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Nested if Statement in Python

What is if...elif...else in Python?

In Python, the `if...elif...else` statement allows you to test multiple conditions in order, one after another.

The first condition that evaluates to `True` is executed, and the rest are `skipped`.

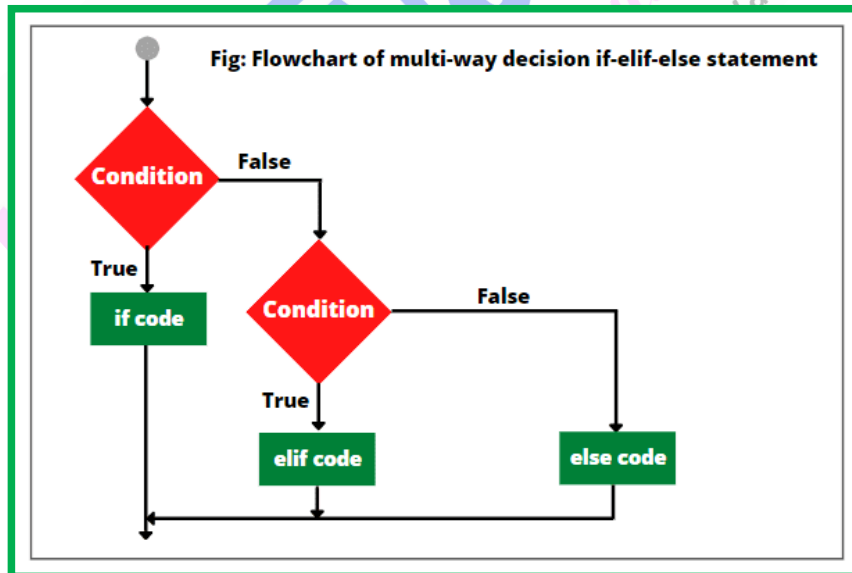
- `elif` lets you check multiple conditions after the initial `if`.
- It's used between `if` and `else`.
- It prevents you from writing multiple separate `if` statements.

Syntax of `elif`

```
if condition1:
    # Runs if condition1 is True
elif condition2:
    # Runs if condition1 is False and condition2 is True
elif condition3:
    # Runs if all above are False and condition3 is True
else:
    # Runs if none of the conditions are True
```

Why use `elif`?

When you're checking more than two conditions, using just `if` and `else` isn't enough. `elif` allows you to test multiple mutually exclusive conditions – meaning, only one block will run.



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Solved Example 1: Grading Systems

marks = 78

```
if marks >= 90:  
    print("Grade: A+")  
elif marks >= 80:  
    print("Grade: A")  
elif marks >= 70:  
    print("Grade: B")  
elif marks >= 60:  
    print("Grade: C")  
else:  
    print("Grade: F")
```

Output:
Grade: B

Explanation:

• 78 is not ≥ 90 or ≥ 80 , but it is ≥ 70 ,
so the code prints "Grade: B".

Solved Example 2: Checking Temperature Levels

temperature = 32

```
if temperature >= 35:  
    print("It's very hot today!")  
elif temperature >= 25:  
    print("The weather is pleasant.")  
elif temperature >= 15:  
    print("It's a bit cool.")  
else:  
    print("It's cold, wear a jacket!")
```

Output:
The weather is pleasant.

Explanation:

Python checks each condition in order until one is True – here, the **second condition** is True.

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Solved Example 3: Comparing Three Numbers

a = 10
b = 20
c = 15

```
if a > b and a > c:  
    print("a is the largest number.")  
elif b > a and b > c:  
    print("b is the largest number.")  
else:  
    print("c is the largest number.")
```

Output:

b is the largest number.

Explanation:

Out of 10, 20, and 15 → b is the greatest, so the elif part runs.

Solved Example 4: Find Largest of three number, numbers entered by User

```
a = float(input("Enter first number: "))  
b = float(input("Enter second number: "))  
c = float(input("Enter third number: "))  
  
if a >= b and a >= c:  
    print(f"{a} is the largest number.")  
elif b >= a and b >= c:  
    print(f"{b} is the largest number.")  
else:  
    print(f"{c} is the largest number.")
```

```
Enter first number: 78.9  
Enter second number: 67.5  
Enter third number: 56.67  
78.9 is the largest number.
```

=== Code Execution Successful ===

Assignment

Ques 1-Write a Python program that simulates a simple ATM withdrawal process. The program should:

- Ask the user to enter their account balance (a positive number).
- Ask the user to enter the amount they want to withdraw.
- Use if-elif-else statements to check these conditions:
- If the withdrawal amount is greater than the account balance, print: "Insufficient funds"
- Else if the withdrawal amount is less than or equal to zero, print: "Invalid withdrawal amount"

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- Else, subtract the withdrawal amount from the balance and print:
"Withdrawal successful. Remaining balance: X"
(where X is the remaining balance)

Ques 2- Write a program that asks the user to enter the color of a traffic light (red, yellow, or green) and then:

- If the color is red, print "Stop".
- If the color is yellow, print "Get Ready".
- If the color is green, print "Go".
- For any other input, print "Invalid color".

Ques 3- Create a simple calculator that asks the user to enter two numbers and an operator (+, -, *, /). Based on the operator:

- Perform the calculation and print the result.
- If the operator is invalid, print "Invalid operator".

