

Chapter 06 Conditional Statements

Python Notes by Wahab

Conditional Statements

Conditional statements in Python allow your code to make decisions based on certain conditions. This makes your programs more dynamic and intelligent. Here's a breakdown of the key concepts.

if Statements

The if statement is the most basic conditional statement. It executes a block of code only if a specific condition is True

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

Example

```
age = 25  
  
if age >= 18:  
    print("You are eligible to vote.")
```

else Statements:

The `else` statement provides an alternative block of code to execute if the `if` condition is `False`.

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

Relational Operators:

Relational operators are used to compare two values. The result of a relational expression is either `True` or `False`.

Operator	Description	Example
<code>==</code>	Equal to	<code>a == b</code>
<code>!=</code>	Not equal to	<code>a != b</code>

Operator	Description	Example
>	Greater than	a > b
<	Less than	a < b
>=	Greater than or equal to	a >= b
<=	Less than or equal to	a <= b

Logical Operators:

Logical operators are used to combine multiple conditions in conditional statements. They return `True` or `False` based on the logic applied to the expressions.

Operator	Description	Example
and	Returns <code>True</code> if both conditions are <code>True</code>	a > b and c < d
or	Returns <code>True</code> if at least one condition is <code>True</code>	a > b or c < d
not	Reverses the result; returns <code>True</code> if the condition is <code>False</code>	not (a > b)

Example:

```
temperature = 25
is_raining = True

if temperature > 30 and is_raining:
    print("It's hot and raining. Stay inside!")
elif temperature > 30 or is_raining:
    print("It's either hot or raining. Be careful!")
else:
    print("Enjoy the weather!")
```

elif Statements:

The `elif` statement (short for "else if") allows you to check multiple conditions in sequence. It only executes if the previous `if` or `elif` conditions are `False`.

Example

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

NOTE: There can be a unlimited elif stamtement