

FULL STACK DEVELOPMENT THROUGH JAVA WITH AI

Mod. 1 # Designing Front-End of a Website

➤ **Dreamweaver, HTML & HTML (5.0)**

- HTML Tags, Attributes, Headings, List, Image, Hyperlink, Frames, Form, Table
- HTML5 Semantic Attributes, HTML5 SVG element Audio Tag, Video tag
- New Form Elements, Canvas, Local & Session Storage
- Drag and Drop API, Geolocation, HTML5 Compatibility
- HTML5shiv.js(For tags support on IE8 and below)
- modernizr.js(For Feature Detection library for IE8 and below)
- Respond.js(For media queries support on IE8 and below)

➤ **Cascading Style Sheet (CSS 3 & 5)**

- Backgrounds, Box Model, Dimension, Pseudo-class, Pseudo-element
- Navigation Bar Image Gallery, Gradients, Shadows, 2D & 3D Transforms
- Progress Bars, Multistep Form, Animations, Image Slideshow, Image Hover Overlay
- Animation Button, Vertical tabs Overlay effect, Rounded Corners, Fixed Menu Bars, Slide Bar on Scroll, Cards

Use of AI in Web Designing(ChatGPT etc)

➤ **JavaScript**

- About Javascript and version, Variable in Javascript, Javascript operator
- If-else statement, Loop (While Loop, Do while Loop, For Loop)
- Function, Array, Strings, Error Handling, Event Handling, Javascript OOPS
- DOM Manipulation, ES6+ Features, Asynchronous JavaScript
- JavaScript in the Browser (Cookies, Getlocation API)

PROJECT

➤ **Bootstrap (Designing a Mobile Responsive WebSite)**

- Structure of Bootstrap Application Responsive Web Design(RWD)
- Using page headers and panels, Adding Media Objects, Thumbnails
- Bootstrap Grid System
- Working with forms, Bootstrap CSS, etc
- Bootstrap Plugins, Navigation Components

**LIVE PROJECT
(DESIGNING A WEBSITE)**

MOD. 2 # Programming (C & C++), Data Structure & Database (MySQL)

➤ **Programming Through 'C' language**

- Data Types, Variable, Constants, Keywords.
- Types of Errors, **C Arithmetic**, C Programming Structure
- Condition Checking (if-else), Loops (While, For, Do-while); Nesting of Loops
- Switch Case, Continue & Break statements
- Functions, Pointers , Recursion
- Array (1-D, 2-D), String, Structures, File Handling

EXAM

➤ **Object Oriented Programming through C++**

- Object and Classes, Structure Vs Classes
- Passing Object to function
- Data Encapsulation/Data Hiding, Access Specifiers
- Inheritance (Multi-Level, Hybrid, Multiple Inheritance)
- Friend Class, Friend Functions
- Polymorphism (Virtual Functions)

EXAM

➤ **Data Structure Through C Language**

- **Link List** (Singly, Doubly, Circular)
 - Dynamic memory allocation (malloc(), calloc(), realloc(), free(), etc.)
 - Link List operations (Creation, Display, Traversal, Insertion, Deletion, Updation)
- **Stack and Queues**
 - PUSH and POP functions (for inserting and extracting the elements)
 - Types of Queue (Simple, Circular, Priority, Double Ended),
 - Queue operations (Insertion, Deletion), Applications of Queue
- **Polynomials**
- **Sparse Matrix**
 - Types of Sparse Matrix (Diagonal, Tri diagonal, Upper/Lower Tri diagonal)
- **Searching & Sorting Techniques (Array)**
 - Binary Search (Array), Linear Search (Array and Link List)
 - Selection Sort, Bubble Sort, Insertion Sort, Shell Sort, Quick Sort, Merge Sort
- **Polish Notation**
 - Polish Notation (Infix, Prefix, Postfix); Conversion of Infix to Postfix, Infix to Prefix
- **TREES & Graphs**

