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Counsellor Name/Phone :

Python Demo Date :

Python Demo Time :

Python Fee :

Python Duration :

Trainer Name :

Aptitude & Reasoning

Quantitative

Basic Maths Algebra

Percentages

Profit And Loss Discounts

Averages

Time and Work

Chain Rule

Pipes and Cisterns

Ratios

Proportions a Partnerships

Time and Distance

Trains

Boats and Streams Simple Interest

Compound Interest

Reasoning

Directions

Letter Series

Number Series

Coding-Decoding

Blood Relations Statement and Assumption

Analogy

Odd Man Out Series

Venn Diagrams

Mirror Images

Water Images

Arranging in Order Paper Folding/Cutting

Grouping

Counting the figures

Clocks Calenders

Seating Arrangements

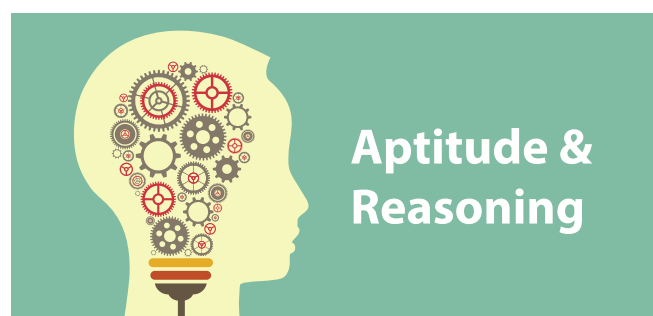
Data Interpretation

Bar Charts

Line Charts

Pie Charts

Table Charts



Soft Skills

QUALITY IN SOFTSKILLS

English Skills: Basic Grammar- Parts of Speech, Preposition, Tenses, Usage, Auxiliaries and Modals, Sentence Formation and Phonics - Sounds, Pronunciation and Articulation
LSRW Skills: Listening, Speaking, Reading and Writing Skills, Techniques & Tips and its importance.

Communication Skills: Types, Levels, Styles, 7C's, Barriers & How to overcome Barriers, Importance, Interpersonal Skills and Activities
Business Communication Skills: Telephone Etiquettes, How to Write Official Letters, Drafting Official Emails, Writing Memos & Blogs and Professional Ethics

Public Speaking Skills: Reduce Fear & Shyness, Openness & Transparency, Pre-Requisites for Public Speaking

Presentation Skills: Preparation, Tips & Techniques and Body Language
Employability Skills: Job Readiness- Resume Formats, How to Face Interview, PI/ GD/ JAM, Interview Questions, Power Dressing, Corporate Grooming, Goal Setting, Corporate Culture & Work Ethics

VALUE ADDITION:

International Tools: SWOT Analysis, SOAR Analysis, Transaction Analysis, Johari Window, IKIGAI Japanese Concept, Mind Mapping, and Enneagram Personality Type
VERSANT + Voice & Accent Training with Accent Neutralization to reduce MTI and Regional Slang



Core Python

Python Fundamentals

Python Introduction & setup environment

What are the software's required to learn python

- Python3.7.0 version installation
- Visual studio code installation
An identifier (variable)
- What an identifier (variable)
- Rules for an identifier (variable)

Data types in Python

Integer data type

Floating data type

String data type join()

len()

replace()

split()

strip()

rstrip()

lstrip()

upper()

lower()

slice operator with + index

slice operator with - index

Boolean datatype

Complex datatype

List datatype

List with their properties

append()

remove()

insert()

extend()

pop()

index()

sort()

sorted()

len()

copy()

clear()

Tuple datatype

Tuple with their properties

max()

min()

len()

Set datatype

Set with their properties

copy()

clear()

len()

intersection()

update()

union()

Dictionary data type

Dictionary data type with their properties Keys()

values()

items()

popitem()

get()

copy()

clear()

update()

- Bytes datatype
- Byte Array datatype
- Frozen set datatype
- Range datatype
- None datatype
- Working with input() function with their rules
- Type casting in python
- Working with eval () function with their rules

An operator in Python

- Arithmetic operators
- Assignment operators

Logical operators

Logical and operator Logical or

operator Logical not operator

Equality operators

Comparison operators

Chaining operators

Ternary operators

Special type of operators

Identity operators

Membership operators

Bitwise operators

Bitwise and operator
Bitwise or operator
Bitwise exclusive or
Bitwise complement operator
Bitwise left-shift operator
Bitwise right-shift operator

Working with Input & Output functions

- Input() & print() functions
- Working separator attribute
- Working with end attribute
- Formatted string
- Replacement operator

Command Line argument (CLA) in Python

- Working with sys module with argv variable
- Argv variable with various operations

