

PYTHON Interview questions.....

Basic Python Concepts:

- What is Python? What are its key features?
- Explain the difference between a list and a tuple in Python.
- How do you comment out multiple lines of code in Python?
- What is the purpose of the `__init__` method in a Python class?
- How are exceptions handled in Python? Explain the try-except block.
- What is a virtual environment in Python and why is it used?

Data Types and Operators:

- Discuss the differences between mutable and immutable objects in Python.
- Explain the differences between `==` and `is` operators in Python.
- How does garbage collection work in Python?
- Describe the purpose and usage of the `enumerate()` function.
- What is list comprehension? Provide an example.

Object-Oriented Programming (OOP):

- Define encapsulation, inheritance, and polymorphism in the context of OOP.
- How do you create a new instance of a class in Python?
- Explain the difference between instance variables and class variables.
- What is method overloading? Does Python support it?
- Describe the concept of method overriding with an example.
- What is the difference between `__str__()` and `__repr__()` methods?
- How does multiple inheritance work in Python? Mention any issues associated with it.

Functions and Modules:

- Explain the purpose of the `*args` and `**kwargs` in function definitions.
- What is a lambda function? Provide an example of its usage.
- How are modules used in Python? How do you import a module?
- What is the purpose of the `if __name__ == "__main__":` block in a Python script?

File Handling:

- Explain the difference between reading a file using `read()`, `readline()`, and `readlines()`.
- How do you open and write to a file in Python?
- What is the purpose of the `with` statement in file handling?

Advanced Concepts:

- Describe the Global Interpreter Lock (GIL) in Python and its impact on multithreading.
- What are decorators in Python? Provide an example of how they are used.
- Explain the concept of generators and the use of the `yield` keyword.
- How can you handle and raise custom exceptions in Python?
- What is a closure in Python? Provide an example.
- Discuss the differences between list comprehension and generator expression.