Full Stack Development (Six Weeks)

#CodingMtlbVMM

VMM EDUCATION
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HTML 5.0, CSS, BOOTSTRAP

Creating HTML Documents and using All Tags of HTML Like , Heading , Tables, Div, embed etc. Making a Look and Feel Website implementing various options of CSS on the website . Making website responsive using bootstrap classes , using bootstrap modals , components , navigation .

JAVA SCRIPT

Creating Basic Javascript functions and then cruising through variables , data types , If Else , Loops , Array , Strings fiddling CSS with Java Script and creating effects using Java Script .

GETTING STARTED WITH NODE

Installing Web Storm and understanding NPM and various commands to install and run your first Program

NODE JS

Understanding NODE JS & NPM , working with modules , HTTP Modules , URL Modules , Understanding Events , File Upload , Email.
Using Express Framework with Node for Web development.

MYSQL DATABASE

Connecting with My SQL , performing CRUD operations on My SQL , Generating JSON , Creating Web Services.

CRUD OPERATIONS

Connecting to MYSQL and performing CRUD operations using NOde to create a data driven Application

AJAX AND FETCH

To Communicate with Server to Fetch Data without refreshing whole page. Working with REST API. Working with POSTMAN

GENERATIVE AI

Understanding LLMs (GPT Gemini) integration

Building text generation, chatbots, image generation, summarisation, & content automation.

Using AI Agents to build web page and code

VERSION CONTROL WITH GIT

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INCLUDES PROJECT

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Artificial Intelligence & Machine Learning (Six Weeks)

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JUPYTER NOTEBOOK

- *Introduction to Jupyter Notebook Installation of anaconda and Jupyter notebook*

NUMPY

- 1.Introduction to Numpy
- 2.Installation of Numpy
- 3.Array , 1D Array , 2D Array , 3D Array
- 4.Numpy build in functions
- 5.Performing Mathematical operations ,
- slicing operations generating random sampling.

PANDAS

- Installing and understanding Pandas
- Series , Series objects
- Working with Attributes , methods extracting series values using get method
- Working with Data frames , select , add , broadcast . sort , using conditions merging .concatenation
- working with dates
- importing data from CSV ,JSON
- Working on world population data .

MATPLOTLIB

- *Introduction to Matplotlib*
- *Line Graph , Histogram , PIE chart , Bar Plot, Scatter Plot , Subplotting Displot , joint plot , pairplot*

MACHINE LEARNING IN ACTION

- *Introduction to Machine Learning*

Supervised Learning

- *Linear Regression*
- Logistic Regression
- K Nearest Neighbours
- Decision Tree
- Random Forest

Unsupervised Learning

- K Mean Clustering

OPENCV & FACE DETECTION

- *Reading Images & videos from webcams*
- *Basic Function*
- *Resizing & Cropping*
- *Working with Images,Colour Detection,Shape Detection*
- *Face Detection*
- *Text Recognisation*

GENERATIVE AI

Understanding LLMs (OpenAI, Gemini) integration

Building text generation, chatbots, image generation, summarisation, & content automation.

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C/C++

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Foundation Building Course

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HISTORY & INTRODUCTION

History of Programming Language , Generation of computer Language , History of C/C++ , Running Your First Computer Program

OPERATORS & BASIC OPERATIONS

Tokens , Data Types, Variables, Working with operators, Controls statements including if-else, loops, comparison of loops, Nested Loops

DATA STORAGE

Using Array, Strings , 2D Arrays, 2D Character Arrays, String Library Functions

FUNCTIONS

Understanding their usage, Creating user-defined functions , extensive practice of functions, understanding storage classes

POINTERS

Understanding Memory allocation of variables, creating pointers, reading and writing pointers, , Pointer to Arrays, Pointer to String, Call by Ref, Call by Value

INDUSTRY ORIENTED PROJECT. GUIDED PROJECT DEVELOPMENT.
INCLUDES PROJECT

OBJECT ORIENTED 1

Understanding concept of classes , objects, data members, member functions, self creating user defined classes , Access specifier

OBJECT ORIENTED 2

Using inheritance, virtual Base class polymorphism: Virtual Functions, Function Overloading , Operator Overloading and using classes objects in modules

DATA STRUCTURES

Linear Search, Binary Search, Bubble Sort, Selection Sort, Stacks, Ques , Linked List

FILE HANDLING

Reading & Writing Files using characters , Reading & Writing Objects.