Control Statements in Python

Decision making or conditional statements

If statement
Nested if statement
if else statement
If elif else statement
Iterative statements
for loop nested for loop
while loop
nested while loop

Transfer statements

pass statement
break statement continue statement
Working with zip () function
List comprehension
Tuple comprehension
Set comprehension
Dictionary comprehension

Functional Programming language in Python

- What is function
- Types of functions
- Why do we use functions in real time applications
- How to create a function in python
- What is `_name_` `--""_main"`

- Formal parameters
- Actual parameters
- Arguments in function
- Positional argument
- Default argument
- Keyword argument
- Variable length argument
- Keyword variable length argument
- Difference between `*obj1` & `**obj2`

Nameless function

Working with lambda keyword filter() function
map() function
=reduce() function

Inner or Nested function

Packages in Python

- What is module
- What is package
- What in Library
- What is framework
- How package is important in real world software's
- Complete structure of package
- Complete structure of nested package

Modular Programming Language in Python

- Why modular programming language
- Import & export data from one to another module
- Various possibility of import & export the data
- Working with reload() functions
- Working with math module
- Working with random module

Pandas Library

- What are pandas
 - How to install pandas
 - How pandas ruling in data science applications
 - Working on Data Frame object
 - Working with pandas predefined functions
- | | |
|------------------|-----------------|
| head() function | tail() function |
| max() function | min() function |
| count() function | sum() function |

sum(1) function sort() function

Working with iterating methods in pandas

- a. Iteritems()
- b. Iterrows()
- c. Itertuples()

Num Py Library

- a. What is NumPy
- b. How NumPy is ruling in data science applications
- c. How to install NumPy
- d. Working with zero to nth dimension arrays
- e. What is ndim
- f. What is ndmin
- g. Slicing with numpy
- h. Working with shape attribute
- i. Working with reshape function
- j. Applying the loops on NumPy
- k. Working with predefine functions in NumPy

Advance Data Structure in python

- a. Working on Stack with their rules
- b. Working with Queue with their rules
- c. Working binary tree with their rules
- d. Working with linked list Single linked list
Double linked list

Pattern Examples

Important Interview Questions & Answers

Advanced Python

Object oriented Programming language in Python.

- a. What is class
- b. How to create class
- c. What is an object
- d. How to create an object
- e. What is constructor
- f. What is Instance method (Non static method)
- g. What is class method
- h. What is static method
- i. What is Instance variable
- j. What is Static variable
- k. What is Local variable
- l. Working with GC module
- m. Working with Inner classes
- n. What is composition and aggregation
Inheritance
- a. Duck-Typing
- b. Operator overloading
- c. Method overloading
- d. Method overloading with default argument
- e. Method overloading with variable length argument
- f. Constructor overloading
- g. Constructor overloading with default argument
- h. Constructor overloading with variable length argument
- i. Method overriding
- j. Constructor overriding
- Working on Encapsulation
- Abstract method > Abstract class
- Interface > Concrete classes Access modifier

File Handling in Python

- a. Why file is required
- b. What is file handling
- c. How to open a file
- d. Working with various modes of file
- e. Working with write() and write lines()
- f. Working with read() And read line()
- g. Working with 'with' statement
- h. Working with pickling & unpickling

- l. Working with CSV module
- j. Working with Zipping and Unzipping
- k. Working with object serialization
And object deserialization

Exception Handling in Python

- a. Types of errors in programming language
- b. What is exception
- d. Working with default exception
- d. Working with try & except & else & finally block
- e. Working with nested try & Except & else & finally block
- f. Difference between try & finally block

Decorators in Python

- a. What is decorator
- b. Why decorator is required
- c. Working with @decorname decorator
- d. Working with décor function

PBDC in python

- a. Why PDBC
- b. Working XAMPP tool for MySQL Database
- c. How to install MySQL. Connector drivers
- d. Performing all database queries

Generators in python

- a. What is generators
- b. Why do we require generators
- c. Working with yield keyword

Multi-Threading

- a. What is multi-threading
- b. Types of multi-threading
- c. What is Thread
- d. How many ways we can create thread in python
- e. How to improve the application performance with threading
- f. Synchronization and Asynchronization

Assertion in Python

- a. What is assertion
- b. Types of assertion
- c. Working with assert keyword to Develop testcases

- d. Scripts for to perform Debugging operations using assertion

Web Scrapping with Regular expression

- a. What is regular expression
- b. Working with re module in python
- c. Working with character classes
- d. Working with predefine classes
- e. Working with quantifiers
- f. Regex object for Indian mobile number
- g. Regex object for email
- h. Working with predefine functions
match() fullmatch()
search() findall()
sub() subn()
split()
- i. What is web scooping
- j. How to fetch real time data using web scooping process

Web development

(UI or Front End)

