Java Full Stack - Syllabus

Sl. no	Topic	Hrs
	Technologies / Skills Covered	
	Core & Advanced Java + J2EE + Spring + Web Technologies (Html, Css, Bootstrap) + Frontend Technologies (Angular & ReactJs) + Database (Oracle SQL)	
1	**Core and Advanced Java (Topics wise + Assignments Discussions)**	25
	Strong Core Java Experience with OOP Data Structures	
2	**J2EE (Topics wise + Assignments Discussions)**	25
	Core Java Programming, J2EE, JSF, JDK, UML, Algorithm and Web Services	
3	**Java Spring (Topics wise + Assignments Discussions)**	25
4	**Web Technologies: Html, Css & Bootstrap (Topics wise + Assignments Discussions)**	25
	Strong knowledge in Creating Web Pages with Responsive using Html5, Css3 and Bootstrap5	
5	**Javascript, Ecmascript & Typescript (Topics wise + Assignments Discussions)**	25
	Strong Knowledge in Writing the Client Side Programming, and Additionally adding the Pre – Requisite Typescript of Angular	
6	**Angular (Topics wise + Assignments Discussions)**	30
	Well Developed Single Page Applications can be builtup using Angular2v, 4v, 8v, 12v	

7	**ReactJs (Topics wise + Assignments Discussusions)**	30
	Well Developed Single Page Application can be builtup using ReactJs16v	
8	**Oracle SQL (Topics wise + Assignments Discussions)**	25
	Strong knowledge in Oracle SQL Database	
9	**Project Development & Deployment**	10
		120+
1	**Core and Advanced Java**	
	What is Java, Advantages, Used in, etc.,?	
	Java Basics	
	Classes and Objects	
	Flow of Control – Branching and Iteration	
	Strings and Arrays	
	Packages	
	Composition and Inheritance	
	Interfaces	
	Exceptions	
	JDBC	
	Java Collections and Generics	
	The Java Streams Model	
	Working with Files	
	Advanced Stream Techniques	
	Java Serialization	
2	**J2EE**	

	HTTP 1.1 Protocol, Request Response Life Cycle	
	What is J2EE Application, it's architecture and What is an Application Server?	
	Introduction to Servlets, their specifications and diverse types of Server-Side Frameworks	
	JDBC and connecting the Java Application with Database	
	ORM Frameworks available and basics of Hibernate	
3	**Java Spring**	
	Overview of Spring Technology	
	Spring Introduction	
	Dependencies and Dependency Injection (DI)	
	Working with BEAN Properties	
	Spring Expression Language for Configuration	
	Collection Valued Properties	
	Additional Capabilities	
	The Spring Container and API	
	The Annotation Driver Configuration	
	Database Access with Spring	
	Aspect Oriented Programming	
	Aspectj Pointcuts, Autoproxies	
	Introduction to Spring Web Application and Spring MVC	
	Overview of Spring Security	
4	**Html, Css and Bootstrap**	
	Html	
	Introduction to Html	

	Html Elements, Attributes	
	Page Creation with Formatting Elements	
	Creating Links and Navigating, Redirecting Pages	
	Displaying the Images, Adjustment of Images along with Content	
	Organizing data with Tables	
	Displaying data in Listings	
	Creating Forms and Layouts with Fields and Input	
	Implementing the Semantic Elements (latest Html elements)	
	Working with Audio and Video (Media Objects)	
	Css	
	Introduction to Css	
	Implementing the Three Different ways of Styles: Inline, Embedded and External to Html Content	
	Applying the Web Colors to Html Content in Three Different ways: Direct Name, Numerical, and HexaDecimal	
	Applying different properties like: padding, margin, float, font, border, background, etc.,	
	Applying the Display and Position properties, etc.,	
	Creating the Web Page with Content	
	Creating the Grid Layout with Sample Content with Responsive	
	Working with Media Queries	
	Bootstrap	
	Introduction to Bootstrap, Usage, Advantages	
	Discussing about different types of Resolutions	

	Implementing the Bootstrap Required Links into Web Pages	
	Create the Fixed Width, Fluid Width Web Pages	
	Implementing the Components of Bootstrap:	
	Tables, Lists, Forms, Images,	
	Modals, Tabs, Cards, Navigations	
5	**Javascript, Ecmascript and Typescript**	
	Javascript	
	Introduction about Javascript, DOM etc?	
	Writing the Programs and Displaying the Data	
	Understanding about Keywords, Identifiers	
	Declarations: var, let, const	
	Implementing Statements: Decision Making Statements and Loop Statements	
	Working with Arrays and Implementing with Examples	
	Understanding the Concept of Functions: Call and Define, Functions with Parameters, Return Statement, Arrow Functions, Call Back Functions	
	Implementing the Object Oriented Programming in Javascript: What is Object, Class, Constructor, Method, Property etc., and its terminology	
	Creating the concept with Class and Object includes the Methods, Properties, and Accessing the Data	
	Proptotype, Closures concepts implementation	
	Promise, and Async and Await concepts implementation	
	Ecmascript	

