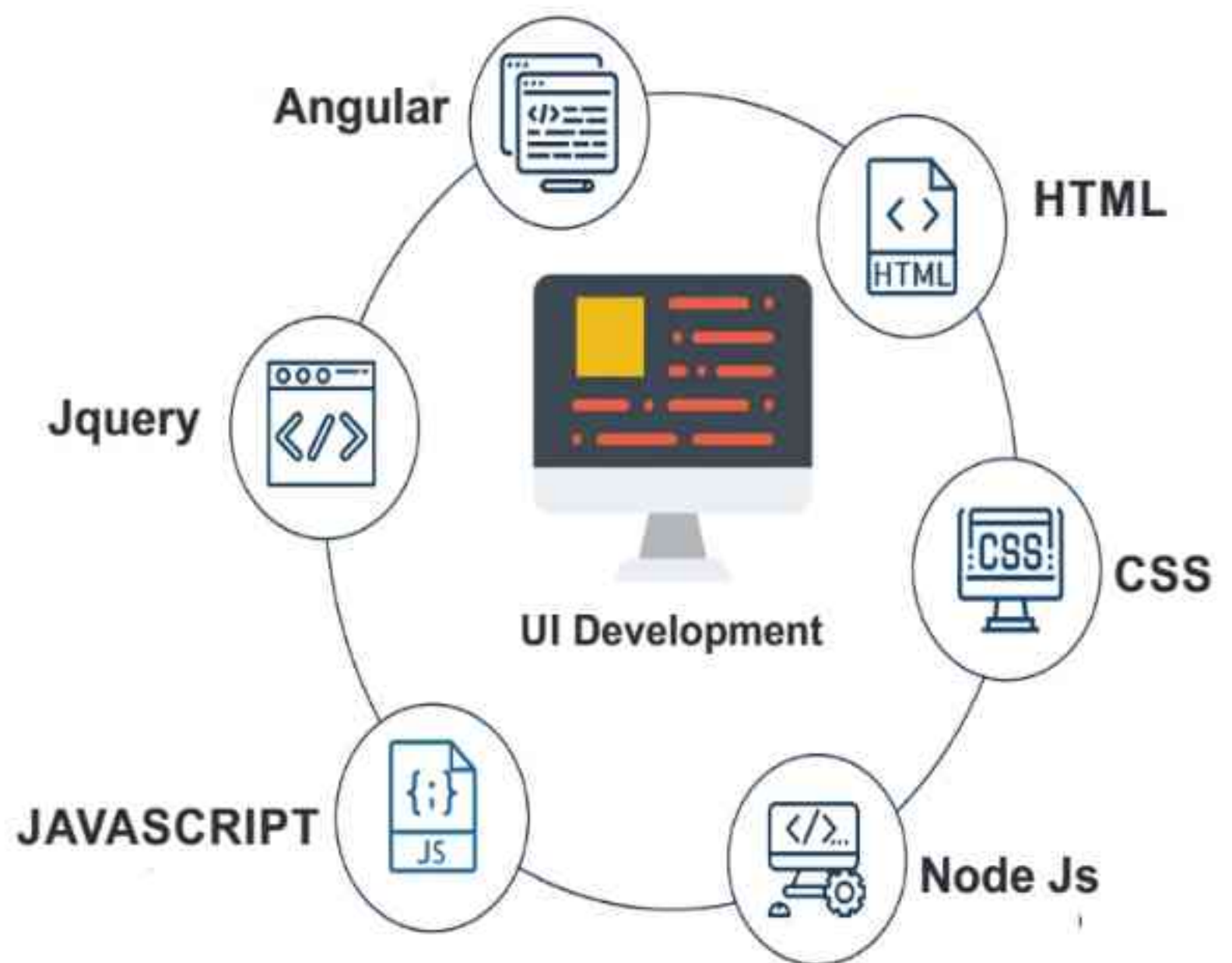


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# UI DEVELOPMENT

(HTML, CSS, JS, ANGULAR or REACT JS, NODE JS)

