1. What is the purpose of return statement in python Functions? What happens if a function does not have a returned statement?
2. What is the difference between global and local variables?
3. What is recursive function?
4. What is a lambda function in python?

**Purpose of the return Statement in Python Functions:**

The return statement in Python functions is used to:

Send back a value to the caller.

End the execution of the function.

Allow functions to be reusable by returning results.

**Example of return Statement:**

def add(a, b):

return a + b # Returns the sum

result = add(5, 3)

print(result)

OUTPUT: 8

**What Happens If a Function Does Not Have a return Statement?**

If a function does not have a return statement, it implicitly returns None.

|  |  |
| --- | --- |
| **GLOBAL VARIABLE** | **LOCAL VARIABLE** |
| Available throughout the program | Only available inside the function where it is defined |
| Outside any function | Inside a function |
| Exists until the program ends | Exists only during function execution |

**What is a Recursive Function?**

A recursive function is a function that calls itself to solve a problem.

Example: Factorial Using Recursion

def factorial(n):

if n == 1:

return 1

return n \* factorial(n - 1) # Function calls itself

print(factorial(5)) # Output: 120

**Key Features of Recursion:**

Base Case: Stops recursion (if n == 1).

Recursive Case: Calls itself (factorial(n - 1)).

**What is a Lambda Function in Python**?

A lambda function is an anonymous (nameless) function in Python defined using lambda keyword. It is typically used for short, simple operations.

square = lambda x: x \* x print(square(5))