MERN STACK DEVELOPMENT

1. <u>**Fundamental Programming Skills:**</u>
   - **HTML and CSS:**
     - Learn the basics of HTML and CSS.
     - Understand responsive design and CSS frameworks (e.g., Tailwind).
   - **JavaScript:**
     - Master the fundamentals of JavaScript, including ES 6 features.
     - Learn about asynchronous programming and promises.

2. <u>**Front-End Development:**</u>
   - **React.js:**
     - Understand the core concept of React (Components, props, state).
     - Learn about React Router for navigation.
     - State Management with Context API or Redux.
     - Hooks and their usage (useState, useEffect, etc).
   - **Modern JavaScript Libraries:**
     - Explore and understand modern libraries like Axios for HTTP requests.
   - **Responsive Design:**
     - Learn CSS media queries for responsive design.
     - Understand Flexbox and Grid layout.
   - **Version Control:**
     - Learn the basics of Git and Github.

3. <u>**Back-End Development:**</u>
   - **Node.js:**
     - Understand the core concept of Node.js.
     - Learn about the CommonJs module system.
   - **Express.js:**
     - Build RESTful APIs using Express.js.
     - Implement middleware for authentication and error handling
   - **MangoDB:**
     - Learn basics of NoSQL databases and MangoDB.
     - CRUD operations with MangoDB and Mongoose ODM.
   - **Authentication and Authorization:**
     - Implement user authentication using JWT (JSON Web Tokens).
     - Understand password hashing and security best practices.

4. **Advance Topics:**
    - **Testing:**
        o Understand the importance of testing.
        o Write unit test cases for both front-end and back-end code.
    - **Deployment:**
        o Deploy your MERN application using platforms like Heroku or Netlify.

5. **Practical Projects:**
    - **Build Real-World Applications:**
        o Work on projects that cover different aspects of MERN stack development.
        o Implement features like user authentication, data manipulation, and third-party API integration.
    - **Portfolio:**
        o Create a personal portfolio showcasing your projects and skills.

6. **Additional Skills:**
    - **DevOps Basics:**
        o Understand basics of DevOps concepts.
        o Learn about containerization (Docker).
    - **CI/CD:**
        o Explore continuous integration and continuous deployment.

7. **Soft Skills:**
    - **Communication Skills:**
        o Improve your ability to communicate technical concepts.
        o Collaborate with other developers on projects.

8. **Continuous Learning:**
    - **Stay Updated:**
        o Regularly follow updates in the MERN stack and web development in general.
        o Engage with the developer community through forums.