Duration:3-1/2months

## HTML 5

- Introduction to HTML
- Web Page, Website
- URL, Domain, Hosting
- Static Pages Vs Dynamic Pages
- Introduction to HTML Tags
- Text Properties, Multimedia Tags.
- Linking Tag, List Properties
- Tables, Frames & Forms
- New Media Tags( Audio, Video)
- New Markup Elements
  - Address, article, base, figure
  - details, header, nav, footer
  - section tags.
- Canvas and SVG Tags
- Form Input Tags
  - Email, Color, Number, Date, URL
- New Form Attributes, Web Storage
- HTML5 Geo Location
- HTML5 Drag & Drop
- Meta tags

## CSS 3

- Introduction of Css
- Types of Style Sheets, Syntax
- Difference Between Internal External & Inline
- Background Properties
- Heading properties, paragraph style's
- Paragraph border style's, table style's
- Text Properties, List Properties
- Difference Between div and span
- Hyperlink Tag Properties
- Psuedo Classes, Psuedo Elements
- Colors, Gradients
- RGB & HSL COLOR'S
- Drop Down Useing CSS
- Multi Column Layout
- Media Queries
- Shadow Effects
- Border Properties
- Transformation ( 2D , 3D)
- Transitions
- Animations

## Basic & ADV JAVASCRIPT

- Introduction to Javascript
- Javascript Output Possibilities
- Variables
- Constants
- DataTypes
- Comments
- Operators

