Day 3 of 6 weeks Python course:

🕒 Time Breakdown (2 Hours)

Time Slot	Task
0:00 - 0:20	Recap of Operators & Practice
0:20 - 0:50	Conditional Statements (`if`, `else`, `elif`)
0:50 - 1:10	Nested and Multiple Conditions
1:10 - 1:30	Logical Operators in Conditions (`and`, `or`, `not`)
1:30 - 2:00	Mini-Project: Simple Grading System

1️⃣ Recap of Operators:

In [5]:
```
a = 10
b = 3

print(a + b)  # Addition: 13
print(a - b)  # Subtraction: 7
print(a * b)  # Multiplication: 30
print(a / b)  # Division: 3.333
print(a // b) # Floor Division: 3
print(a % b)  # Modulus: 1
print(a ** b) # Exponentiation: 10^3 = 1000
a = 10
b = 3

print(a + b)  # Addition: 13
print(a - b)  # Subtraction: 7
print(a * b)  # Multiplication: 30
print(a / b)  # Division: 3.333
print(a // b) # Floor Division: 3
print(a % b)  # Modulus: 1
print(a ** b) # Exponentiation: 10^3 = 1000
```

```
13
7
30
3.3333333333333335
3
1
1000
13
7
30
3.3333333333333335
3
1
1000
```

Assignment Operators:

In [8]:
```
num = 10
num += 5  # Same as num = num + 5
print(num)  # Output: 15
```

```
15
```

2 Conditional Statements(if, else, elif): What is a Conditional Statement? A conditional statement helps make decisions in programs using if, elif, and else. Basic if-else Example:

In [12]:
```
age = int(input("Enter your age: "))

if age >= 18:
    print("You are eligible to vote.")
else:
    print("Sorry, you must be 18 or older to vote.")
```

```
You are eligible to vote.
```

How It Works: If the age is 18 or more, it prints "You are eligible to vote." Otherwise, it prints "Sorry, you must be 18 or older to vote." Using elif (Else If):

In [15]:
```
score = int(input("Enter your score: "))

if score >= 90:
    print("Grade: A")
elif score >= 75:
    print("Grade: B")
elif score >= 60:
    print("Grade: C")
else:
    print("Grade: F")
```

```
Grade: A
```

3 Nested and Multiple Conditions: Nested if (if inside another if):

In [19]:
```
age = int(input("Enter your age: "))

if age >= 18:
    print("You are an adult.")
    if age >= 65:
        print("You are a senior citizen.")
else:
    print("You are a minor.")
```

```
You are an adult.
```

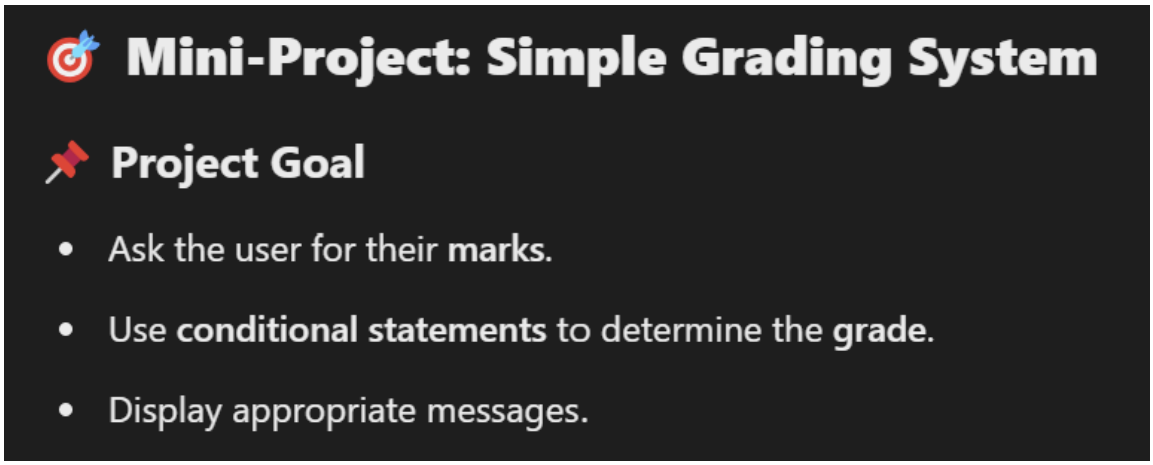
How It Works: If age >= 18, it prints "You are an adult." If age >= 65, it prints "You are a senior citizen." If age < 18, it prints "You are a minor." Checking Multiple Conditions (and, or, not):

In [23]:
```
marks = int(input("Enter your marks: "))

if marks >= 60 and marks < 80:
    print("You passed with a good score!")
elif marks >= 80 and marks <= 100:
    print("Excellent performance!")
else:
    print("You need to work harder.")
```

```
You passed with a good score!
```

How It Works: and → Both conditions must be True. or → At least one condition must be True. not → Reverses a condition.



In [27]:
```python
# Step 1: Get user input
marks = int(input("Enter your marks: "))

# Step 2: Apply conditions
if marks >= 90:
    grade = "A"
    message = "Excellent work! Keep it up!"
elif marks >= 75:
    grade = "B"
    message = "Great job! You can aim even higher!"
elif marks >= 60:
    grade = "C"
    message = "Good effort! Try to improve."
elif marks >= 40:
    grade = "D"
    message = "You passed, but you need to work harder."
else:
    grade = "F"
    message = "Failed. Don't give up, keep studying!"

# Step 3: Print the result
print("\n--- Report Card ---")
print("Marks:", marks)
print("Grade:", grade)
print("Feedback:", message)
```

```
--- Report Card ---
Marks: 98
Grade: A
Feedback: Excellent work! Keep it up!
```

Step-by-Step Explanation

📌 Step 1: Taking User Input

python Copy Edit

```python
marks = int(input("Enter your marks: "))
```

- `input()` collects the user's marks.
- `int()` ensures **marks are stored as an integer**.

📌 Step 2: Applying Conditions

python Copy Edit

```python
if marks >= 90:
    grade = "A"
    message = "Excellent work! Keep it up!"
elif marks >= 75:
    grade = "B"
    message = "Great job! You can aim even higher!"
elif marks >= 60:
    grade = "C"
    message = "Good effort! Try to improve."
elif marks >= 40:
    grade = "D"
    message = "You passed, but you need to work harder."
else:
    grade = "F"
    message = "Failed. Don't give up, keep studying!"
```

💡 How It Works:

- The program **checks marks** and assigns a **grade**.
- It also provides **motivational feedback**.

📌 Step 3: Printing the Result

python Copy Edit

```python
print("\n--- Report Card ---")
print("Marks:", marks)
print("Grade:", grade)
print("Feedback:", message)
```

✅ Example Output:

yaml Copy Edit

```yaml
Enter your marks: 82

--- Report Card ---
Marks: 82
Grade: B
Feedback: Great job! You can aim even higher!
```

Summary of Day 3 ✔ Learned Conditional Statements (if, elif, else) ✔ Understood Logical Operators (and, or, not) ✔ Completed a Mini-Project: Grading System