DAY - 3

1) what is python and why is it called an interpreted language?

A) Python was created by Guido van Rossum in the late 1980's and officially Released in 1991.

It emphasizes code readability with a clean and easy-to-understand syntax.

why is python called an interpreted language?

Because Python code is executed line by line by an interpreter, not compiled into machine code beforehand like C or Java.

2) what are the key features of python that make it popular for beginners and professionals?

A) Python is one of the most popular programming language in the world. both for beginners and professionals because of a combination. of simplicity, flexibility and power.

1. Easy to learn & Read,
2. Interpreted language
3. Dynamically Typed
4. High-level language
5. Large standard library
6. Cross platform
7. versatile
8. object-oriented
9. integration capabilities

3) what is the difference between Python 2 and python 3?

features	Python 2	Python 3
Release year	2000	2008
Point statement	point "Hello" (point is a statement)	point("Hello") (Point is a function)
Division Behavior	5/2 = 2 (integer division)	5/2 = 2.5 (true division)

Unicode support	strings are ASCIS By default, use u "text" for unicode	All strings are unicode by default.
Input function	raw input() for string, input() for eval	only input() (returns str always)
Point without parenthesis	Allowed (Point "Hello")	Not allowed (print ("Hello") required)

4) What are Python's applications in real-world projects.

field	use / Example
1) web development	used with Djargo, flask to build websites
2) Data science	used for data analysis and AI (numpy, Pandas, Tensorflow
3) Automation / scripting	Automates repetitive tasks like file handling and testing.
4) Games & App Development	used with Pygame, TKinter for games and GUI apps.
5) web scripting and cyber security	Collects website data and builds security tools.

5) what is PEP 8 and why is it important in python programming

what is PEP8.

PEP 8 stands for Python Enhancement Process. It is the official style guide for writing clean, readable, and consistent python code.

If gives rules & best practices about

* Naming conventions.

* Indentation
* line length
* spacing
* comments
* code structure.

PEP 8 important

PEP8 is important because it helps Programmers write clean, readable, and consistent python code, making it easier to understand, maintain and share with others.

6) who developed python and in which year was it released.

A) python was developed by Guido van Rossum in the year 1991.

7) what do you mean by "dynamically typed" in python?

A) Dynamically typed means that you don't need to declare the data type of a variable when creating it - python automatically decides the type at runtime based on the value assigned.

8) what is the difference b/w a compiler and an interpreter, and which does python use?

Compiler	Interpreter
Translate the entire program at once into machine code	Translates & executes code line by line
Faster after compilation	slower (executes one line at a time)
Shows all errors after full compilation	stop at the first errors found
create a separate executable file	Does not create an executable file
C, c++	Python, Java script.