

# Python Conditional Statements

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**Conditional Statement in Python performs different actions depending on whether a specific Boolean expression evaluates to true or false. Conditional statements are handled by IF statements in Python.**

## **1. if Statement**

An "if statement" is written by using the if keyword.

Example

If statement:

```
a = 33
b = 200
if b > a:
    print("b is greater than a")
```

In this example we use two variables, a and b, which are used as part of the if statement to test whether b is greater than a. As a is 33, and b is 200, we know that 200 is greater than 33, and so we print to screen that "b is greater than a".

## **2. Indentation**

Python relies on indentation (whitespace at the beginning of a line) to define scope in the code. Other programming languages often use curly-brackets for this purpose.

Example

If statement, without indentation (will raise an error):

```
a = 33
b = 200
if b > a:
print("b is greater than a") # you will get an error
```

## **3. Elif**

The elif keyword is python's way of saying "if the previous conditions were not true, then try this condition".

Example

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

In this example a is equal to b, so the first condition is not true, but the elif condition is true, so we print to screen that "a and b are equal".

#### 4. Else

The else keyword catches anything which isn't caught by the preceding conditions.

Example

```
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")
```

In this example a is greater than b, so the first condition is not true, also the elif condition is not true, so we go to the else condition and print to screen that "a is greater than b".

You can also have an else without the elif:

Example

```
a = 200
b = 33
if b > a:
    print("b is greater than a")
else:
    print("b is not greater than a")
```

#### 5. Short Hand If

If you have only one statement to execute, you can put it on the same line as the if statement.

Example

One line if statement:

```
if a > b: print("a is greater than b")
```

#### 6. 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:

Example

One line if else statement:

```
a = 2
b = 330
print("A") if a > b else print("B")
```

## 7. Nested If

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

Example

```
x = 41
```

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

## 8. 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.

Example

```
a = 33
b = 200
```

```
if b > a:
    pass
```

## 9. Coding Questions

1. Write a program to check if the last digit of a number is divisible by 3 or not
2. Write a program to check whether a person is eligible for voting or not? (Accept age from user)
3. Write a program to display "Hello" if a number entered by user is a multiple by 5 and is greater than 10 otherwise print "Bye"
4. Write a program to accept number from 1-7 and display the name like 1--> Sunday, 2 for Monday and so on..
5. Write a program to accept the cost price of a bike and display the road tax to be paid according to following criteria

Cost price	Tax
>100000	15%
>50k and <= 1lakh	10%
<=50k	5%

6. Write a program to calculate the electricity bill (accept the number of units consumed from the user) according to following criteria

Units	Price
First 100 units	no charge
Next 100 units	Rs 5 per unit
After 200 units	Rs 10 per unit

For example if consumed units are 350 then total bill amount is 2000.