HTML & HTMLS

- a. What are the software require to learn UI
- b. Working with Fav icon for our frontend
- c. Working with heading tag
- d. Working with formatted tag
- e. Working with paragraph tag
- f. Working with marquee tag
- g. Working with image tag
- h. Working with anchor tag
- i. Working with table tag
- j. Working with form and its components
- k. Developing the complete form with validation
- l. Working with HTML5tags
- m. Working with div tag

CSS & CSS3

- a. What is CSS
- b. Types of CSS
Inline CSS
Internal CSS
External CSS
- c. What are selectors and its types Using tag-

- based selector Using class-based selector
- Using Id selector
- Using group by selector
- Using universal selector
- d. Working with float property
- e. Working visibility property
- f. Working with display property
 - none
 - inline
 - inline-block
 - block
 - flex
- g. Working with position property
 - static
 - absolute
 - fixed
 - StiCk'y'
 - inherit
- h. Working with media query

Java Script

- a. Why JavaScript
- b. What is JavaScript
- c. How many ways we can JavaScript
 - Inside the body tag
 - Inside the head tag
 - External JS
- d. Working with variable declarations
- f. Working with document. Write()
- g. Working with console.log()
- h. Working Dialog boxes
 - Alert()or window. Alert()
 - Confirm()or window confirm()
 - Prompt()or window.prompt()
- j. Working with Data types Primitive datatype
- Nonprimitive datatype
- k. Working with operators
- l. Working with control statements
- m. Working with events
- n. Working with functions
- o. Working with DOM
- p. Working with High order functions
- q. Working with promises in JS
- r. Working with OOPS in JS
 - Creating a class
 - Creating an object
 - Constructor

- Inheritance
- Super keyword
- Encapsulation
- Prototypes
- Polymorphism

BOOTSTRAP (4&5)

- Why bootstrap
- What is bootstrap
- Features of bootstrap
- What is grid system
- What are offset classes
- Working with typography
- Working with buttons
- Working with jumbotron
- Working with Progress bar
- Working with paginations
- Working with forms
- Working with cards
- Working with navbar tag
- Working with model
- Working with panel
- Working with validations states
- Working with toggle and Collapse classes

Django

Prerequisites to learn Django

What is Django

- Features of Django
- How to create a project
 - How to create application
 - Working with complete file structure in Django after creating Django project & application
 - How to create more than one application
 - How to create a urls.py file at application to improve performance
 - Working with MVT design pattern

Working with templates folder for frontend development

Working with Static folder for frontend design development

- Implementing JavaScript in Django
- Implementing bootstrap in Django

Working with model class in Django

- Working with Django forms
- Working with Django model relationship
 - a. One To One Relationship
 - b. Many To One Relationship
 - c. Many To Many Relationship

Django Exceptions

- a. Working with predefined exception
- b. Working with custom exception
 - Django ORM
 - Django Cookies & Sessions implementations
 - Django Custom Pouting
 - Django Image uploading
 - Django file uploading

Django Rest Framework

- Why Django rest framework is required What is API
- What is Web API
- What is Rest-FulAPI
- How to create restful API's using Django rest framework
- Working with postmen tool to test our restful API's

Angular JS

Prerequisites to learn angular JS

What is angular JS

Working with angular JS directives

Working with one way and two databinding

Working with Angular filters

Angular 14 Version

Introduction to typescript

What is type script

How to install and develop the typescript

What is Interpolations

Installing of Node JS

How to install angular framework

How to create an application

File and folder structure of angular application
w

Working with one way databinding

- a. Interpolation databinding
- b. Property binding
- c. Class binding
- d. Style binding
- e. Event binding

