HTML Syllabus

1. Introduction of HTML
2. HTML Building blocks
    i. Tags
    ii. Attributes
    iii. Elements
3. HTML Formatting
4. Heading tags
    i. H1-h6 tags
5. HTML Paragraph
6. HTML Phrase Tags
7. HTML Anchor
8. HTML Image
9. HTML Table
10. HTML Lists
    i. Ordered List
    ii. Unordered List
11. HTML Form
    i. Attributes used for form tag
    ii. Form elements (input tag, textarea..)
12. HTML File Path
13. Head tags
    i. Link tag
    ii. Meta tag
    iii. Base tag
    iv. Script tag
    v. Style tag
    vi. Title tag
14. HTML Comments

15. HTML Iframes
16. HTML Layout
    i. Header tag
    ii. Section tag
    iii. Aside tag
    iv. Article tag
    v. Details , summary tag
    vi. Footer tag
17. HTML Layout Techniques
18. `Computercode tags

19. HTML Entities
20. HTML Symbols
21. HTML Charset
22. Audio, Video
23. Project
24. Drag and Drop
25. Encoding URL
26. Handling of multiple file upload using multiple attribute
27. HTML Canvas
28. Geolocation API
29. Web Storage

CSS Syllabus

1. HTML with CSS
2. HTML Classes
3. HTML Id
4. CSS selectors
5. Creating Navigation Bars
6. CSS Image Sprites and Gradients
7. Applying animations, transitions to HTML elements
8. Creating 2D and 3D transformations
9. Media Query

Bootstrap Syllabus

1. Bootstrap introduction
2. Bootstrap features like fixed dropdown menu, carousel, text and image grids, custom thumbnails, bootstrap modal
3. Bootstrap Scroll Spy, Including jQuery in HTML pages

Javascript Syllabus

4. JavaScript introduction including DOM
5. JS Operators
6. JS Array
7. JS Loops, Statements, Switch Case
8. JS Functions
9. JS Functions with Parameters
10. JS Event handlers
11. JS Event Listeners
12. Date () Math()
13. Validations

14. Project
15. Strict Mode
16. Cookie
17. Event bubling
18. Closures
19. Prototype
20. Promises
21. Async/Await

JQuery Syllabus

1. Jquery Basics
    i. Introduction
    ii. Download Jquery
    iii. Syntax
    iv. Selectors
    v. Methods
    vi. Events
2. Jquery Effects
    i. Show/hide
    ii. Fade
    iii. Slide
    iv. Animation
    v. Stop
    vi. Chaining
    vii. Callback
    viii. Insert Elements
3. Jquery Remove
    i. empty()
    ii. remove()
    iii. unwrap()
4. Jquery Dimensions
    i. innerWidth()
    ii. innerHeight()
5. Jquery Traversing
    i. ancestors
    ii. descendants
    iii. siblings
    iv. filtering
6. Creating a Countdown timer using jQuery timer API(Task)
7. jQuery widgets

i. accordion widgets
ii. tooltip widgets
iii. tabs widgets
iv. menu widgets

8. Using jQuery UI components e.g. Date picker into your HTML pages
9. jQuery Mobile
    i. CSS Framework
    ii. Mobile Events
    iii. Mobile widgets
10. Jquery Ajax
    i. ajax()
    ii. load()
    iii. get()
    iv. post()
11. Project

React Syllabus

1) Environment Setup
    i. Installation of NodeJs and NPM
    ii. Installation of VSCode
    iii. Installation of React
    iv. Installation of React plugins in IDE
    v. Create React App
    vi. Create React Component
    i. React Basics
    ii. Building Blocks of Web ApplicationDevelopment
    iii. Single-page and Multi-page Applications
    iv. ECMAScript
    v. Difference between ES5 andES6
    vi. React DOM(Virtual DOM)
    vii. React Component
        a. Class Component
        b. Function Component
    viii. Component Lifecycle
    ix. State
    x. Props
        a. Props with Class based Component
        b. Props with Function based Component
2) JSX

    i. What is JSX?
    ii. Why use JSX?
    iii. Rules of JSX implementation
    iv. Components with and without JSX(React.createElement)
3) React Developer Tools
4) Events
    i. Simple Events
    ii. Child events
    iii. Custom Events
    iv. Event Handling
5) Form
    i. Forms Validation
6) Router
    i. Install React Router
    ii. Create Components
    iii. Add a router
    iv. Navigation usingLinks
    v. 404 page (Not foundPage)
    vi. URLParameters
    vii. Nested Routes
    viii. Implementing styles usingNavLink
    ix. Application ProgrammingInterface
    x. Build a REST API usingjson-server
    xi. API consumption in React application using Fetch method
7) List & Keys
8) Immutability
    i. Array immutability
    ii. Object immutability
9) Closures
10) Lazy loading(Code splitting/Data fetching)
11) Lifting state up
12) Hooks
    i. Basichooks
    ii. useState()hook
    iii. How to write useState() hook when state variable is an array of objects
    iv. useEffect()hook
    v. Fetch API data using useEffect()hook
    vi. useContext()hook
    vii. Rules to write React hooks

viii. Additional hooks
ix. Custom hooks

13) Introduction to Bootstrap
14) HOC
15) Context API
16) React Portal
17) React Redux
18) Fetch Data using GraphQL
    i. What isGraphQL?
    ii. Cons of RestAPI
    iii. Pros ofGraphQL
    iv. Frontend backend communication usingGraphQL
    v. Type system
    vi. GraphQLdatatypes
    vii. Modifiers
    viii. Schemas
    ix. GraphiQLtool
    x. Expressframework
    xi. NPM libraries to build server side ofGraphQL
    xii. Build a GraphQL API
    xiii. Apolloclient
    xiv. NPM libraries to build client side ofGraphQL
    xv. How to setup Apolloclient
19) Project
20) React Application Testing and Deployment
    i. Define Jest
    ii. Setup Testingenvironment
    iii. Add Snapshottesting
    iv. Integrate TestReducers
    v. Create TestComponents
    vi. Push Application on Git
    vii. Deploy App onNginx
    viii. Create Docker for ReactApplication