### • Type Conversions

- Number
- parseInt
- parseFloat

### • Control Statements

### • Conditions

### • Loops

### • User Defined functions

### • Methods

- Number
- String
- Math
- Date

### • Array

- Object
- Array of Objects
- Array Methods

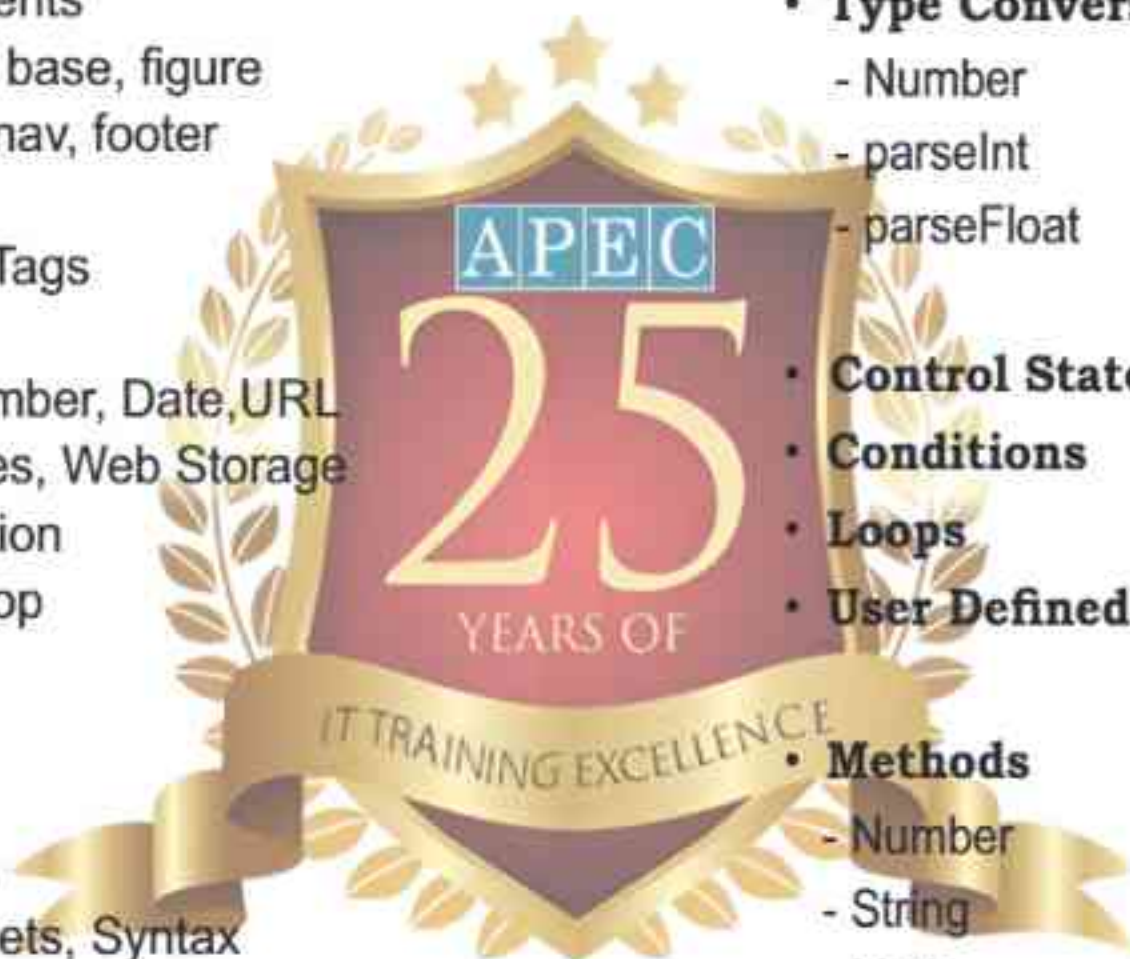
### • Events

### • Actions

### • Dialog Boxes

### • DOM

- Change Content of HTML elements
- Change HTML element attribute



## DOM (continued)

- Apply Css Styles
- Create Javascript Animations
- Create HTML Elements
- Remove HTML Elements
- Adding Multiple Event Handlers
- Navigating within the elements

## • Page Redirection

## • Error Handling

## • Function Advance Concepts

- Rest Parameters
- Anonymous Functions
- Function Constructor
- Function Closures
- Lambda Functions

## • OOPs Concepts

- Classes
- Objects
- Encapsulation
- Abstraction
- Composition
- Inheritance
- Polymorphism

## • Keywords

- this
- new
- let

## • Cookies

## • Regular Expressions

## • Form Validation

# ANGULAR

## What is Angular?

- Introduction
- AngularJS vs Angular
- Setup for local dev environment
- First Angular program
  - NodeJS & NPM
  - Visual Studio Code

## Angular Architecture

- Building Blocks of Angular Appln
- Angular Modules
- @NgModule decorator
- Angular Libraries
- Component
- Metadata
- Directives
- Dependency Injection
- Templates
- DataBinding
- Services

## Displaying Data using Templates

- About Directives
- Components Properties
- Interpolation
- Built-In Directive
  - ongiF, ongiFor, ongiSwitch
- Create class for data (Model object)
- Template Expressions
- Working with Arrays
- vs <template>
- External HTML Template File

## Data Binding

- Binding properties
- Interpolation
- One-way / Property Binding
- Event Binding
- Two-way binding with NgModel
- Attribute Binding
- Style Binding
- Class Binding



### **Styles Binding In Components**

- Style & Class Bindings
- Built-In Directives
  - NgStyle & NgClass
- Using Component Styles
- Special selectors
- Loading Styles into Components

### **Advanced Component Features**

- Components Life Cycle Hooks.
- Dynamic components
  - ngComponentOutlet

### **Template Driven Forms**

- Introduction
- Initial form layout
- Bind data properties - ngModel
- Add name attribute
- Add custom CSS
- Show/hide error messages
- Form submission - ngSubmit
- Disable the form's submit button
- Resetting the form

### **Reactive Forms**

- Reactive Forms Introduction
- Form Control Properties
- setValue & patchValue
- Validating Form Elements
- Submitting & Resetting forms
- Observing & Reacting to Form Changes
- Using FormBuilder

### **Pipes**

- Built-in Pipes
- Parameters and chaining Pipes
- Custom Pipes
- Pipes and Change Detection
- Pure and Impure pipes

### **Custom Directives**

- Custom Attribute Directive
- HostListener
- HostBinding
- Custom Validator Directive

### **Dependency Injection**

- Dependency Injection
- DI in Angular Framework
- Reflective Injector
- Exploring Provider
- Types of Tokens
- Types of Dependencies
- Configuring DI using Providers
- Implementing DI in Angular
- Optional Dependencies

### **Observables & Rxjs**

#### **Services in Angular**

- Build custom services
- Inject Custom Services
- Service using another Service
- Built-In \$http Service
- Promises
- Observables
- Get Request

