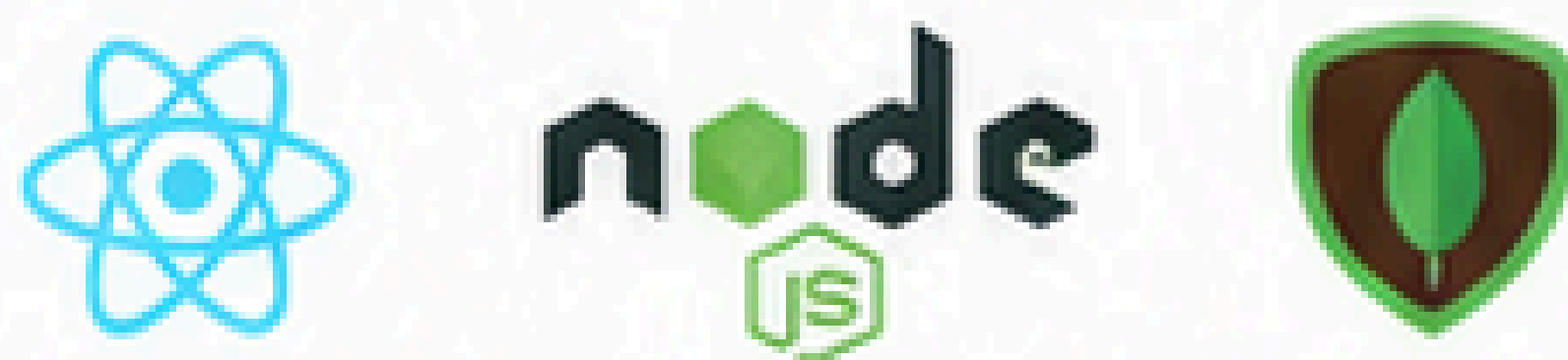
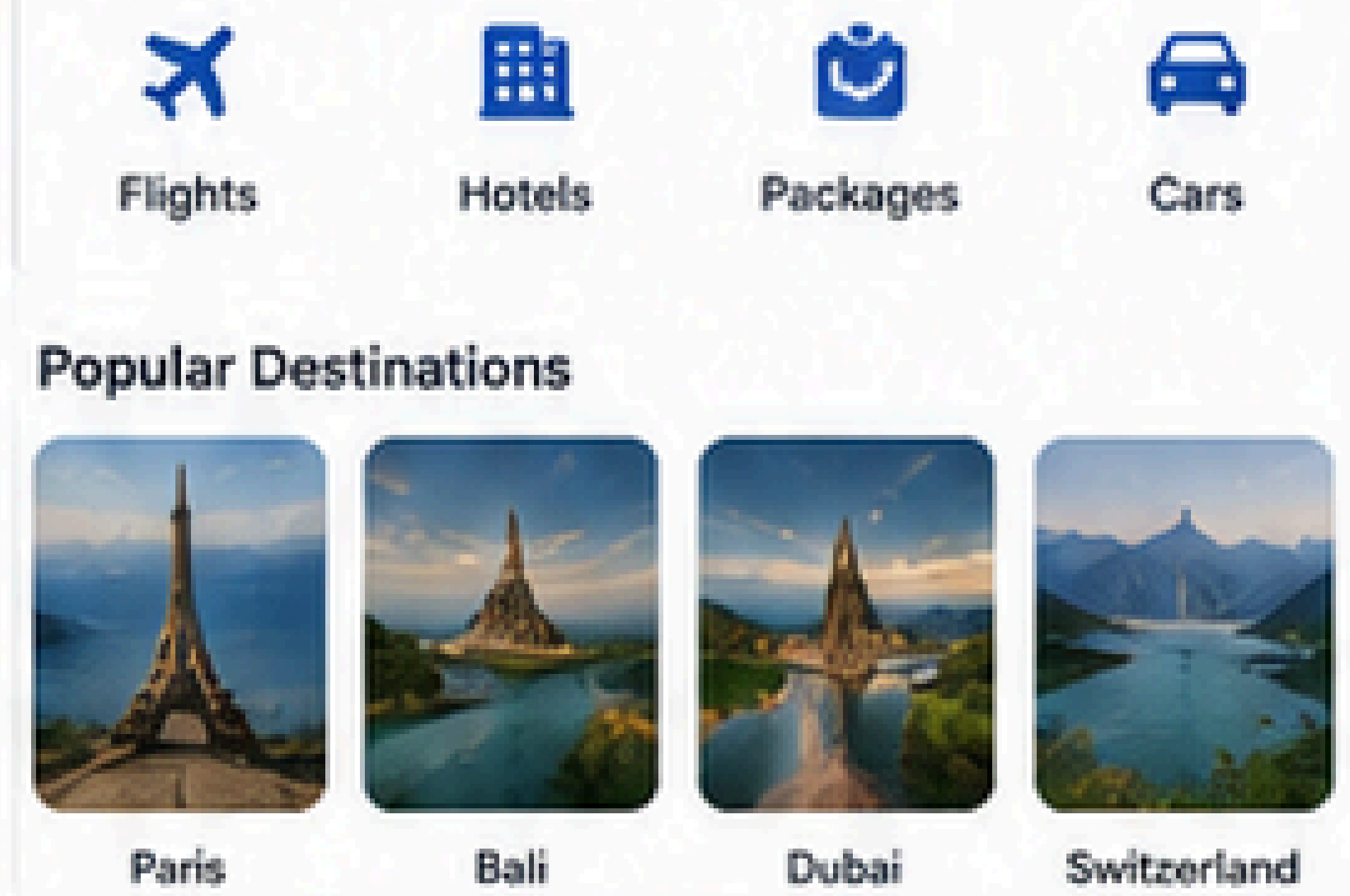
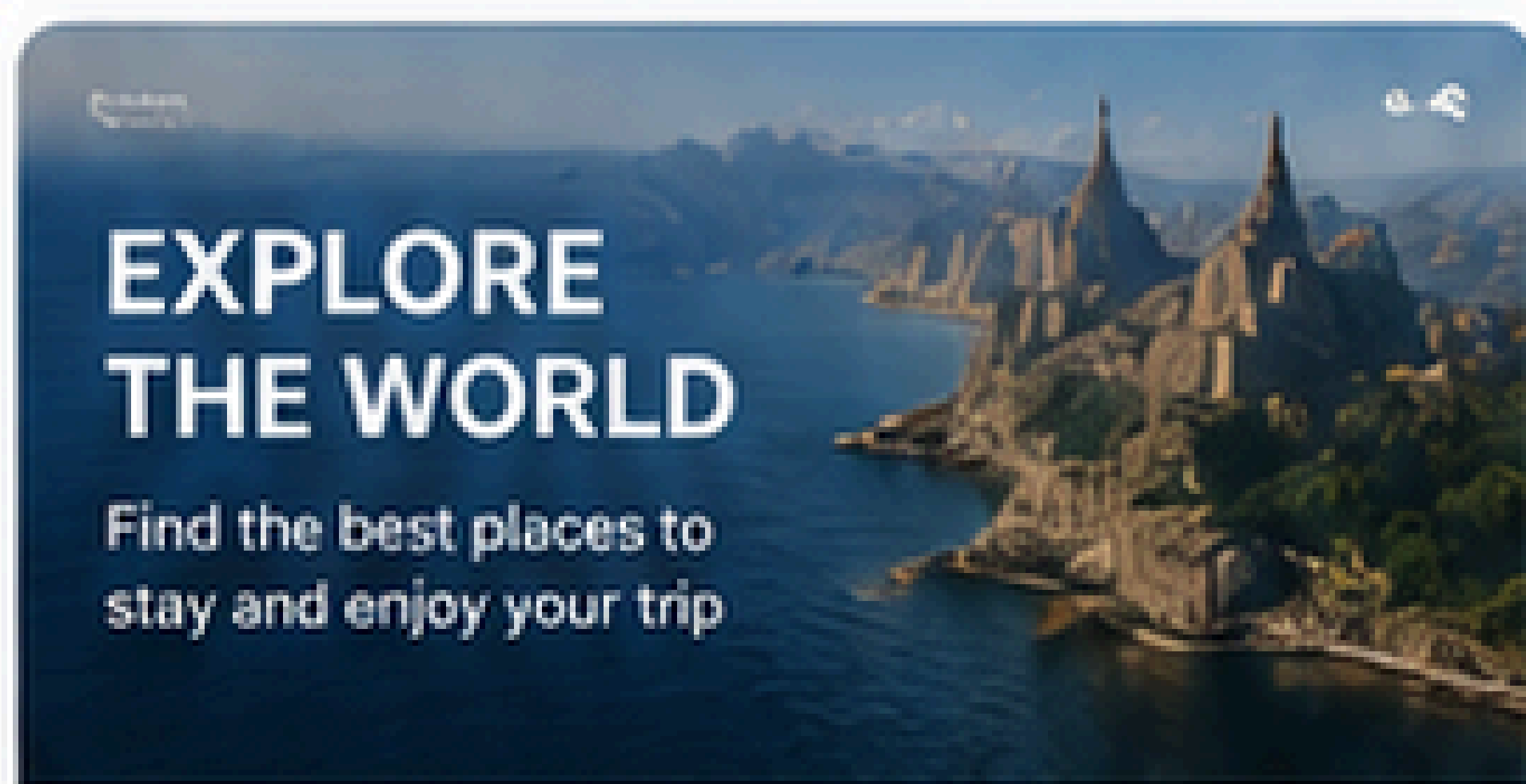
- Movie Listing & Details
- Search & Filter Movies
- Movie Categories & Genres
- Authentication (Login/Signup)
- Add to Watchlist & Favorites
- Reviews & Ratings
- Admin Panel (Add/Update/Delete Movies)

