Full Stack Python

COURSE – 2024

Vedas Rapshtech

Success Matters

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Course Curriculum

Month 1: Python Fundamentals

Week 1: Introduction to Python

- Introduction to Programming and Python
- Installing Python and IDE Setup (PyCharm, VS Code, Jupyter, etc.)
- Writing your first Python program (Hello World)
- Python Syntax and Basic Structure
- Variables, Data Types (int, float, string, boolean)

Week 2: Operators and Control Flow

- Arithmetic, Comparison, Logical, Assignment, and Bitwise Operators
- Control Flow: if, elif, else
- Loops: for, while
- Break, Continue, and Pass

Week 3: Data Structures in Python (Part 1)

- Lists: Creation, Accessing, Manipulating
- Tuples: Characteristics and Usage
- Dictionary: Key-Value Pairs, Accessing, Adding, Updating

Week 4: Data Structures in Python (Part 2)

- Sets: Creating, Accessing, Set Operations
- List and Dictionary Comprehensions
- Iterators and Generators
- Practice Project: Building a Mini Library Management System using Lists, Tuples, and Dictionaries

Month 2: Python Concepts

Week 1: Functions and Modules

- Defining and Calling Functions
- Parameters and Arguments
- *args and **kwargs
- Scope: Local, Global, and Nonlocal Variables
- Lambda Expressions
- Modules and Packages
- Practice: Simple Calculator using Functions

Week 2: File Handling and Error Handling

- File Operations (Reading, Writing, Appending)
- Handling Files: Open, Close, Read, Write Methods
- Context Manager (with statement)
- Exceptions: Try, Except, Finally
- Raising Exceptions

Week 3: Object-Oriented Programming (OOP)

- Classes and Objects
- __init__ Method and Attributes
- Instance and Class Variables
- Methods: Instance Methods, Class Methods, Static Methods
- Inheritance, Polymorphism, Encapsulation
- Practice Project: Create a Banking System with OOP

Week 4: Advanced OOP and Decorators

- Method Overriding and Operator Overloading
- Multiple Inheritance
- Decorators and its use in Python

Month 3: Django, HTML and CSS

Week 1:Introduction to django

- How to install virtual environment
- How to install django
- How to create a project and application
- What is serializers
- What is MVT

Week 2: Introduction to HTML

- What is HTML?
- Setting up the environment
- Basic HTML structure
- Tags, Elements, and Attributes
- Headings, Paragraphs, Lists
- Links, Images, and Tables
- Forms: Input fields, Buttons, Text areas
- Semantic HTML5: Header, Footer, Section, Article
- Practice: Build a Simple Web Page with Text, Links, and Images

Week 3: Introduction to CSS

- What is CSS? Inline, Internal, External CSS
- CSS Syntax: Selectors, Properties, Values
- Colors: Text Colors, Background Colors
- Fonts: Font Family, Size, Style, Weight
- Margins, Padding, Borders
- Box Model
- Practice: Style the Simple Web Page Created in Week 1

Week 4: Introduction to Databases and SQL

- What is a Database?
- Introduction to SQL and SQLite/MySQL
- Creating Databases
- Creating Tables, Data Types
- Inserting, Updating, and Deleting Data

Month-4: SQL

Week 1: Querying Data with SQL

- SELECT Queries, WHERE Clause
- Filtering Data with Conditions, Logical Operators
- Sorting Data (ORDER BY), Limiting Results

Week 2: SQL Joins and Relationships

- Foreign Keys and Relationships between Tables
- JOIN Operations: Inner, Left, Right, Full Joins
- Grouping Data: GROUP BY, Aggregate Functions (COUNT, SUM, AVG)

Week 3 and 4:

- **Industry related Python Projects**