Pre Activity 1 Overview and history of python

1.Overview and history of python

* Environment Setup.
* IDE setup Pycharm.
* First Python Program:- HELLO WORLD
* Environment Setup.
* IDE setup Pycharm.

Pre Activity 2 GitHub project creation

* Configuration of GitHub in Pycharm.

Github project creation

* Configuration of Github in Pycharm.
* Checkout/ commit / and push the code.
* Basic working with Git.
* Checkout/ commit / and push the code.
* GIT installation.
* Basic working with Git.

Topic 1 HELLO WORLD using print (“HELLO WORLD”)

Topic 2 Data types

3.6 Numbers

Python supports four different numerical types −

• int (signed integers)

• long (long integers

• float (floating point real values)

• complex (complex numbers.

Number Type Conversion

• Mathematical Functions

Integer Float String Boolean

Topic 3 Uses of Input function

1. WAP to take user name as input from terminal and format string as welcome $name

2. Practice test:- Ask two question : Employee Name and Project

Then, print msg like “$name works for $project”

3. Type casting: - string to Integer/float

4. Practice Test: Ask employee for Joining year and print total number of years exp with HCL

3.1 Identifiers

* Reserved Words
* Input from the User
* Multiple Statements on a Single Line
* Multiple Statement Groups as Suites
* Command Line Arguments

Topic 4 String and its uses

Use of Single quotes, double quotes, triple quotes

3.7 Strings

* Accessing Values in Strings
* Updating Strings
* Escape Characters
* String Special Operators
* String Formatting Operator
* Triple Quotes
* Built-in String Methods

String inbuilt functions substring, len, upper, lower,

title, find, replace,

Topic 5 Operators Arithmetic + - \* / %

3.3 Basic Operators Types of Operator

Python language supports the following types of operators.

• Arithmetic Operators

• Comparison (Relational) Operators

• Assignment Operators

• Logical Operators

Uses of Math lib

Logical & || < > !

Topic 6 Decision making if elif

Practice test take input from user for name and current working country if india print offshore or onsite

3.4 Decision Making

if statements

* if...else statements
* nested if statements

Topic 7 loop For, while & nested loops

Practice 1. Program to print half pyramid using \*

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3.5 Loops

* while loop
* for loop
* nested loops

Loop Control Statements

* break statement
* continue statement
* pass statement

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Practice 2. Working with 2D list

Topic 8 Data structure List Tuple Dictionary in-built method

Practice1. WAP to remove duplicate employee from list, Unpacking

Practice 2. Immutability of tuples and unpacking

Practice 3. Create a dictionary of Employee name age org

3.10 Dictionary

* Accessing Values in Dictionary
* Updating Dictionary
* Delete Dictionary Elements
* Properties of Dictionary Keys
* Built-in Dictionary Functions & Methods

3.9 Tuples

* Accessing Values in Tuples
* Updating Tuples
* Delete Tuple Elements
* Basic Tuples Operations
* Built-in Tuple Functions

3.8 Lists

* Accessing Values in Lists
* Updating Lists
* Delete List Elements
* Basic List Operations
* Built-in List Functions & Methods

Topic 9 Functions

Pass by reference as value

Practice 1. write a function for calculating employee Exp

3.12 Functions

* Defining a Function
* Calling a Function
* Pass by reference vs value
* Function Arguments
* Required arguments

Topic 10 Exception

3.15 Exceptions

* Exception Handling
* Assertions
* Handling an exception
* The except Clause with No Exceptions
* The except Clause with Multiple Exceptions
* The try-finally Clause
* Argument of an Exception
* Raising an Exceptions
* User-Defined Exceptions

Topic 11 Comments

Topic 12 Class and object inheritance lambda

* Python - Classes/Objects
* Overview of OOP Terminology
* Creating Classes
* Creating Instance Objects
* Accessing Attributes
* Built-In Class Attributes
* Destroying Objects (Garbage Collection)
* Class Inheritance
* Overriding Methods
* Base Overloading Methods
* Overloading Operators
* Data Hiding

Topic 13 Modules imports & Packages

3.13 Modules

* The import Statement
* The from...import Statement
* The from...import \* Statement
* Locating Modules
* The PYTHONPATH Variable
* Namespaces and Scoping
* The dir( ) Function
* The globals() and locals() Functions
* The reload() Function
* Packages in Python

Topic 14 Writing Unit test cases with Python

* Unit test case using python default framework

Topic 15 MVC frameworks Django

* Simple Crud application
* Curd with Admin.
* Consuming micro service.

Topic 16 Working with Micro services using Flask

* Separation of Monolithic service to micro service
* Exposing rest endpoints.
* Working with templates.

Topic 17 Data reading/writing from Xls

Topic 18 Simple bar chart in Xls

Topic 19 Data loading from csv

Topic 20 Data manipulation in Table using sqllite3 in memory DB

Topic 21 Simple data analysis for employee and prediction for new employee using Anaconda (Panda)

Topic 22 Calculate accuracy of Predicted result

Topic 23 Dump dataset in model and reuse same model in future prediction

Topic 24- Basic working with scripts.

Topic 25- Build and deployment on Cloud  
 1- Local Deploy

2- CI/CD using Jenkins.

3- Pipe line creation.

4- Deployment on AWS.

Topic 26- References (In depth Data science with Data Camp)

<https://github.com/wblakecannon/DataCamp>

Data analysis using Numpy

More examples using Pandas

More machine learning Examples