PART 2 – PERSONAL FINANCE MANAGER WITH PREDICTIVE ANALYTICS



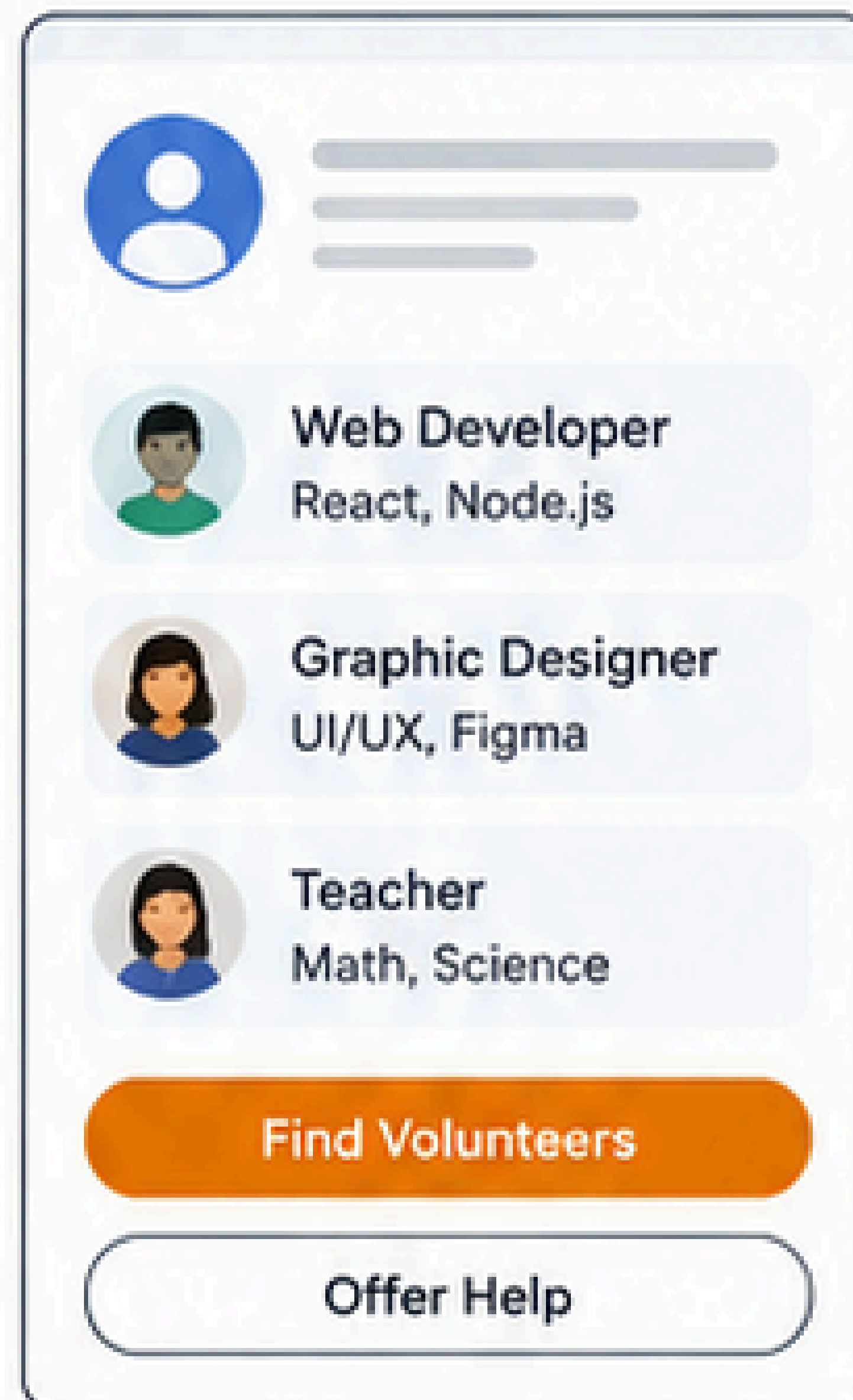
- User Authentication
- Income & Expense Management
- Budget Planning & Tracking
- Expense Analytics (Charts & Graphs)
- Predictive Analytics (Future Expense Prediction)
- Reports & Insights
- Secure Data Management

