Introduction to Programming with Python

SUMMARY-

Python is easy to learn, general purpose but a powerful, high-level programming language. It has a simple but effective approach to object-oriented programming. In today's session, we will have a brief introduction to Python Programming, we will discuss basic concepts and features of Python Language; further, we will discuss implementation, advantages of Python as well as the differences between the current version 3.7x and the older version 2.7x of Python. We will also cover general syntax in Python, basic data types, variable declaration, and basic operators in Python.

Learning outcomes of the session-

On completion of the session, you will be able to:

- Understand the scope and the applications of Python in various domains.
- Create and run a console-based basic program in Python.

Coding Activity- 30 min

John manages a private vehicle parking site at a hospital. Calculate the total amount John has earned **for a day** for ***N-numbers*** of 2-Wheelers and ***M-numbers*** of 4-Wheelers parked at the hospital. The charges for vehicles are as below –

- A 2-wheeler vehicle - Rs.10 per day
- A 4-wheeler vehicle - Rs. 20 per day.

Approach to solution - Create an expression using operators, to find the total amount collected by John by taking the necessary variables in your program.

Breakout-room Activity- 30 min

Akash had borrowed a sum of Rs.10000.00 for 2 years at an interest of 10% compounded annually. Create a command-line program in Python to calculate the total ***Compound Interest*** Akash has to pay at the end of 2 years.

Approach to solution - Create an expression using operators, to find the total amount of compound interest ***CI*** using below formula -

CI = [A – P] where, **A** = $P[1 + (r/n)]^{nt}$

A = Amount, **CI** = Compound interest, **r** = Nominal annual interest rate

n = Number of times the interest is compounding, **t** = Time (in years)

The solution to the given problem:

Principal **P** = Rs. 10000, Rate **r** = 10%, and Time **t** = 2 years,

number of compounding **n** = 1

So,

A = $10000[1+(10/100)]^2$ = 10000[(11/10)(11/10)] = 12100.00

CI = **A** - **P** = 12100 - 10000 = 2100.00

Solution: Akash will have to pay total interest for Rs. 2100.00