ADDITIONAL TOPICS

Command Lines Arguments, Installing Code blocks and using GCC Compiler

VERSION CONTROL WITH GIT

Understanding concept of Git & importance of version control , working with core git commands clone, commit, push, pull , branch and merge

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Python

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HISTORY & INTRODUCTION

All about Python Language, Understanding Python Environment Running your First Python understanding Input and output

OPERATORS & BASIC OPERATIONS

Tokens , Data Types, Variables, Working with operators, Controls statements including if-else, loops,

DATA STORAGE

Using string(s) , List(s), Tuple(s), set & Dictionary To store data and understand Associated Library Functions

FUNCTIONS

Understanding their usage, working with Global Creating user-defined functions and extensively Variables and Recursion and Modules, Lambda, Reduce & Filter operations, Date time

FILE HANDLING

Working Text, Reading writing Text File, Binary files, working with CSV Files creating Console Based python APP with CSV files as backedn

INDUSTRY ORIENTED PROJECT · GUIDED PROJECT DEVELOPMENT ·
INCLUDES PROJECT

OBJECT ORIENTED 1

Understanding concept of classes , objects, data members, member functions, self creating user defined classes , hiding data members

OBJECT ORIENTED 2

Using inheritance, polymorphism and using classes objects in modules

MYSQL

under standing Various DML Statements , Joins, concepts of Keys and learning to create efficient databases

CONNECTING PYTHON TO MYSQL

Using Python to connect with MYSQL Database ., performing CRUD operations in console applications

GRAPHICAL USER INTERFACE

Understanding concept of GUI using tkinter package working with various widgets and creating GUI based Python APP

VERSION CONTROL WITH GIT

Understanding concept of Git & importance of version control , working with core git commands clone, commit, push, pull , branch and merge

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Java

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STANDARD EDITION (SIX WEEKS)

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HISTORY & INTRODUCTION

Introduction to the history and evolution of Java .Compilation Process & Understanding Java Virtual Machine Environment

OPERATORS & BASIC OPERATIONS

Tokens , Data Types, Variables, Working with operators, Controls statements including if-else, loops,switch case etc

DATA STORAGE IN JAVA

Working with Single & Multi Dimensional Arrays String, String Buffer & String Builder, String Tokenizer

OBJECT ORIENTED-1

Understanding Concept of classes, Objects, methods, message passing and static members, working with anonymous static block, constructors and Temporary Instance

OBJECT ORIENTED-2

Inheritance and interface , private interface methods, Anonymous Inner Class , Polymorphism and packages , Exception Handling

GUIDED PROJECT DEVELOPMENT · INDUSTRY ORIENTED PROJECT ·
INCLUDES PROJECT

MULTITHREADING

Thread Class & Runnable Interface , Thread Life cycle , Thread Synchronization

GRAPHICAL USER INTERFACE

Abstract Window Toolkit & Components . Event Handling Mechanism . Swing Components and Layout Managers

DATABASE CONNECTIVITY

Working with MYSQL , Creating Connection with the database. performing CRUD, JDBC with GUI

NETWORKING

Introduction to computer networks . Working with Server & Client , Using HTTP Request and Response

COLLECTION CLASSES

Working with Date , Calendar & Object Classes, List , Set , Map . Queue and Array List.
Auto boxing with collections and generic Types

VERSION CONTROL WITH GIT

Understanding concept of Git & importance of version control , working with core git commands clone, commit, push, pull , branch and merge

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