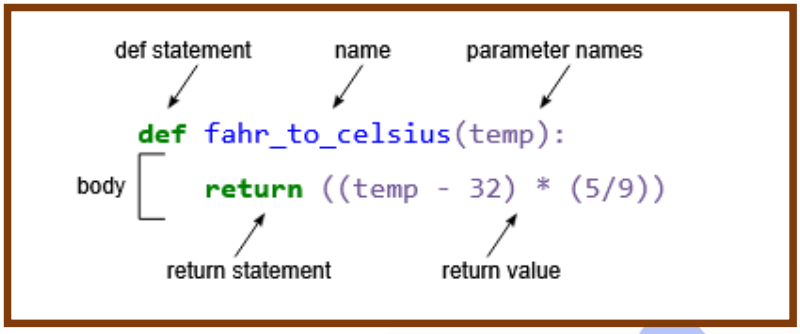
Return Statement in Python

In Python, the return statement is used inside a function to send a result back to the caller of that function. It ends the function's execution and optionally passes back a value.



Basic Syntax

```
def function_name():
    return value
```

When Python executes return, it:
1. Stops running the function.
2. Sends the value after return back to the caller.

Why to use Return Statement?

- Exits a Function: return immediately ends the function and exits back to the caller.
- Sends Data Back: It sends a value (or multiple values) from a function to where it was called.
- Allows Reusability: Functions that return values can be reused in different parts of the code with different inputs.
- Enables Testing: Return values make it easier to test functions because you can check the output directly.
- Supports Calculations: Useful in mathematical or logical functions that compute a result and send it back.

Return Statement in Python

Solved Example 1: **Function with Return**

```
def add(a, b):
    result = a + b
    return result

sum_value = add(5, 3)
print("Sum is:", sum_value)
```

Output:
Sum is: 8

NOTE: Here, the return statement sends result back to the variable sum_value.

Solved Example 2: Function without Return

```
def greet():
    print("Hello, welcome!")

message = greet()
print(message)
```

Output:
Hello, welcome!
None

NOTE: Since there's no return, Python automatically returns None.

Solved Example 3: Returning Multiple Values

You can return more than one value (as a tuple).

```
def calc(a, b):
    return a + b, a - b

add_result, sub_result = calc(10, 5)
print("Addition:", add_result)
print("Subtraction:", sub_result)
```

Output:
Addition: 15
Subtraction: 5

Solved Example 4: Using Return in Condition

```
def check_even(num):
    if num % 2 == 0:
        return "Even"
    else:
```

Return Statement in Python

```
    return "Odd"

print(check_even(10))
print(check_even(7))
```

Output:
Even
Odd

Assignment

Ques 1: Write a Python function named square_num() that takes a number as input and **returns its square**.

Example:
Input: 5
Output: 25

Ques 2: Write a function called calculate() that takes two numbers and **returns their sum, difference, and product**.

Example:
Input: 10, 4
Output: 14, 6, 40

Ques 3: Create a function greet_user(name) that returns a greeting message like **"Hello, XYZ! Welcome back."**
Store the returned message in a variable and print it.

Ques 4: Write a Python function check_age(age) that returns:
- "Minor" if age < 18
- "Adult" if age >= 18

Example:
Input: 16 → **Output:** Minor
Input: 25 → **Output:** Adult