Working with Two-way databinding

Working with custom component

Integrating bootstrap in angular

Working with *ngFor and *ngIf and *ngSwitch

Working with predefined pipes

Working with custom pipes

Working with unit testing in angular

Working with Routing in Angular

React JS

Why react compare to another framework

What is react

Installing of ReactJS

File & folder structure of react application

Functional component in ReactJS

Class component in ReactJS

Working with Custom component

Working with CSS in ReactJS

Working with Bootstrap integration

Working with JSX

What is state in ReactJS

States using functional component

States using class component

Working with Props in ReactJS

Working with Hooks in ReactJS

Working with Redux operations

Working with MYSQL integration in ReactJS

Mysql or Oracle Database

Why database

What is database

What is SQL

How to install MYSQL database

Working with DDL commands

- a. Create command

- b. Alter command
- c. Drop command
- d. Rename command
- e. Truncate command

Working with DML Commands

- a. Insert command
- b. Update command
- c. Delete command
- d. Select command

Working with constraints

- a. Primary key
- b. Foreign key
- c. Unique key
- d. Null key

Working with order by clause

Working with where clause

Working with having clause

Transactional commands

- a. rollback
- b. commit
- c. save point

Working with joins

Inner join

Outer join

Cross join

Full join

Flask

Prerequisites to Learn Flask

What is Flask

Why Flask compares to Django

How to install flask

How to create flask applications

How To integrate routing in flask

How to develop frontend development using flask

How to connect database with flask

Flask with Flask restful with microservices

What is flask restful

What is microservice

How To develop microservice based restful API'S

Implementing the microservice using flask restful

FastAPI with Microservices

What is Fast API

Why Fast Apl compare to flask restful & Django rest framework

Develop the restful APIS with FastAPI with MongoDB implementation



Microservices

Cloud with Python Integration

AWS with Python integration

AWS vs **AZURE** vs **GOOGLE CLOUD**



Google Cloud

Generative AI with open AI(Tools)& NLP & Data Structures & Algorithms

Applications of AI

Histroy of AI

Types of AI

Future of AI

Type of Agents

- a. Intelligent Agent
- b. Agent Environment
- c. Turning Test in AI

Problem Solving in AI

- Search Algorithm
- Uninformed Search Algorithm
- Informend Search Algorithm
- Hill climbing Algorithm
- Means End Analysis

Adversarial Search

- Adversarial Search
- Minimax Algorithm
- Alpha-Beta Pruning

Knowledge Represent

- Knowledge based Agent
- Knowledge Representation
- Propositional Logic
- Rule of Inference
- First Order-logic

Unification in FOL

- Resolution in FOL
- Forward Chaining and Backward Chaining
- Backward Chaining and Forward Chaining
- Reasoning in AI
- Indective vs Deductive reasoing



SEARCHING

- 1) Linear Search.
- 2) Binary Search.
- 3) Depth First Search.

SORTING

- 1) Insertion Sort.
- 2) Heap Sort
- 3) Selection Sort.
- 4) Merge Sort.
- 5) Quick Sort
- 6) Counting Sort

GRAPHS

- 1) Kruskal's Algo.
- 2) Dijkstra's Algo.
- 3) Bellman Ford Algo.
- 4) Floyd Warshall Algo.
- 5) Topological Sort Algo.
- 6) Flood Fill Algo
- 7) Lee Algo

ARRAYS

- 1) Kadane's Algo.
- 2) Floyd's Cycle Detection Algo.
- 3) KMP Algo.
- 4) Quick Select Algo.
- 5) Boyer More Majority Vote Algo.

BASICS

- 1) Huffman Coding Compression Algo.
- 2) Euclid's Algo.
- 3) Union Find Algo.

Introduction to Artificial Intelligence

Life Cycle of Artificial Intelligence

Difference AI vs ML vs DL vs Generative AI vs Agentic AI

Large Language Model(LLM)

- Introduction to Encoders/Decoders
- Understanding Self Attention
- What are the Transformers
- Types of Transformers
- Implementation of Transformers
- What is LLMs
- Types of LLMs
- Pre-Training
- LLM application

Working with Hugging Face Ecosystem

- Introduction to Hugging Face Ecosystem
- Hugging Face Transformers Library
- Exploring Hugging Face models and Tokenizers
- Integrating Hugging Face models with applications

Working with LangChain

- Introduction to the LangChain Framework
- Understanding the purpose and core components of LangChain Framework
- LangChain Framework Setup Environment
- Basic Configuration and setup for development
- Step-by-Step to create new application using LangChain Framework
- Complete Life Cycle of LangChain Framework with application Development

Meta's LLaMA API

- Introduction to LLaMA
- Key features of LLaMA
- Understanding the Model Architecture of LLaMA

Open AI API

- Introduction of Open AI API
- Set-Up Environment of Open AI API
- Different AI/Generative AI application Development using Open AI API
- Application for text to image using Open AI API
- Application for image to audio using Open AI API
- Application for audio to video using Open AI API

Agentic AI

- Why Agentic AI
- What is Agentic AI
- Life Cycle of Agentic AI
- Working on perception in Agentic AI
- Working on Reasoning in Agentic AI
- Working on Actioning Agentic AI
- Working on Learning in Agentic AI
- Developing the various agents for Application Development using Agentic AI

Working on Google Gemini_2.0 version

- Getting started with Gemini_2.0 version
- How to obtain an API key for Gemini_2.0 version
- End to End Explanation using Gemini model
- Selecting and initializing the right model for specific tasks
- Step-Step project to create an AI powered chatbot with Gemini_2

After completing this course, students can apply for:

- Python Developer
- React Developer
- Backend Developer
- Gen AI Engineer
- Cloud Engineer
- ML Engineer
- Full Stack Developer
- Angular Developer
- AI Engineer
- Prompt Engineer
- API Developer
- Data Engineer

Why Choose Sikara Tech?

Industry-Focused Training

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