## 1. Prerequisites

- HTML5, CSS3, JavaScript (ES6+)
- DOM manipulation
- Fetch API / Promises
- Basic Git & GitHub
- NPM/Yarn, CLI (optional)

#### 2. Core React Fundamentals

- Create a React App (CRA or Vite)
- JSX, Components, Props, State
- Event Handling, Conditional Rendering
- Lists & Keys, Basic Styling
- Hooks: useState, useEffect, useRef, useContext

#### 3. Project Structuring & Code Organization

- Folder structure
- Absolute Imports
- Code splitting, Lazy loading
- Reusable components

#### 4. Routing

- react-router-dom
- Routes, Links, Nested Routes
- Dynamic Params, useNavigate, useParams

#### 5. State Management

- useState, useReducer (local)
- useContext, Redux Toolkit

- Zustand, Recoil, Jotai (optional)

### 6. API Integration

- fetch, axios
- useEffect
- React Query, SWR for data fetching

### 7. Styling Options

- CSS Modules
- Tailwind CSS
- Styled Components
- SCSS/Sass

### 8. Form Handling & Validation

- Controlled forms with useState
- React Hook Form + Yup/Zod
- Formik

### 9. Testing

- Jest + React Testing Library
- Cypress/Playwright
- Snapshot Testing

### 10. Performance Optimization

- React.memo, useMemo, useCallback
- Code Splitting
- Virtualization

# 11. Advanced Patterns

- Custom Hooks
- Compound Components
- Render Props
- HOCs

### 12. Developer Tools

- React DevTools
- VS Code Extensions
- ESLint, Prettier
- Husky + lint-staged

# 13. Building & Deployment

- npm run build
- Vercel, Netlify, GitHub Pages, Firebase

### 14. Bonus Topics

- SSR: Next.js
- Auth: Firebase, Auth0, NextAuth
- PWA
- i18n, WebSocket, localStorage

#### 15. Practice & Projects

- Todo App
- Weather App
- Blog
- E-commerce
- Dashboard

- Full-stack project