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))
```