TRAINING BASKET
QUALIFY FOR TOMORROW

python

DAY 1 (2 Hours)
- Getting Started with Python
  - Introduction to Python and its features
  - Installing Python and choosing an IDE
  - Working with Jupyter Notebook
  - Writing your first Python code
  - Working with Interactive and Script mode
  - Structure of Python Program
  - Basic Introduction to OOP
- Variables and Operators in Python
  - Variable Naming Rules and Assignments
  - Python Keywords
  - Input and Output
  - Operators used in Python:
    - Arithmetic
    - Assignment
    - Comparison
    - Logical
    - Bitwise
    - Identity
    - Membership

DAY 2,3,4 (2 Hours each)
- Data Type In Python
  - Understanding various data types in python and its operations:
    - Usage of operators on Data Types
    - Accessing Elements in sequences
    - Usage of Methods for each Data Type
    - Slicing and Indexing
    - Typecasting Data Types
  - Data types:
    - Numbers
    - Strings
    - Lists
    - Tuples
    - Set
    - Frozenset
    - Dictionary

DAY 5,6,7 (2 Hours each)
- Control Flow In Python
  - Conditional Flow:
    - if,elif,else Statement
    - Nested statements
    - Indentation in Python, Usage of Pass statement
  - Loops in Python:
    - For and While
    - Nested Loop

- Usage of Range function
- Usage of Break, Continue Loop Control Statement
- List and Dictionary Comprehension
- Exercises

Day 8,9,10 (2 Hours each)
- Functions in Python:
  - Usage of Built-in Functions
    - Example: map,filter,sum,max,min,sorted,dir,help,any,all, eval, enumerate,etc
  - User Defined Functions:
    - Structure of UDF and the flow of execution
    - Types of UDF:
- No Argument
- Requires Arguments
- Keyword Arguments
- Fixed Arguments
- Variable Length Arguments
- Variable length Keyword Arguments
  - Scope of Variables
  - Lambda Function

Day 11 (2 Hours)
- File Handling:
  - Opening a file and performing read/write operations
  - Introduction to using Excel files with python modules

Day 12 (2 Hours)
- Modules and Packages:
  - Importing Modules in Python Programs
  - Working with Various Modules and creating User Defined Modules:
    - random, os, sys, time, math, numpy, pandas, re, etc
    - Structure of UDM, Usage of __name__

Day 13 (2 Hours)
- Web Scraping using Python:
  - requests, urllib.request module
  - BeautifulSoup

Day 14 (2 Hours)
- Web Automation using Python:
  - Selenium

Day 15, 16 (2 Hours each)
- JSON with Python:
  - Fetch Data in JSON
  - API fetch data in JSON format
  - Building an interactive Dictionary
  - Basic introduction to Flask to create our own API for GET method
  - Fetch data using our API by running the flask application on localhost

DAY 17 (2 Hours)
- Exception Handling:
    - Default Exception and Errors
    - Catching and Raising Exceptions
    - Try--Except--Else--Finally Blocks
    - Asserts in Python
    - User defined Exceptions

DAY 18,19,20 (2 Hours each)
- Introduction to Object-Oriented Programming with Python:
    - Class and Objects
    - Variable and methods
    - Special Methods and Usage of Operators with objects
    - Polymorphism, Inheritance, Abstraction and Encapsulation in Python

DAY 21 (2 Hours)
- Database Handling:
    - Connecting to sqlite database
    - Connect to MySQL and executing sql query using python

DAY 22, 23 (2 Hours each)
- GUI Programming Using Tkinter
    - Understanding the widgets used in tkinter
    - Creating basic GUI applications: calculator, Interactice Dictionary, Web Scraping application

DAY 24 (2 Hours)
- Multithreading
- Regular Expression:
    - Usage of the Re Module

DAY 25 (2 Hours)
- Decorators, Generators and Iterators in Python

DAY 26 (Hours)
- Introduction to Web Crawling Using Scrapy

DAY 27, 28 (2 Hours each)
- Introduction to Django with Python
    - Understanding the basics of using Django framework
    - Building a portfolio website

DAY 29, 30 (2 Hours each)
- Doubt Sessions for overall topics
- Project Work