PART 3 – TRAVELING WEBSITE IN MERN STACK



- Destinations Listing & Details
- Search & Filter Places
- Tour Packages & Itineraries
- User Authentication (Login/Signup)
- Booking System
- Reviews & Ratings
- Payment Integration
- Admin Panel (Manage Listings, Bookings, Users)

PART 4 – SKILL-BASED VOLUNTEER MATCHING PLATFORM



- User Authentication (Volunteer/Seeker)
- Skill Profiles & Matching
- Post Opportunities & Requests
- Real-time Chat & Notifications
- Reviews & Feedback System
- Admin Panel (Manage Users, Reports)

PART 5 – REST API SYSTEMS



- Client-Admin API
- Multi-vendor Application API
- Role based API
- Admin Super-Admin API Controlling
- Conditional API
- Multiserver API

PART 6 – GEN-AI BASED API (IF EXTRA TIME IS THERE)



- Gen-AI Content Generation API
- Gen-AI Chatbot API
- Image Generation API
- Text Summarization API
- Code Generation API
- Smart Search API

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Channel**

<https://t.me/REGexSoftware>



**YouTube
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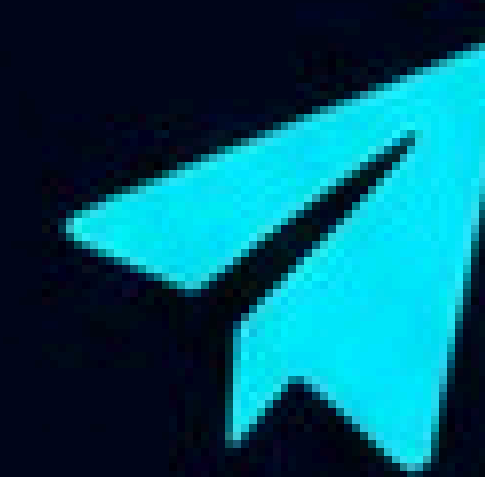
**Instagram
Profile**

[https://www.instagram.com/
regexsoftware/?hl=en](https://www.instagram.com/regexsoftware/?hl=en)



**LinkedIn
Company Page**

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posts/?feedView=all](https://www.linkedin.com/company/regexsoftware/posts/?feedView=all)



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