

1. What is dynamic typing in Python?

Dynamic typing means the variable type is decided at runtime and can change without explicit declaration.

2. What is the difference between mutable and immutable data types?

Mutable data types can be changed after creation, while immutable data types cannot be modified.

3. What are local and global variables?

Local variables are defined inside a function and accessible only within it, whereas global variables are defined outside and accessible throughout the program.

4. What is the purpose of the return statement in a function?

The return statement sends a value back to the caller and ends the function execution.

5. What is list comprehension?

List comprehension is a concise way to create lists using a single line of code.

6. Difference between break, continue, and pass

break exits the loop, continue skips the current iteration, and pass does nothing and acts as a placeholder.

7. What is recursion? Give a simple example.

Recursion is a function calling itself to solve a problem.

Example: `factorial(n) = n * factorial(n-1)`

8. What is a lambda function?

A lambda function is an anonymous, single-expression function written using the lambda keyword.

9. What is the difference between is and ==?

`is` checks object identity, while `==` checks value equality.

10. What are docstrings and why are they important?

Docstrings are strings used to document functions, classes, or modules and help in understanding and maintaining code.