#### **Angular Routing**

- Configuring and Navigating
- Parameterized routes
- Nested Routes
- Child Routes

#### **Angular Modules**

- AppModule as Root Module
- Feature modules
- Shared Module
- Lazy Loading a Module

#### **Animations**

#### **Single Page Application (SPA)**

#### **Setup & Deployment**



## TYPE SCRIPT

### Introduction

- Limitation of JavaScript
- What is Typescript.
- Benefits of TypeScript
- Setup the Environment
- First Typescript code

### Datatypes

- Basic Data Types
- String and Templated String
- Arrays • Tuple
- Enum • any and void
- null and undefined
- Type Inference
- Type Casting
- Difference between let and var
- Const declaration
- for...of vs for...in statement

### OOPS

- Writing and Using Classes
- Constructor method
- Inheritance of classes
- Type casting
- Type Assertion
- Static Properties
- Abstract class

### Interfaces

- Interface Declaration & Initialization
- Interface Implementation by class
- Interface having Optional Property
- Class extending another class
- Implementing an Interface
- Extending Interfaces

### Function Types

- Optional and Default Parameters
- Rest Parameters
- Function Overloading • Function Types

### Namespaces

- Introduction •Syntax with Example
- Compiling multiple TS files into single JS file

### Modules

- Exporting & Importing of Modules
- Re-Export • Default Exports

## REACT JS

### Module 1:Prerequisites of React js

- Es6
- Let, const keywords and Block Scope
- for of, for in
- Template literals
- Rest Parameters and Spread Operators
- Object Literals, Object Constructors and Function Closures
- Classes
- Inheritance
- Static Properties and Methods
- Iterators and Iterables
- Generators
- Modules (export and import)
- Introduction to Bable

### Module 2: Reactjs Basics.

- Introduction to React
- Uses of React
- First react application in online
- Installing Reactjs
- Creating and running first application in local system
- Working With React.render
- Application folder structure

### Module 3: Introduction to JSX and it's working

- Working with React. Create
- Embedding Expressions in JSX
- Attributes in JSX
- Children in JSX
- JSX in Depth

### Module 4: Working with Elements

- Introduction to elements
- Rendering elements into DOM
- Updating Rendered Elements

### Module 5: Reactjs Components and Props

- Introduction to Components
- Types of components
- Function Component
- Class Component
- Components Composition and Extraction
- Passing Data to Component using props
- Validating props using prop types
- Providing default values to props using default props

### Module 6: Understanding State and Component Lifecycle

- Uses of State
- Read state and set state
- Working with Component LifeCycle



### Module 7: Events and Event Handling

- Difference Between Javascript Event Handling and Reactjs Event Handling
- Working with Event Handling
- Passing arguments to event handlers

### Module 8: Working with Conditional Rendering

- Conditionally rendering a part of component
- Inline if with Logical And and if else with conditional operator
- Preventing Components from Rendering

### Module 9: Rendering list and using keys

- Rendering Collection of values
- Working with keys for stable identity
- Using map method in JSX

### Module 10: Working With forms

- HTML Form submission V/s Controlled components
- Uncontrolled components
- Significance to defaultValue prop
- Using react ref prop to get access to DOM element
- Access to DOM using 'ref'.

### Module 11: Working with Portals

- Usage of Portals
- Bubbling Through portals

### Module 12: Understanding error boundaries

- Introduction to error boundaries

### Module 13: React Hooks:-

- useState Hook
- useEffect Hook
- useContext Hook
- useReducer Hook
- useState Vs useReducer
- useCallback
- useMemo
- useRef
- Custom Hooks

### Module 14: React Material UI

- Introduction to React Material UI
- Typography
- Button, Button Group, Toggle Button
- Text field, Select, radio button, checkbox

- switch, rating, Autocomplete
- Box, Stack, Grid, Paper
- Card, Accordion, ImageList
- Navbar, Menu, Link, Breadcrumbs
- Drawer, Speed Dial
- Bottom Navigation, Avatar
- Badge, List, Chip, ToolTip
- Table, alert, Snackbar
- Dialog, Progress, Skeleton
- Loading Button, Date and time picker
- Date Range Picker, Tabs
- Timeline, Masonry
- Responsiveness, Customizing Theme

