

Conditional Statements

July 2, 2022

1 Conditional Statements

1.0.1 Simple If Condition

```
[1]: x, y = 7, 5
      if x < y:
          print ('x is greater')
      print("Following Statement")
      # Prints x is greater
```

Following Statement

```
[2]: #indentation

      x, y = 7, 5

      if x > y:
          print ('x is greater')
      # Triggers SyntaxError: expected an indented block
      print("Outside")
```

x is greater

Outside

1.0.2 Nested If

```
[3]: x, y, z = 7, 4, 2

      if x > y:
          print("x is greater than y")
          if x < z:
              print("Not Excuted")
              print("x is greater than y and z")

      # Prints x is greater than y
      # Prints x is greater than y and z
```

x is greater than y

1.0.3 If - Else

```
[4]: x, y = 7, 5

if x < y:
    print('y is greater')
else:
    print("Else statement")
    print('x is greater')

# Prints x is greater
```

Else statement
x is greater

1.0.4 Elif

```
[5]: x, y = 5, 5

if x > y :
    print('x is greater')
elif x < y :
    print('y is greater')
elif x==y:
    print('x and y are equal')

# Prints x and y are equal
```

x and y are equal

1.0.5 elif_ladder - Chained conditionals

```
[6]: #BMI Program
height = float(input("What is your height in meters ? : "))
weight = float(input("What is your weight in kgs ?: "))

bmi = weight / height **2
print(bmi)
if bmi < 15:
    print("Very severely underweight")
elif bmi < 16:
    print("Severely underweight")
elif bmi < 18.5:
    print("Underweight")
elif bmi < 25:
    print("Normal (healthy weight)")
elif bmi < 30:
    print("Overweight")
elif bmi < 35:
```

```

        print("Obese Class I (Moderately obese)")
    elif bmi < 40:
        print("Obese Class II (Severely obese)")
    else:
        print("Obese Class III (Very severely obese)")

```

What is your height in meters ? : 5
 What is your weight in kgs ? : 70
 2.8
 Very severely underweight

1.0.6 Multiple Conditions - Usage of Logical Operators

[7]: *#and expression is True, if all the conditions are true.*

```

x, y, z = 7, 4, 2

if x > y and x > z:
    print('x is greater')

# Prints x is greater

```

x is greater

[8]: *#or expression is True, if at least one of the conditions is True.*

```

x, y, z = 7, 4, 9

if x > y or x > z:
    print('x is greater than y or z')

# Prints x is greater than y or z

```

x is greater than y or z

[9]: *#not expression is True, if the condition is false.*

```

x, y = 7, 5

if not x < y:
    print('x is greater')

# Prints x is greater

```

x is greater

1.1 Short Hand If - Single Statement

```
[10]: x, y = 7, 5
```

```
[11]: if x > y : print('x is greater')
```

x is greater

```
[12]: # Short Hand If - multiple statements
```

```
x, y = 7, 5
```

```
if x > y: print('x is greater') ; print('y is smaller') ; print('x and y are_↵  
↪not equal')
```

x is greater

y is smaller

x and y are not equal

1.1.1 Conditional Expressions (ternary operator) - Short Hand If-Else

```
[13]: x, y = 7, 5
```

```
print ('x is greater') if x > y else print ('y is greater')
```

x is greater

```
[14]: #You can also use it to select variable assignment.
```

```
x, y = 7, 15
```

```
max = x if x > y else y
```

```
print (max)
```

15

1.1.2 in operator

```
[15]: #The in operator is used to check if a value is present in a sequence_↵  
↪(list, tuple, string etc.)
```

```
# list
```

```
L = ['red', 'green', 'blue']
```

```
if "pink" in L:  
    print('yes')
```

```
else:  
    print('no')
```

no

```
[16]: # tuple
T = ('red', 'green', 'blue')
if 'red' in T:
    print('yes')
```

yes

```
[17]: # string
S = 'Hello, World!'

if 'Hello' in S:
    print('Yes')
```

Yes

1.1.3 Loops in Conditions

```
[18]: l=[20,10,25,8,9,20]

if sum(l)<50:
    print("Sum of list is less than 50")
else :
    for i in range(0,len(l)):
        print(l[i]) #or business logic

print(l)
```

```
20
10
25
8
9
20
[20, 10, 25, 8, 9, 20]
```

Any non-zero value or nonempty container is considered TRUE

```
[19]: # any non-zero value
if -3:
    print('True')
# Prints True
if 0:
    print("Flase")
# mathematical expression
x, y = 7, 5
if x + y:
    print('True')
# Prints True
```

```
# nonempty container
L = []
if L:
    print('True') # Prints True
```

True

True

```
[20]: #Guess The Output
a=11
if (a > 5 or a <=10):
    print("Hello")
else:
    print("Bye")
```

Hello

```
[21]: #Guess The Output
i = 3
j = 5
k = 7
#i = 25, j = 15, k = 17

if i<j:
    if j<k:
        i=j
    else:
        j=k
else:
    if j>k:
        j=i
    else:
        i=k
print(i,j,k)
```

5 5 7

1.2 To Do :

Write a program to check whether a person is eligible for voting or not. (accept age from user)

Write a program to check whether a number entered by user is even or odd.

Write a program to check whether a number is divisible by 7 or not.

Write a program to display “Hello” if a number entered by user is a multiple of five , otherwise print “Bye”.

Write a program to calculate the electricity bill (accept number of unit from user) according to the following criteria :

Unit

Price

First 100 units

no charge

Next 200 units

Rs 2 per unit

After 300 units

Rs 5 per unit

(if number of unit is 500 then total bill = $0 + 400 + 1000 = 1400$)

Write a program to check whether the last digit of a number(entered by user) is divisible by 3 or not.

Write a program to check whether an years is leap year or not.

Write a program to accept a number from 1 to 7 and display the name of the day like 1 for Sunday , 2 for Monday and so on

Write a program to find the lowest number out of two numbers excepted from user

Write a program to find the Greatest Number Among five Numbers using Nested If Else

Write a program to whether a number (accepted from user) is divisible by 2 and 3 both.

Write a program to check a character is vowel or not.

Accept the following from the user and calculate the percentage of class attended: 1.Total number of working days 2.Total number of days for absent

Accept three sides of a triangle and check whether it is an equilateral, isosceles or scalene triangle

Write a program to accept two numbers and mathematical operators and perform operation accordingly.

Accept three sides of triangle and check whether the triangle is possible or not.(triangle is possible only when sum of any two sides is greater than 3rd side)

Write a program to return the decimal part of a number. If decimal part is zero function should return this string: "INTEGER"

Write a program that counts the number of times a letter given by user in a given string.

A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years.Ask user for their salary and year of service and print the net bonus amount.

Take values of length and breadth of a rectangle from user and check if it is square or not.

© **Nitheesh Reddy**