	Ecmascript Introduction	
	Declarations of Identifiers with let & const	
	Working with Loops	
	Functions, Passing Parameters, Return Statement, Arrow Functions, Call Back Functions	
	Spread Operators	
	Map Object with Set and Get	
	Promise, Async and Await with Promise	
	Typescript	
	Typescript Introduction, Advantages of Typescript	
	Declaring Variables or Identifiers using let & const and accessing them	
	Working with Decision Making Statements	
	Working with Loop Statements	
	Working with Functions	
	Understanding and Implementing Tuple Operators	
	Creating Interfaces, Accessing with Objects	
	Creating Class's, Interfaces, and Declaring Objects	
	Implementing Inheritance	
	Creating Custom Modules	
6	**Angular**	
	Introduction to Angular, Features, Advantages, Single Page Application	
	Setting up the Env., and Creating the Angular Project	
	Understanding the Angular Project Flow, Precising the Folder	

	Structure	
	Creating the Components through Command or Manual and Connecting to Project	
	Adding additional Dependencies through NPM, Installing or Updating or Deleting the Packages or Dependencies according to Project Requirements	
	Creating the Routing Concept with Group of Components	
	Working with Property Binding, Event Binding	
	Property Binding with One Way & Two Way	
	Implementing the Two Way Property Binding with Forms	
	Creating the Forms with Template Driven and Implementing Form Validations with Regular Expressions using Pattern	
	Creating the Forms with Reactive Forms and Implementing Form Validation with Regular Expressions using Pattern	
	Creating the Form with File Upload with Validation	
	Creating the Form with Adding Dynamic Elements on Fly Based on the User Actions	
	Understanding the concept of Services, Creating the Services, and accessing the Services into Components	
	Implementing the concept of Observables	
	Implementing the concept of Dependency Injection	
	Understanding the concepts of @Input() and @Output() Decorators and Implementation	
	Understanding and Implementing the concept of Directives	
	Working with Built-in Directives, Creating the Custom Directives	
	Understanding and Implementing the concept of Pipes	

	Working with Built-in Pipes and Creating the Custom Pipes	
	Implementing the CRUD Operations	
	Implementing the concept of Lazy Loading	
	Implementing the concept of Life Cycle Hooks	
	Creating the Custom Modules and Implementing into the Components	
	Creating the Single Page Application	
7	**ReactJS**	
	ReactJS Introduction	
	Scope of ReactJS	
	What is ReactJS?	
	Understanding the Terminology of ReactJS	
	What is Single Page Application?	
	Understanding the ReactJS Architecture	
	Setting up the ReactJS Environment	
	Creating the First Project in ReactJS	
	Understanding the Project Folder & Files Structure	
	Working with assets - Html, Css, Images, Javascripts in ReactJS	
	Understanding the Term: Component.	
	What is Component?	
	Creating the new Component(s)	
	Accessing the Created Component(s)	
	Working with Re-Usable Component(s)	
	Understanding the Terms: 'props' and 'state'	
	Working with 'props'	
	Implementing the 'props' into Component(s)	

	Creating the 'state' object, setting the 'properties' into it	
	Accessing the 'properties' from 'state' object into Components	
	Working with Event Handlers ex., onClick, onHover, onBlur, onFocus, onChange etc.,	
	Creating the methods into Component(s)	
	Writing the definition(s) of the methods	
	Passing 'parameters' into methods	
	Understanding the concept of Property Binding	
	Two types of Property Binding., 1. One Way Property Binding and 2. Two Way Property Binding	
	Asking the User to input the value, accessing those value(s)	
	Creating the group of Component(s) and accessing those through 'state' object	
	Creating the CRUD operations	
	Understanding the concept of Routing	
	Creating the group of Component(s) and aligning them into Routing	
	Fetching the Data from RESTAPI into Component(s) and accessing the Data	
	Understanding and Working with Material UI (ReactJS UI Framework)	
	Creating the Button, Radio, Form, Table etc.,	
	Working with Form, Two – Way Property Binding	
	Creating the Validation with Error Hints,	
	Applying the Regular Expressions to Input Fields	
	Working with the concept of Observables	
	Working with the concept of Services	

	Implementing the concept of Observables & Subscribe with Services	
	Implementing the concept of Observables & Subscribe with Services using RESTAPI	
	Understanding the Terms: babel, webpack	
	Understanding the concept of Redux	
	Understanding the Terms: Component, Action, Reducer, Data Store	
	Understanding and Implementing the concept of Redux	
	Understanding the Term: Sage	
	Implementing the functionality of Redux with Saga	
	Understanding the Terms: Life Cycle Hooks	
	What is the usage of Life Cycle Hooks	
	How many types of Life Cycle Hooks: 1. Class Based Life Cycle Hooks and 2. Functional Based Life Cycle Hooks	
	Understanding the Class Based Life Cycle Hooks and its methods: componentDidMount(), componentDidUpdate(), componentWillUnmount() etc.,	
	Understanding the Functional Based Life Cycly Hooks and its methods: useState(), useEffect(), useContext(), etc.,	
	Understanding the concept of Styled Components	
	Working with ReactJS Developer Tools	
	Implementing the concept of ContextAPI	
	Understand and Implementing the Unit Tests in ReactJS	
	Creating the Single Page Application in ReactJS	
8	**Oracle SQL**	

	Introduction to Oracle Database	
	Retrieving Data using SQL SELECT Command Statement	
	Restrict and Sort Data	
	Usage of Single – Row Functions to Customize Output	
	Invoke Conversation Functions and Conditional Expressions	
	Aggregate Data using Group Functions	
	Display Data from Multiple Tables using Joins	
	Use Sub-Queries to solve Queries	
	The Set Operators	
	Data Manipulation Statements	
	Use of DDL Statements to Create and Manage Tables	
	Schema Objects	
	Management of Schema Objects	
	Date and Time Operations	
	Retrieve Data using Sub – Queries	
	Built In Functions	