

Frontend Development Curriculum

1. Introduction to Frontend Development

- What is Frontend Development?
- Overview of Frontend Technologies
- Tools and Workflows

2. HTML (HyperText Markup Language)

- Basic HTML Structure
- Elements and Attributes
- Forms and Input Types
- Semantic HTML

3. CSS (Cascading Style Sheets)

- Basic CSS Syntax
- Selectors and Specificity
- Box Model
- Positioning and Flexbox
- Grid Layout
- Responsive Design and Media Queries
- CSS Variables and Custom Properties
- Transitions and Animations

4. JavaScript (JS)

- Basics of JavaScript
 - Syntax and Operators
 - Data Types and Variables
 - Functions and Scope
 - Control Flow and Loops
- DOM Manipulation
- Event Handling
- Asynchronous JavaScript
 - Promises and Async/Await
- JavaScript ES6+ Features
- Error Handling

5. Version Control with Git

- Introduction to Git
- Basic Commands (clone, commit, push, pull)
- Branching and Merging
- Collaborating with GitHub

6. Build Tools and Package Managers

- Introduction to NPM/Yarn
- Understanding Package.json
- Webpack and Babel
- Task Runners (Gulp, Grunt)

7. Frontend Frameworks and Libraries

- Introduction to React
 - Components and Props
 - State and Lifecycle
 - React Hooks
- Introduction to Vue.js
 - Vue Instance and Directives
 - Vue Components and Vuex
- Introduction to Angular
 - Components and Modules
 - Data Binding and Directives

8. APIs and AJAX

- Understanding REST APIs
- Making HTTP Requests
- Handling API Responses
- CRUD Operations

9. Testing

- Introduction to Frontend Testing
- Unit Testing with Jest
- Integration Testing
- End-to-End Testing with Cypress

10. Performance Optimization

- Minification and Bundling
- Lazy Loading and Code Splitting
- Optimizing Images and Assets

11. Accessibility and Best Practices

- Introduction to Web Accessibility
- ARIA Roles and Attributes
- Best Practices for Accessibility

12. Deployment

- Static Site Generators
- Deployment Platforms (Netlify, Vercel, GitHub Pages)
- CI/CD Pipelines

13. Projects and Practice

- Building Responsive Websites
- Creating Single Page Applications (SPAs)
- Developing a Portfolio Website

14. Career and Next Steps

- Building a Portfolio
- Preparing for Technical Interviews
- Exploring Advanced Topics and Specializations