

# INTERVIEW QUESTIONS FOR PYTHON -

## **1. What is Python? List some popular applications of Python in the world of technology.**

**Answer :-** Python is a widely-used general-purpose, high-level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code. It is used for:

- System Scripting
- Web Development
- Game Development
- Software Development
- Complex Mathematics

## **2. What are the benefits of using Python language as a tool in the present scenario?**

**Answer :-** The following are the benefits of using Python language:

- Object-Oriented Language
- High-Level Language
- Dynamically Typed language
- Extensive support Libraries
- Presence of third-party modules
- Open source and community development
- Portable and Interactive
- Portable across Operating systems

## **3. Is Python a compiled language or an interpreted language?**

**Answer :-** Actually, Python is a partially compiled language and partially interpreted language. The compilation part is done first when we execute our code and this will generate byte code internally this byte code gets converted by the Python virtual machine according to the underlying platform (machine +operating system).

#### 4. What does the '#' symbol do in Python?

**Answer :-** '#' is used to comment on everything that comes after on the line.

#### 5. What is the difference between a Mutable datatype and an Immutable data type?

**Answer :-** Mutable data types can be edited i.e., they can change at runtime. Eg – List, Dictionary, etc. Immutable data types cannot be edited i.e., they cannot change at runtime. Eg – String, Tuple, etc.

#### 6. How are arguments passed by value or by reference in Python?

**Answer :-** Everything in Python is an object and all variables hold references to the objects. The reference values are according to the functions; as a result, you cannot change the value of the references. However, you can change the objects if it is mutable.

#### 7. What is the difference between a Set and Dictionary?

**Answer :-** The set is an unordered collection of data types that is iterable, mutable and has no duplicate elements.

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#### 8. What is a pass in Python?

**Answer :-** Pass means performing no operation or in other words, it is a placeholder in the compound statement, where there should be a blank left and nothing has to be written there.

#### 9. How is Exceptional handling done in Python?

**Answer :-** There are 3 main keywords i.e. try, except, and finally which are used to catch exceptions and handle the recovering mechanism accordingly. Try is the block of a code that is monitored for errors. Except block gets executed when an error occurs.

The beauty of the final block is to execute the code after trying for an error. This block gets executed irrespective of whether an error occurred or not. Finally, block is used to do the required cleanup activities of objects/variables.

## 10. What is swap case function in Python?

**Answer :-** It is a string's function that converts all uppercase characters into lowercase and vice versa. It is used to alter the existing case of the string. This method creates a copy of the string which contains all the characters in the swap case. For Example:

```
String="GeeksforGeeks"  
string.swapcase() ---> "gEEKSFORgEEKS"
```

## 11. Difference between for loop and while loop in Python

**Answer :-** The “for” Loop is generally used to iterate through the elements of various collection types such as [List](#), [Tuple](#), [Set](#), and [Dictionary](#). Developers use a “for” loop where they have both the conditions start and the end. Whereas, the “while” loop is the actual looping feature that is used in any other programming language. Programmers use a Python while loop where they just have the end conditions.

## 12. What is a break, continue, and pass in Python?

**Answer :-** The [break statement](#) is used to terminate the loop or statement in which it is present. After that, the control will pass to the statements that are present after the break statement, if available.

[Continue](#) is also a loop control statement just like the break statement. continue statement is opposite to that of the break statement, instead of terminating the loop, it forces to execute the next iteration of the loop.

[Pass](#) means performing no operation or in other words, it is a placeholder in the compound statement, where there should be a blank left and nothing has to be written there.

## 13. Differentiate between List and Tuple?

**Answer :-** Let's analyze the differences between List and Tuple:

### List

- Lists are Mutable datatype.
- Lists consume more memory
- The list is better for performing operations, such as insertion and deletion.
- The implication of iterations is Time-consuming

### Tuple

- Tuples are Immutable datatype.
- Tuple consumes less memory as compared to the list
- A Tuple data type is appropriate for accessing the elements
- The implication of iterations is comparatively Faster

#### 14. How do you debug a Python program?

**Answer :-** `$ python -m pdb python-script.py`

#### 15. What are Iterators in Python?

**Answer :-** In Python, iterators are used to iterate a group of elements, containers like a list. Iterators are collections of items, and they can be a list, tuples, or a dictionary. Python iterator implements `__itr__` and the `next()` method to iterate the stored elements. We generally use loops to iterate over the collections (list, tuple) in Python.

#### 16. Does Python supports multiple Inheritance?

**Answer :-** Python does support multiple inheritances, unlike Java. Multiple inheritances mean that a class can be derived from more than one parent class.

#### 17. Define encapsulation in Python?

**Answer :-** Encapsulation means binding the code and the data together. A Python class is an example of encapsulation.

#### 18. How do you do data abstraction in Python?

**Answer :-** Data Abstraction is providing only the required details and hides the implementation from the world. It can be achieved in Python by using interfaces and abstract classes.

#### 19. How to delete a file using Python?

**Answer :-** We can delete a file using Python by following approaches:

- `os.remove()`
- `os.unlink()`

#### 20. What are Python's built-in data types?

**Answer:** The built-in data types in Python include:

- ✦ **Numeric Types:** int, float, complex
- ✦ **Sequence Types:** list, tuple, range

- ✦ **Text Type:** str
- ✦ **Mapping Type:** dict
- ✦ **Set Types:** set, frozenset
- ✦ **Boolean Type:** bool
- ✦ **Binary Types:** bytes, bytearray, memory view

## 21. What is PEP 8?

**Answer:** PEP 8 is the style guide for Python code that outlines best practices for writing clean and readable code, such as naming conventions and indentation rules.

## 22. What are functions in Python? How do you define one?

**Answer:** Functions are reusable blocks of code that perform a specific task.

You define a function using the def keyword:

```
def my_function(param):  
    return param * 2
```

# Django Questions and Answers

## 1. What is Django?

**Answer:** Django is a high-level web framework for Python that promotes rapid development and clean, pragmatic design. It follows the MVT (Model-View-Template) architecture.

## 2. Explain the MVC architecture as it relates to Django.

**Answer:** In Django, the MVT architecture consists of:

- ✦ **Model:** Defines the data structure.
- ✦ **View:** Handles business logic and user requests.
- ✦ **Template:** Renders the HTML output to the user.

### 3.What are Django models?

**Answer:** Django models are Python classes that define the structure of your database. Each model corresponds to a table in the database and defines the fields and behaviors of the data.

### 4.What is the purpose of Django migrations?

**Answer:** Migrations are Django's way of propagating changes made to models (like adding fields) into the database schema. They allow you to create, modify, and delete database tables in a structured manner.



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