➤ **Database (MySQL)**

- RDBMS Terms (Attribute, Record, Entity, etc.) Integrity Constraints, Data Types
- DDL, DML, DCL; Where, Distinct, Having, Order by, Group by
- Nested Queries, Set Operations, Grant and Revoke, Nested Queries
- Special Operator, Joins, Table aliases, Unions, MYSQL Security

PROJECT

MOD. 3 JAVA PROGRAMMING

➤ **CORE JAVA**

- Java Fundamentals (Data Type, Variables)
- Operators (Arithmetic, Relational, Bitwise, Unary, Assignment, Ternary, etc)
- Control Statements, Selection Statements (If – else, Switch case)
- Iteration Statements (While, Do-while, For, Nested loops)
- Jump Statements(Break, Continue)
- **Introduction to OOPS**
 - Classes and Objects, Classes and Methods
 - Constructor Overloading, Method Overloading
 - Recursion, Final keyword, Nested and Inner class, Exploring String class
 - Inheritance, Basics of inheritance, Using super
 - Multilevel hierarchy, Method overriding, Abstract classes
 - Packages and Interfaces (implementing interface, Nested interface)
 - Exception handling, Exception types (Try, Catch, Throw, Throws, Finally)
 - Threads and Multithreaded programming, Synchronization
 - String handling, String operations, String comparison, StringBuffer class
 - Input output classes and interfaces
 - Stream class, Byte Stream, Character Stream, Console class

➤ **Advance Java**

- **Applets**
 - Applet Class & Applet Methods, Banner Display, Event Listener, File Handling Operations
- **Swing**
 - Swing Packages, Swing Applet, Event Handling
 - Exploring Swing (J Label , J Text , J List, J Combo Box, J Tabbed Panels)
- **Layout Manager**
 - Flow Layout, Border Layout, Box Layout, Grid Layout, Grid Bag Layout, Card Layout
- **Advance JDBC (Data Base Connectivity)**
 - JDBC Introduction, JDBC Driver
 - Data Base Connectivity Steps, Connectivity with MySQL
 - Access without DSN, DriverManager, Connection, Statement
 - ResultSet, PreparedStatement, ResultSetMetaData, DatabaseMetaData
 - Store image, Retrieve image, Store file, Retrieve file
 - CallableStatement, RowSet Interface
 - Transaction Management, Batch Processing

➤ **PROJECT WORK**

➤ **Java EE (Industrial Training)/J2EE (Website Development)**

- **Static website development**
 - Basics of Web, Difference between static and dynamic website
 - (X)HTML, Templates & Website Hosting
- **Dynamic website development**
 - Introduction to Java EE
 - Setting up the servlet container (Apache Tomcat) and IDE (Eclipse)
- **Servlets**
 - Basics concepts in Java Servlet, Life Cycle of Servlets
 - Deployment Descriptor (web.xml), Calling servlets from servlets [get n post]
 - Cookies, Sessions, ServletContext, ServletConfig
 - Response redirection, Request Dispatcher
 - Request Headers, Response Headers, Status Codes,
 - Servlet collaboration: filtering and chaining
- **JSP (Java Server Pages)**
 - JSP Life Cycle, Inbuilt objects, JSP comments, JSP expressions
 - JSP scriptlets, JSP declarations, JSP directives, JSP actions
 - Working with Templates, State management, **Java Beans**
- **EL (Expression Language)**
- **JSTL**
- **JDBC (Java database connectivity)**
 - Type of drivers, Sending email using JavaMail API
- **Asynchronous Java Script and XML**
- **Using Captcha, Security**
- **Web services**
- **MVC (design pattern)**
- **Spring**
 - Introduction and architecture of Spring
 - Inversion of Control container (dependency injection)
- **Hibernate**
 - Features of Hibernate, Hibernate vs JDBC
 - ORM and its Advantages, POJOS, Reverse Engineering
 - CRUD, Mobile View Controller (M.V.C.)

Use of AI in Web Development (ChatGPT etc)

DURATION

1 year Part Time/ 6 Months Full Time

LIVE PROJECT WORK

➤ **Introduction to Cloud Computing**

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