Node.js Syllabus

1. Node.js Introduction
    i. What is Node.js?
    ii. Why Node.js?

iii. Installing NodeJS
iv. Node in-built packages (buffer, fs, http, os, path, util,url)
v. Node.js Modules
    a. Local Modules
    b. Export Modules
    c.
vi. Import your ownPackage
vii. Node Package Manager(NPM)
viii. Local and GlobalPackages
ix. Push code to GitHub

2. Node.js Console and Basics
3. Node.js Http Server
    i. JSON Data
    ii. Http Server and Client
4. Node.js File System
    i. Get Input fromUsers
    ii. Pass Multiple Arguments withYargs
    iii. File SystemModule
    iv. Operations associated with File SystemModule
5. Node.js Events
    i. Sending and receiving events with EventEmitters
6. ExpressJS and Web Application using ExpressJS
    i. ExpressFramework
    ii. Run a Web Server using ExpressFramework
    iii. Routes
7. Asynchronous Programming
    i. Call Stack
    ii. Callbacks, Callback Queue and EventLoop
    iii. CallbackAbstraction
    iv. CallbackChaining
    v. Promises
    vi. Promise Chaining
    vii. RequestPackage
    viii. Customizing HTTP Requests
    ix. Error handing with appropriate HTTPcodes
    x. Introduction to template engine(EJS)
8. Node.js with MongoDB
    i. Introduction to NoSQL Databases andMongoDB
    ii. Installation of MongoDB onWindows
    iii. Installation of Database GUIViewer
    iv. InsertingDocuments
    v. Querying, Updating and Deleting Documents

vi. Connect MongoDB and Node.jsApplication
vii. ExploringSendGrid
viii. Sending emails through Node.js application usingSendGrid

9. Node.js with SQL Server
10. REST APIs and GraphQL
    i. RESTAPI
    ii. REST API in Express
    iii. Postman
    iv. MongoDB DriverAPI
    v. ExpressRouter
    vi. Mongoose API
    vii. GraphQL
    viii. GraphQLPlayground
11. Building Node.js Applications using ES6
    i. ES6 variables
    ii. Functions withES6
    iii. Import and ExportwithES6
    iv. Async/Await
    v. Introduction toBabel
    vi. Rest API withES6
    vii. Browsing HTTP Requests withFetch
    viii. Processing QueryString
    ix. Creating API usingES6
    x. Transpilation
    xi. Building DashboardAPI
    xii. Creating dashboard UI withEJS
    xiii. ES6 Aside: Default FunctionParameters
    xiv. Data Validation andSanitization
12. User Authentication and Application
    i. Authentication
    ii. Types ofAuthentication
    iii. Session VsTokens
    iv. JSON WebTokens
    v. Bcrypt
    vi. Node-localstorage
13. Dynamic Client-Server Interaction using Socket.IO
    i. WebSockets
    ii. WebSockets
    iii. Socket.io
    iv. BroadcastingEvents
    v. Sharing YourLocation
    vi. EventAcknowledgements
    vii. Form and Button States

viii. RenderingMessages
ix. Working with Time and Timestamps for determining Location ofMessages
x. Storing Users, Rendering User List, Tracking Users Joining andLeaving
xi. Deploying the ChatApplication
xii. Redis - Building API withRedis

14. Testing Node.js
    i. Writing Tests andAssertions
    ii. Testing AsynchronousCode
    iii. Testing an ExpressApplication
    iv. Setup andTeardown
    v. Testing withAuthentication
    vi. Advanced Assertions
    vii. MockingLibraries
    viii. Wrapping up UserTests
    ix. Setup Task TestSuite
    x. Testing with TaskData
15. Microservices
    i. WhyMicroservices?
    ii. What isMicroservices?
    iii. WhyDocker?
    iv. What isDocker?
    v. Terminologies inDocker
    vi. Child Processes
    vii. Types of child process

Mongodb Syllabus

1. Introduction to NoSQL Database
    i. What in NoSQL?
    ii. Difference between NoSQL and RDBMS
    iii. Benefits of NoSQL
2. Introduction & Overview of MongoDB
    i. Objectives
    ii. Design Goals.
    iii. The Mongo Shell
    iv. JSON Introduction
    v. JSON Structure
3. MongoDB Installation
    i. Installing Tools
    ii. Overview of Blog Project.

   iii. Swig, Express
   iv. Node Packaged Modules (npm)

4. CRUD Operation in MongoDB
   i. CRUD (Creating, Reading & Updating Data) Mongo Shell
   ii. Query Operators
   iii. Update Operators and a Few Commands
5. Data Modeling
   i. Schema Design Pattern
   ii. Case Studies & Tradeoffs
6. Storage Classes
   i. Automatic Storage Class
   ii. Static Storage Class
   iii. External Storage Class
   iv. Register Storage Class
7. Indexing and Performance Considerations
   i. Performance Using Indexes,
   ii. Monitoring And Understanding Performance
   iii. Performance In Sharded Environments.
8. Aggregation
   i. Aggregation Framework Goals
   ii. The Use Of The Pipeline
   iii. Comparison With SQL Facilities.
9. MongoDB Replication
   i. Application Engineering Drivers
   ii. Impact Of Replication And Sharding On Design And Development.