### Module 15: Routing With react router

- Setting up react router
- Understand routing in single page applications
- Working with BrowserRouter and HashRouter components
- Configuring route with Route component
- Using Switch component to define routing rules
- Making routes dynamic using route params
- Working with nested routes
- Navigating to pages using Link and NavLink component
- Redirect routes using RedirectComponent
- Using Prompt component to get consent of user for navigation
- Path less Route to handle failed matches

### Module 16: Just Redux

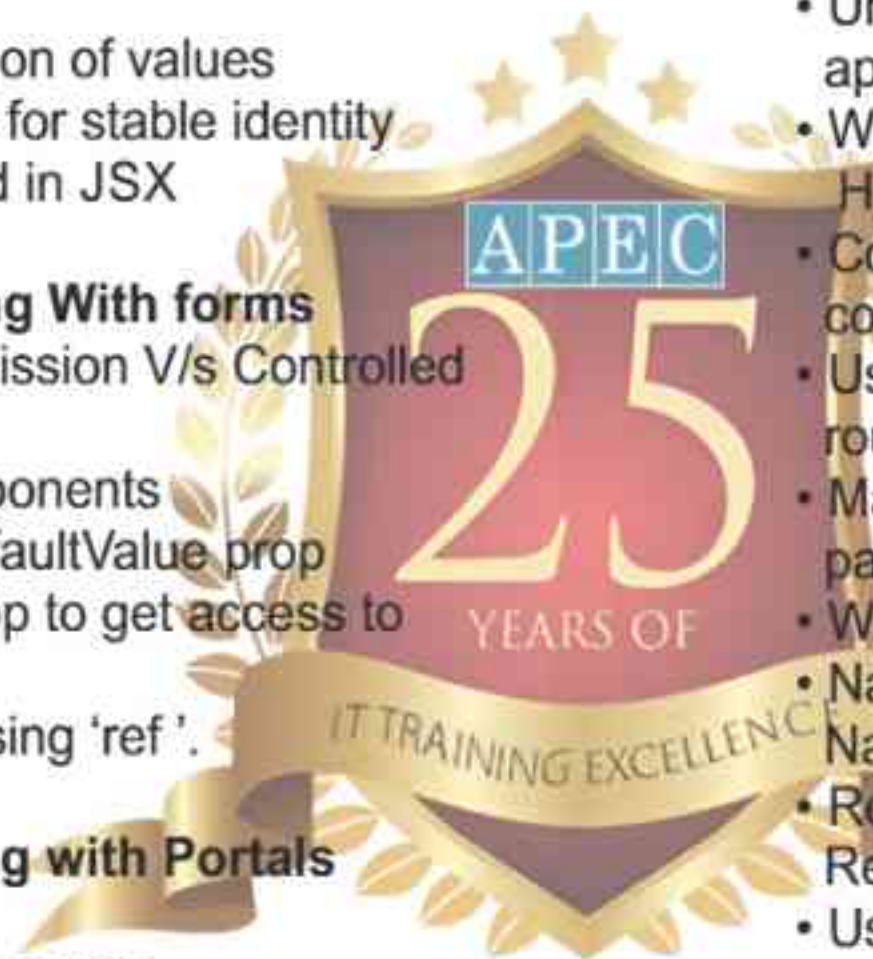
- Introduction to redux
- Uses of redux
- Redux principles
- Install and setup redux
- Working with redux by Creating actions, reducer and store

### Module 17: Working with

- Immutable.js
- Immutable.js for immutable
- datastructures

### Module 18: React Redux

- Introduction to React Redux
- Uses of React Redux
- Install and setup



## Set Operators

- Union, Union all ,Intersect Joins
- Simple
- Equi / Non-Equi
- Natural, Self
- Inner, Outer
- Cross or Cartesian Join

## Sub Queries

- Single / Multi Row
- Any, Some, ALL
- Exists & Not Exists
- Nested
- Correlated

## Indexes

- Create, Alter & Drop
- Performance variation

## TSQL Programming

- SQL versus TSQL Programming
- Introduction
- Control statements - If,Case
- While & other looping statements

