PYTHON-BASIC TO INTERMEDIATE

Learn with N@ima

Day 7

Conditional Expression

Python If ... Else

Python supports the usual logical conditions from mathematics:

- Equals: a == b
- Not Equals: a != b
- Less than: a < b
- Less than or equal to: a <= b
- Greater than: a > b
- Greater than or equal to: a >= b

These conditions can be used in several ways, most commonly in "if statements" and loops.

Python If ... Else

- An "if statement" is written by using the if keyword.
- The elif keyword is pythons way of saying "if the previous conditions were not true, then try this condition".
- The else keyword catches anything which isn't caught by the preceding conditions.

```
a = 200
b = 33
if b > a:
  print("b is greater than a")
elif a == b:
  print("a and b are equal")
else:
  print("a is greater than b")
```

Short Hand If ... Else

Short Hand If

- If you have only one statement to execute, you can put it on the same line as the if statement.
- `if a > b: print("a is greater than b")`

Short Hand If ... Else

- If you have only one statement to execute, one for if, and one for else, you can put it all on the same line:
- `print("A") if a > b else print("B")`
- This technique is known as **Ternary Operators,** or **Conditional Expressions**.

Logical Operators

And

- The and keyword is a logical operator, and is used to combine conditional statements:
- Test if a is greater than b, AND if c is greater than a:
-
  ```
  a = 200
  b = 33
  c = 500
  if a > b and c > a:
    print("Both conditions are True")
  ```

Or

- The or keyword is a logical operator, and is used to combine conditional statements:
- Test if a is greater than b, OR if a is greater than c:
-
  ```
  if a > b or a > c:
    print("At least one of the conditions is True")
  ```

Nested If

Nested If

- You can have if statements inside if statements, this is called nested if statements.

```
if x > 10:
  print("Above ten,")
  if x > 20:
    print("and also above 20!")
  else:
    print("but not above 20.")
```

Pass Statement

The pass Statement

if statements cannot be empty, but if you for some reason have an if statement with no content, put in the pass statement to avoid getting an error.

```
a = 33
b = 200

if b > a:
  pass
```

Practice Work

1. Write a program to find greatest of four numbers entered by the user.
2. Write a program to find out whether a student is pass or fail, if it requires total 40% and at least 33% in each subject to pass. Assume 3 subjects and take marks as an input from the user.
3. Write a program which finds out whether a given name is present in a list or not.
4. Write a program to calculate the grade of a student from his marks from the following scheme:

    80-100 --> A+

    70-79 --> A

    60-69 --> B

    50-59 --> C

    40-49 --> D

    <49 --> F

THANK YOU