Python Online Free Ramzan Course 2025
Taught by: Shaida Muhammad

Conditional Statements

Day 5 - Python Basics

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Agenda

1 `if` statement

2 `if-else` statement

3 `if-elif-else` statement

4 Nested conditions

5 Hands-on practice

What are Conditional Statements?

- **Definition:** Conditional statements allow you to execute code based on whether a condition is `True` or `False`.
- **Why use them?**
  - Make decisions in your program.
  - Control the flow of your code.
- **Example:**

```
if age > 18:
    print("You are an adult.")
```

if Statement

- **Syntax:**

```
if condition:
    # Code to execute if condition is True
```

- **Example:**

```
age = 20
if age > 18:
    print("You are an adult.")
```

- **Explanation:**
  - The code inside the `if` block runs only if the condition (`age > 18`) is `True`.

if-else Statement

- **Syntax:**

```
if condition:
    # Code to execute if condition is True
else:
    # Code to execute if condition is False
```

- **Example:**

```
age = 15
if age > 18:
    print("You are an adult.")
else:
    print("You are a minor.")
```

- **Explanation:**
  - The `else` block runs if the condition in `if` is `False`.

if-elif-else Statement

- **Syntax:**

```
if condition1:
    # Code to execute if condition1 is True
elif condition2:
    # Code to execute if condition2 is True
else:
    # Code to execute if all conditions are False
```

- **Example:**

```
marks = 75
if marks >= 90:
    print("Grade: A")
elif marks >= 80:
    print("Grade: B")
elif marks >= 70:
    print("Grade: C")
else:
    print("Grade: D")
```

- **Explanation:**
  - `elif` is short for "else if." It checks multiple conditions in order.

Nested Conditions

- **Definition:** Placing one `if` statement inside another.
- **Syntax:**

```
if condition1:
    if condition2:
        # Code to execute if both conditions are True
```

- **Example:**

```
age = 20
country = "USA"
if age > 18:
    if country == "USA":
        print("You are eligible to vote in the USA.")
```

- **Explanation:**
  - The inner `if` statement is checked only if the outer `if` condition is `True`.

Hands-On Practice

- **Task 1:** Write a program to check if a number is positive, negative, or zero.

```
num = float(input("Enter a number: "))
if num > 0:
    print("Positive")
elif num < 0:
    print("Negative")
else:
    print("Zero")
```

- **Task 2:** Write a program to check if a person is eligible to vote (age >= 18).

```
age = int(input("Enter your age: "))
if age >= 18:
    print("You are eligible to vote.")
else:
    print("You are not eligible to vote.")
```

- **Task 3:** Write a program to assign grades based on marks (A, B, C, D).

```
marks = float(input("Enter your marks: "))
if marks >= 90:
    print("Grade: A")
elif marks >= 80:
    print("Grade: B")
elif marks >= 70:
    print("Grade: C")
else:
    print("Grade: D")
```

Recap

- **`if` statement:** Executes code if a condition is True.
- **`if-else` statement:** Executes one block if True, another if False.
- **`if-elif-else` statement:** Checks multiple conditions in order.
- **Nested conditions:** if statements inside other if statements.

Homework

1. Write a program to check if a number is even or odd.
2. Write a program to find the largest of three numbers.
3. Write a program to check if a year is a leap year.

Q&A

- Do you have any questions?
- Share your thoughts.

Closing

Next class: Loops (for and while)