## Cursors

- Types of Cursors
- Forward\_Only, Scroll
- Static, Dynamic
- Keyset
- Local & Global

## Stored Procedures

- Creating/Calling Stored Procedures
- Altering & Dropping
- Optional, Input, Output Parameters
- Permissions on Stored Procedures

## Exception Handling

- User Defined Error Messages
- Add & Remove
- Raising Exceptions Manual

## User Defined Functions

- Scalar Functions
- Table Valued Functions
- Permissions on User Defined Functions

## Triggers

- Stored Procedures VS User Defined Functions VS Triggers
- Creating Triggers
- Altering Triggers
- Dropping Triggers
- Magic Tables
- Instead of Triggers

## CLR Integration

- What is CLR Integration?
- Implementing CLR
- A Simple Example
- Working with XML Data Type

## Database - Backup, Restore

- Import, Export
- Attach, Detach

## NODE JS

### • Introduction to Node.js

- Features
- Modules
- Installation

### • Node.JS REPL commands

- Read
- Eval
- Print
- Loop

### • Node.JS - npm

### • Using package.json

### • Creating a module

### • Call back

- Blocking code
- Non-blocking code

### • Event loop

### • Event Emitter

### • Buffers

- Create, Write, Read
- Compare
- Concatenate
- Copy, Slice
- Convert buffers to JSON

### • Streams

- Read, Write
- Piping, Chaining

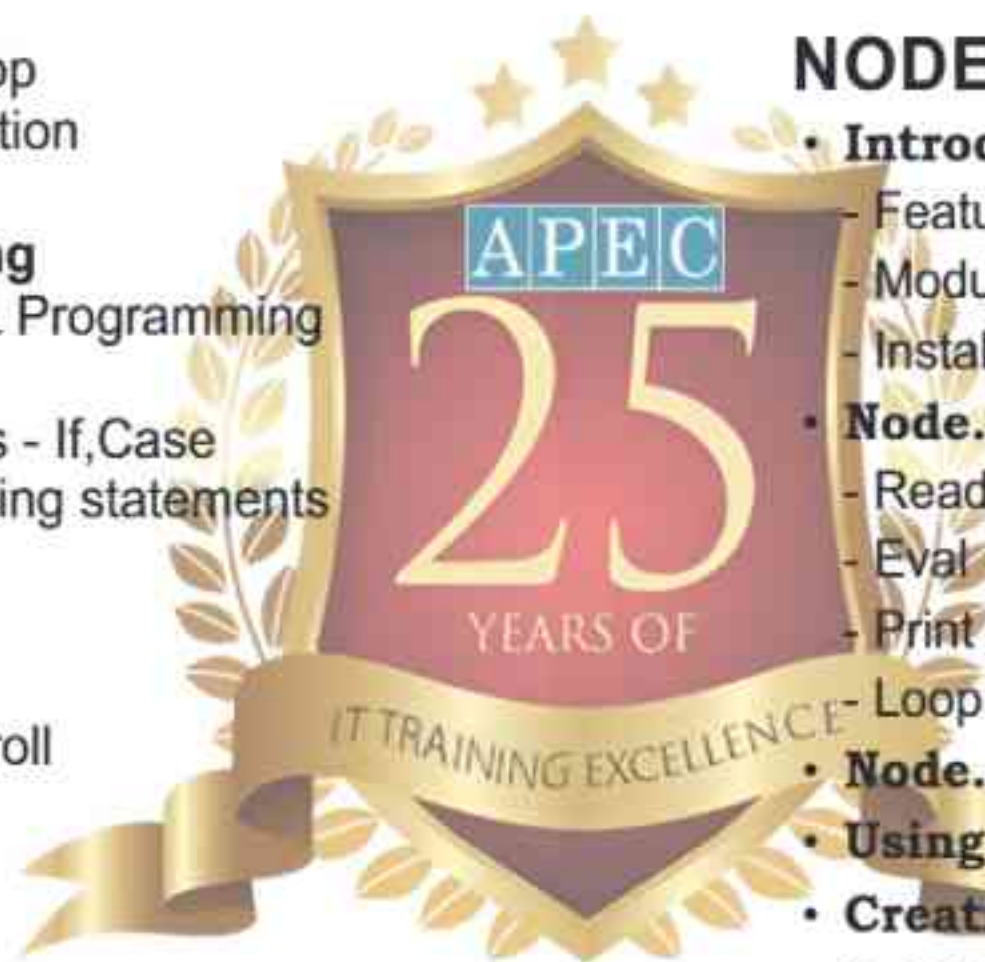
### • File system

- Synchronous
- Asynchronous

### • Global Objects

### • Web Module

### • Express Frame Work



- Presentational vs Container components
- Understand high order component
- Understanding mapStateToProps and mapDispatchToProps usage

