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| Phase | Scope | Week | Coverage |
| Foundation | Apply programming concepts and implement  OO programming | 1 | * Orientation and software setup * Problem solving techniques * Programming constructs, Implement Searching and Sorting * Working with Git & Gitlab * Basic Java fundamentals * OO thinking, classes, inheritance models, OO design, important classes * Reading and writing data from files * Software Engineering- * Requirement Understanding and gathering * Testing concepts * Problem and Incident Management * Agile with Scrum concepts * Stages of deployment i.e. Dev, QA, Staging and Production |
| Implementing Data Structures and implement Searching and Sorting Algorithms | 2 | * Data Structures & Algorithms * Unit Testing with JUnit * Error Handling * Web & Network Fundamentals |
| Advanced Language | Build & Test Java programs including Java 8 features | 3 | * RDBMS Fundamentals - Working with MySQL and implementing DML and basic DDL using MySQL * JDBC basics with RDBMS * Introduction to Java 8 Features such as Interface Enhancements, Functional Interfaces, Lambda Expression, ForEach – Iterable, Method References, Streams API * Core Java – Hackathon |
| UI & Front-end | Building Responsive Web Pages HTML5, CSS3 and JavaScript | 4-9 | * HTML5, CSS3, Blocks, Floats and Layouts, Media Queries for Responsive Web Design * Bootstrap Basics, Grid and Fluid Layouts, Responsive Layouts and Media Queries * Interactive Web pages using JavaScript, Unit Testing Using Mocha and Chai |
| Building Single Page Applications Using Angular & React | * Interactive Web pages with React JS; States and Props; Webpack; Component Life Cycle; Thinking in React, React Routers. ES6, JSX – Competent; Rendering Elements, Components and Props, State and Lifecycle; Handling Events, Conditional Rendering, Lists and Keys, Forms Lifting State Up, Composition vs Inheritance;, Test Automation using JEST and Enzyme * SPA Hackathon (JavaScript & React) * Angular and Angular-CLI; Template and Data Binding, Services, Forms, Routing, Directives, Component Thinking and Components Interaction; Unit testing a Component and a Service; * SPA Hackathon (JavaScript & Angular) |
| Enterprise Web | Building RESTful APIs with Spring | 10-12 | * Persistence data layer with SQL (MySQL) & No-SQL (MongoDB) * Building web services and Microservices using Spring and Spring Boot. Microservices using Spring Cloud, Connecting to databases, Automated testing, Spring Test * Microservices containerization using Docker; Docker-compose |
| DevOps & Cloud | Integrate and deploy | 13 | * Integrate & refactor - Consume the APIs in front end code, Implement Security; * DevOps (Implementing CI using Gitlab Runner (Intro to Open-Source CI Tools) & CD – Dockerization; * Intro to Cloud – Azure; Virtualization Basics, Cloud Fundamentals (SaaS, Paas, IaaS), Azure SQL, Blob, CDN, IAM- Azure Active Directory, ACS, Azure DNS, Azure Notification Hubs, Azure Service Bus, Azure VM; Azure DevOps |
| Capstone Project | Apply & Demonstrate competency gained | 14-15 | * Capstone Project - Combining UI/UX, JavaScript and Angular to Integrate & Re-factor to complete the FE web application * Final project presentation |