Q What is python & what are characteristics?

Q Difference between python 2 & python 3

Q Call by value Call by reference.

A1 Python is a high level programming language known for its simplicity & readability. It was created by guido van rossum & first released in 1991. It is used in web, development data analysis, AI & more

Key Characteristics

1 Readability & simplicity

- Easy to read syntax

2 Interpreted Language

- Executes code line by line.
- No need for compilation

3 Dynamically Typed

- No need to declared variable types.
- Types are inferred at runtime

4 Cross Platform

- Runs on various operating system like windows, macOS, & linux.

Differences Between Python 2 & Python 3

1 Print Statement :

- Python 2: print "Hello, World!" (print is a statement)
  Python 3 : print ("Hello, World!") (print is a function)

2 Integer Division:

Python 2: 5/2 results in 2 (integer division)

Python 3 5/2 results in 2.5 (true division) for integer division use 5//2 which results in 2

3 Unicode Support:-

Python 2: Strings are ASCII by default:
unicode strings require a 'u' prefix (eg, u"hello")

Python 3: Strings are unicode by default. Bytes require a 'b' prefix (eg b"hello").

4 Libraries & Compatibility

Python 2: Some older libraries may not be compatible with python 3.

Python 3: more libraries and updates are focused on python 3 compatibility.

Call by value vs Call by reference

Call by value -

- The method copies the actual value of an argument into the formal parameter of the function
- Changes made to the parameter inside the function do not affect the original value

Call by reference -

- The method copies the address of an argument into the formal parameter
- Changes made to the parameter inside the function affect the original argument.