### Module 19: Redux Saga (Reduxmiddleware)

- Uses of redux middleware
- Available redux middleware choices
- What is redux saga
- Install and setup redux saga
- Working with Saga helpers
- Sagas vs promises

### Module 20: Server-side rendering

- What is server-side rendering (SSR)?
- Why SSR
- Working with renderToString and renderToStaticMarkup methods

### Module 21: Testing in react

- Understand the significance of unit testing
- Understand unit testing jargon and tools
- Unit testing react components with Jest
- Unit testing react components with enzyme
- Using sinon to mock

### Module 22: Webpack

- What is webpack
- Why webpack
- Install and setup webpack
- Working with webpack configuration file
- Working with loaders
- Quick word on code splitting, lazy loading, tree shaking
- Setting up Hot Module Replacement Concepts of DBMS
- Introduction to DBMS
- Data Models
- HDBMS, NDBMS, RDBMS, ORDBMS
- Entity–Relationship (E-R)
- Normalization

### Introduction to SQL Server

- Advantages & limitations
- Login & Password
- Server Type & Server Name
- Authentication Modes
- SQL Server, Windows
- SQL Server Management Studio & Tools
- Object Explorer
- Query Editor

### Introduction To SQL

- Types of SQL Commands
- Data Types
- DDL, DML, DQL, DCL, TCL
- Databases
- Create / Alter / Drop
- Tables
- Create / Alter / Drop

### Table Constraints

- Not Null
- Unique
- Default
- Check
- Primary Key
- Referential Integrity or foreign key

### Data Manipulation Language (DML)

- Insert / Update / Delete
- Truncate & Drop
- Create a Table From Another Table
- Insert Rows From One Table To Another

### Data Query Language (DQL)

- Simple Select
- Select with row filters
- Where clause with relational operators
- Logical operators
- Special operators
- Between ... and
- In, Like
- Is Null, Isnull()
- Order By Clause
- Distinct Keyword
- Column aliases

### Transaction Management

- User & Server schema
- Implicit Transactions
- Begin / Save Transaction
- Commit / Rollback
- Role of Log File in Transaction Management

### Built In Functions

- Numeric/Character
- Date/Conversion/Identity
- Aggregate Functions
- sum(), avg(), etc.
- Group By & Having Clauses
- Ranking Functions
- Top Clause



# JQUERY

- History
- Pre Requirements
- Versions
- Download
- Install
- Creating First Page
- Selectors & Filters
  - Basic Selectors
  - Hierarchical Selectors
  - Basic Filters
  - Attribute Filters
  - Form Filters
- Traversing
- Annotating
- Manipulating Page Content
  - Getting Content
  - Setting Content
  - Manipulating Attributes
  - Creating Content
  - Inserting Content
  - Wrapping
  - Replacing
  - Removing
  - Working with CSS
- CSS Manipulation
  - JQuery CSS()
  - Applying CSS
  - Multiple CSS
  - Return CSS Property
- JQuery Utilities
  - JQuery Each
  - Functions
  - Data
  - Arrays
- Events
  - Bind & Unbind
  - Helper Functions
  - Event Object
  - Table Events
- Effects & Animations
  - Showing Elements
  - Hiding Elements
  - Fading Elements
  - Sliding Elements
  - Custom Animations
  - Easings
- JQuery AJAX
  - Introduction
  - JSON Objects
  - Simplified
  - Helpers
  - Handlers
  - AJAX with Detail Control
- JQuery UI Library
  - Installations
  - UI effects
  - Themes
  - Widgets
  - Interactions
- JQuery UI Plugins





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