

Conditions in Python

Comparison Operators

Comparison operations compare some value or operand and, based on a condition, they produce a Boolean. When comparing two values you can use these operators:

- equal: ==
- not equal: !=
- greater than: >
- less than: <
- greater than or equal to: >=
- less than or equal to: <=

```
In [2]: Marks = 60

if Marks > 59:
    print(f"Result of {Marks}:", "Passed")
else:
    print(f"Result of {Marks}:", "Failed")
```

Result of 60: Passed

```
In [3]: Marks = int(input("Enter Marks: "))

if Marks % 2 == 0:
    print("Even")
else:
    print("Odd")
```

Enter Marks: 77
Odd

```
In [5]: Marks = int(input("Enter Marks: "))
Name = input("Enter Name: ")

if Marks > 69:
    Grade = "B"
elif Marks > 59:
    Grade = "C"
else:
    Grade = "F"

print(f"Marks of {Name} are {Marks} and Grade is {Grade}")
```

Enter Marks: 85
Enter Name: Abc
Marks of Abc are 85 and Grade is B

```
In [6]: Marks = int(input("Enter Marks: "))

if Marks <= 59 and Marks >= 0:
    Grade = "F"
elif Marks <= 65 and Marks >= 60:
    Grade = "C"
elif Marks <= 71 and Marks >= 66:
    Grade = "C+"
else:
    Grade = "A"
```

```
else:  
    Grade = "???"  
  
print(Grade)
```

Enter Marks: 45
F

Logical operators

Sometimes you want to check more than one condition at once. For example, you might want to check if one condition and another condition is **True**. Logical operators allow you to combine or modify conditions.

- and
- or
- not

These operators are summarized for two variables using the following truth tables:

A	B	A & B
False	False	False
False	True	False
True	False	False
True	True	True

A	B	A or B
False	False	False
False	True	True
True	False	True
True	True	True

A	A!
False	True
True	False

```
In [7]: a = 9  
        b = 2  
        c = a + b  
        print(f"Sum of {a} and {b} is:", c)
```

Sum of 9 and 2 is: 11

```
In [8]: a = float(input("Enter 1st Number: "))
b = float(input("Enter 2nd Number: "))
c = a - b
print(f"Difference of {a} and {b} is:", c)
```

Enter 1st Number: 15
Enter 2nd Number: 11
Difference of 15.0 and 11.0 is: 4.0

```
In [9]: a = float(input("Enter 1st Number: "))
b = float(input("Enter 2nd Number: "))
Op = (input("Enter an Operator e.g. +,-,*: "))
if Op == "+":
    res = a + b
elif Op == "-":
    res = a - b
elif Op == "*":
    res = a * b
else:
    res = "N/A"

print(f"{a} {Op} {b} is", res)
```

Enter 1st Number: 8
Enter 2nd Number: 3
Enter an Operator e.g. +,-: +
8.0 + 3.0 is 11.0

```
In [10]: C = 30
F = C * 9/5 + 32
print(F, "F")
```

86.0 F

```
In [11]: F = 86
C = (F - 32) * 5/9
print(C, "C")
```

30.0 C

```
In [11]: T = 30
Conv = "F"
Res = T * 9/5 + 32
print(Res, Conv)
```

86.0 F

```
In [12]: T = 86
Conv = "C"
Res = (T - 32) * 5/9
print(Res, Conv)
```

30.0 C

```
In [ ]:
```