

MIT WORLD PEACE UNIVERSITY

Python Programming  
Second Year B. Tech, Semester 4

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LEARNING ABOUT IF ELSE STATEMENTS IN  
PYTHON

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ASSIGNMENT No. 1

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February 4, 2023

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## 1 Aim

To Write a python program to find largest of three numbers.

## 2 Objectives

1. To learn and Implement different types of If-else statements.

## 3 Problem Statement

Learn different kinds of If statements in python, and understand some Data Types in Python.

## 4 Theory

### 4.1 Decision Making

Following is the general form of a typical decision making structure found in most of the programming languages.

```
if condition:
    statement(s)
elif condition:
    statement(s)
else:
    statement(s)
```

Python programming language assumes any non-zero and non-null values as *true*, and if it is either zero or null, then it is assumed as *false* value.

Python programming language provides the following types of decision making statements.

### 4.2 If Statements

An *if statement* consists of a boolean expression followed by one or more statements.

```
if expression:
    statement(s)
```

```
[1]: var = 100
      if var == 100:
          print("Value of expression is 100")
      print("Good bye!")
```

Value of expression is 100

Good bye!

### 4.3 If ... Else Statements

An *if statement* can be followed by an optional *else statement*, which executes when the boolean expression is *false*.

```
if expression:
    statement(s)
else:
    statement(s)
```

```
[3]: if var == 200:
      print("Value of expression is 200")
      else:
      print("Value of expression is not 200")
```

Value of expression is not 200

### 4.4 IF...ELIF...ELSE Statements

An *if* statement can be followed by an optional *elif* statement, which is short for *else if*. It is very useful to test various conditions for decision making.

```
if expression:
    statement(s)
elif expression:
    statement(s)
else:
    statement(s)
```

```
[9]: import random
      num = random.randint(-10, 10)
      print(num)
      if num > 0:
          print("Positive number")
      elif num < 0:
          print("Negative number")
      else:
          print("The value is Zero")
```

3  
Positive number

### 4.5 Nested IF Statements

You can use one *if* or *else* statement inside another *if* or *else* statement(s).

```
if expression:
    statement(s)
    if expression:
        statement(s)
    else:
        statement(s)
else:
    statement(s)
```

```
[11]: Number_of_passengers = 6
      Number_of_baggage = 2
      Security_check = True

      if Number_of_passengers > 5:
          print("The number of passengers is more than 5")
          if Number_of_passengers and Number_of_baggage > 5:
              print("The number of passengers and baggage is more than 5")
          else:
              print("The number of passengers and baggage is less than 5")
```

The number of passengers is more than 5

The number of passengers and baggage is less than 5

## 5 Platform

**Operating System:** Arch Linux x86-64

**IDEs or Text Editors Used:** Visual Studio Code with Jupyter

**Interpreter:** python 3.10.8

## 6 Libraries Used with pip

No additional Libraries are used with pip. The only libraries used are the default libraries that come with python.

## 7 Input

1. Take 3 numbers from the User.

## 8 Output

1. The Largest of those numbers.

## 9 Code

```
[1]: # splitting the input string into a list of strings and then converting each
      _string into an integer
      (a, b, c) = [int(i) for i in input("Enter 3 Numbers: ").split()]
      print("The Numbers that you have entered are: ", a, b, c)

      # checking the largest number
      if (a >= b and a >= c):
          print("The largest number is:", a)
```

```
elif b >= a and b >= c:  
    print("The largest number is: ", b)  
  
else:  
    print("The largest number is: ", c)
```

The Numbers that you have entered are: 1 2 3

The largest number is: 3

## **10 Conclusion**

Studied implementation of different forms of if...else statements using python programming.

## 11 FAQ

1. Describe following logical and relational operators with suitable examples.

Logical Operators: and, or, not

Relational Operators: ==, !=, >, <, >=, <=

**Answer:**

### Logical Operators:

*and*: This operator is used to check if both the conditions are true.

*or*: This operator is used to check if any one of the conditions is true.

*not*: This operator is used to check if the condition is false.

### Relational Operators:

*==*: This operator is used to check if the two operands are equal.

*!=*: This operator is used to check if the two operands are not equal.

*>*: This operator is used to check if the left operand is greater than the right operand.

*<*: This operator is used to check if the left operand is less than the right operand.

*>=*: This operator is used to check if the left operand is greater than or equal to the right operand.

*<=*: This operator is used to check if the left operand is less than or equal to the right operand.

**Example for All the above mentioned Operators are:**

```
1      # Logical Operators
2      a = 10
3      b = 20
4      c = 30
5      if a > b and a > c:
6          print("a is the largest number")
7      elif b > a or b > c:
8          print("b is greater than a or b is greater than c")
9
10     # Relational Operators
```

```
11 a = 10
12 b = 20
13 if a == b:
14     print("a and b are equal")
15 else:
16     print("a and b are not equal")
17
18 if a != b:
19     print("a and b are not equal")
20 else:
21     print("a and b are equal")
22
23 if a > b:
24     print("a is greater than b")
25 else:
26     print("a is less than b")
27
28 if a < b:
29     print("a is less than b")
30 else:
31     print("a is greater than b")
32
33 if a >= b:
34     print("a is greater than or equal to b")
35 else:
36     print("a is less than b")
37
38 if a <= b:
39     print("a is less than or equal to b")
40 else:
41     print("a is greater than b")
42
```