

# Front-End Web Development



## With AI Tools & Practical Projects

### Introduction to Web Development

- Overview of the Internet and Web Technologies
- Frontend vs Backend Development
- Role of Frontend Developers in modern applications
- Understanding browsers and rendering

### Development Environment Setup

- Installing VS Code
- Browser Developer Tools
- Project folder structure

### Python Syntax Basics

- Python structure & indentation
- PComments and documentation
- PInput and output functions

### Online Development Platforms

- StackBlitz AI
- CodeSandbox AI
- Replit AI

### AI Tools for Frontend Developers

Tools: ChatGPT, GitHub Copilot, Cursor AI

Using AI for:

- Code generation
- Debugging
- UI suggestions
- Documentation

AI Workflow for Frontend Development

Design → Code → Test → Optimize using AI tools

### HTML Introduction

Tools: VS Code, ChatGPT, StackBlitz AI

- HTML document structure
- HTML elements and attributes
- Headings and paragraphs

### Text Formatting and Links

- Text formatting elements
- Links and navigation
- Images and media

### Page Structure

- Semantic HTML
- HTML layout structure
- Div, section, article, header and footer

### Tables and Lists

- Tables and table attributes
- Ordered and unordered lists

### HTML Forms

- Form structure
- Input types
- Form validation

### CSS Basics

Tools: ChatGPT, Figma AI, Canva AI

- CSS syntax
- Selectors and comments
- Linking CSS to HTML

### Colors and Backgrounds

- Text colors
  - Background images
  - Gradients
- Using Canva AI and Figma AI for UI color selection

### Box Model

- Margins
- Padding
- Borders
- Content area

### Layout Techniques

- Display property
- Position property
- Float and inline-block

### Modern CSS Design

Tools: VS Code, ChatGPT, StackBlitz AI

### Flexbox

- Flex containers
- Flex direction
- Justify content
- Align items

### CSS Grid

- Grid layout system
- Grid areas
- Grid columns and rows

### Advanced CSS

- Transitions
- Animations
- Shadows
- Opacity

### Responsive Design

- Media queries
  - Mobile-first design
- Using Relume AI and Galileo AI to generate UI layouts

### Bootstrap 5 Framework

Tools: Bootstrap, ChatGPT, StackBlitz AI

### Bootstrap Basics

- Bootstrap introduction
- Bootstrap grid system
- Containers and breakpoints

### Bootstrap Components

- Buttons
- Cards
- Navbar
- Alerts

### Advanced Bootstrap Components

- Modals
- Carousel
- Dropdowns
- Offcanvas

## Bootstrap Forms

- Form layout
- Validation
- Input groups

## JavaScript Fundamentals

Tools: ChatGPT, Cursor AI, CodeSandbox AI

## JavaScript Basics

- JavaScript syntax
- Variables and data types
- Operators

## Control Structures

- Conditional statements
- Loops
- Switch statements

## Functions

- Function declarations
- Arrow functions
- Scope and closures

## DOM Manipulation

Tools: ChatGPT, Cursor AI

- Function declarations
- Arrow functions
- Scope and closures

## DOM Basics

- DOM structure
- Selecting elements

## DOM Events

- Click events
- Keyboard events
- Event listeners

## Dynamic Webpages

- Changing HTML content
- Form validation
- Interactive UI

## APIs, AJAX and JSON

Tools: ChatGPT, CodeSandbox AI

## Web APIs

- Fetch API
- Geolocation API

## AJAX

- Making asynchronous requests
- Handling responses

## JSON

- JSON structure
- JSON parse and stringify

## React.js Fundamentals

Tools: React, ChatGPT, Cursor AI, V0.dev

## React Basics

- Introduction to React
- Setting up React project
- Components and JSX

## Props and State

- Managing component data
- Passing data between components

## React Hooks

- useState
  - useEffect
  - useContext
- Using **V0.dev** to generate React UI components

## Advanced React Development

Tools: V0.dev, Locofy AI

## Advanced Hooks

- useReducer
- useCallbacK
- useRef

## Performance Optimization

- Memo
- Code splitting
- Lazy loading

## React Forms

- Handling form inputs
  - Form validation
- Using Locofy AI to convert design to React components

## AI Tools for Frontend Developers

Tools used during the course

## Coding Assistants

- ChatGPT
- GitHub Copilot
- Cursor AI

## Design Tools

- Figma AI
- Galileo AI
- Canva AI
- Relume AI
- Uizard AI

## Development Tools

- StackBlitz AI
- CodeSandbox AI
- Replit AI
- V0.dev
- Locofy AI

## FINAL MILESTONE

### Career Preparation

- Portfolio website creation
- GitHub project repository
- Frontend interview preparation

### Final Evaluation

- Final project presentation
- Code review