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| SN | Topics | Sub-Topics | Days | Software Required |
| 01 | RDBMS Fundamentals  SQL Queries  Working with Data | 1. Fundamentals of DBMS 2. RDBMS (Joins, Keys, Relationships, Constraints) 3. SQL Statements 4. DDL (Data Definition Language) 5. DML (Data Manipulation Language) 6. Advanced Concepts (Triggers, Views, CTE, etc.) 7. PL/SQL – Stored Procedures, Functions, Temp Tables, GTTs, Historical Tables, Synonyms, etc. 8. Transactions – ACID, Error Logging, Commit, Rollback, DB Profiling, Tracing 9. ORM (Object-Relational Mapping) 10. Data Warehouse Concepts | 1 | ORACLE XE |
| 02 | HTML, CSS, JS, Bootstrap | 1. JavaScript basics & fundamentals 2. Operators 3. Conditionals 4. Loops 5. Functions 6. Arrow functions 7. Scopes 8. Arrays 9. Objects 10. Class 11. Inheritance 12. Callbacks 13. Promises 14. Async/await 15. jQuery basics 16. Selectors 17. Filters 18. Events 19. Event handling 20. Functions in jQuery 21. Traversing 22. jQuery methods 23. Ajax | 2 |  |
|  | **Capstone Project** | | | |
|  | **Synopsis:**  The project aims to build a responsive, user-friendly web application where students can view upcoming campus events, register for activities, and access academic resources. The application will be developed progressively, starting with static HTML, CSS, and Bootstrap for layout and styling. JavaScript will be used to add interactivity, followed by Angular for building dynamic, component-based pages. The backend will be implemented in Java to handle business logic and data management, while Node.js will provide APIs for communication between the frontend and backend. The final solution will allow user authentication, event management, and seamless integration between all components.  **Milestone 1 – Static Web Foundation (HTML, CSS, Bootstrap)**  Create a responsive homepage with:  Event listings (static cards)  Navigation bar  About section  Use Bootstrap grid system for layout and components like navbar, cards, and buttons. | | | |
| 03 | JAVA | 1. Core Java (Multi-threading, Exception Handling, Util Logging, JDBC) 2. Lambdas (Functional Interfaces, Default and Static Functions, etc.) 3. Maven 4. SpringBoot 5. Web Services   6. Drools | 4 – 5 | ECLIPSE IDE JAVA V.21 |
|  | **Milestone 2 – Interactivity with JavaScript**  Add dynamic features:  Show/hide event details  Simple form validation for event registration  Sorting/filtering events (client-side)  Introduce JavaScript DOM manipulation and event handling. | | | |
| 04 | Angular 14+ | 1. Introduction to Angular 2. Setting up the Development Environment (Node.js, npm, Angular CLI) 3. Creating and Running an Angular Application 4. Angular Project Structure Overview 5. TypeScript Basics for Angular 6. Components and Templates 7. Data Binding (Interpolation, Property Binding, Event Binding, Two-way Binding) 8. Directives (Structural and Attribute) 9. Pipes (Built-in and Custom) 10. Services and Dependency Injection 11. Routing and Navigation 12. Modules (Root and Feature Modules) 13. Forms (Template-driven Forms, Reactive Forms) 14. Form Validation 15. HTTP Client and API Communication 16. Observables and RxJS Basics 17. Lifecycle Hooks 18. Component Interaction (Input, Output, ViewChild) 19. Change Detection Strategy 20. Angular Material and UI Components 21. Styling and Theming in Angular 22. State Management (BehaviorSubject, Services; Intro to NgRx) 23. Lazy Loading Modules 24. Error Handling in Angular | 6-7 | Nodejs Angular CLI  POSTMAN VS CODE Editor |
|  | **Milestone 3 – Enhanced UI with jQuery (Optional bridge for DOM handling)**  Use jQuery to simplify:  Element selection & animations  AJAX calls to load sample event data from a JSON file | | | |
| 05 | Node JS | 1. Introduction to Node.js and Features 2. Installing Node.js and npm 3. Running JavaScript in Node.js 4. Modules (Built-in, Custom, Third-party) 5. Working with npm 6. File System Module Basics 7. HTTP Module – Creating a Simple Server 8. Asynchronous Programming (Callbacks, Promises, Async/Await) 9. Express.js Basics and Routing 10. Working with REST APIs in Node.js 11. Connecting to a Database 12. Basic Error Handling | 8 - 9 |  |
| 06 | C# | 1. DataTypes 2. Nullable Types 3. Access Modifiers 4. Structures 5. Copy Constructors 6. File Handling 7. Exception Handling 8. Events 9. Collections 10. LinQ 11. Design Concepts 12. Asynchronous Calls (Async & Await & Tasks) 13. Multi Threading | 9 -10 |  |
|  | **Milestone 4 – Angular Single Page Application**  Convert static pages into Angular components.  Create:  Event list component  Event detail component  Registration form with validation  Implement routing for navigation without full page reload. | | | |
| 07 | Flutter | 1. Dart Basics & Fundamentals 2. The Entry Point: void main() 3. Dart Variables: Numbers, Strings, and Booleans 4. String Interpolation 5. Lists: Dynamic Arrays in Dart 6. Maps: Key-Value Pairs 7. Functions in Dart 8. Null Safety and Null Aware Operators 9. Classes: Blueprint for Objects 10. Named Constructors 11. Widgets: Stateless, Stateful 12. UI Elements: Container, Stack, Column, Row, SizedBox, ConstraintBox 13. ListView, GridView 14. Riverpod – Basic Knowledge 15. API Call – Basic Knowledge | 11 - 12 |  |
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