If Statements

Decision making plays an important role during the execution of the program. These decision making is made by, considering the Boolean expression that is evaluated during the execution of program.

IF Statement

Syntax:

If condition:

Statement.

Example:

```
If True:
    print('true print')  #this statement will execute if condition is true.
```

Program 1:

```
var = input('Enter True or False ')
if (var == True):
    print('You have entered True')
if (var == False):
    print('You have entered False')
```

If I execute this program I will get output like:

Enter True or False True

You have entered True

Enter True or False False

You have entered False

If you enter True as input the decision making statement will change the program like the following as the conditional operation (var == True) will return True because var variable is equal to user input True

```
if (var == True):
        print('You have entered True')
if (var == False):
        print('You have entered False')
```

```
print('You have entered True')
```

If you enter False as input the decision making statement will change the program like the following as the conditional operation (var == False) will return True because var variable is equal to user input False

```
if (var == True):
        print('You have entered True')
if (var == False):
        print('You have entered False')
```

```
print('You have entered False')
```

IF …. Else statement:

Syntax:

if Condition:

Statement

else:

statement

NOTE: else does not have any conditional statements.

Example:

```
if True:
    print('true print') #executes if condition is true.
else:
    print('else print') #executes if condition is false.
```

Program 2:

```
var = input('Enter True or False ')
if (var == True):
    print('You have entered True')
else:
    print('You have entered False')
```

If I execute this program I will get output like:

Enter True or False True

You have entered True

Enter True or False False

You have entered False

If you enter True as input the decision making statement will change the program like the following as the conditional operation (var == True) will return True because var variable is equal to user input True

```
if (var == True):
        print('You have entered True')
else:
        print('You have entered False')
```

```
print('You have entered True')
```

If you enter False as input the decision making statement will change the program like the following as the conditional operation (var == True) will return False because var variable is equal to user input False

```
if (var == True):
        print('You have entered True')
else:
        print('You have entered False')
```

```
print('You have entered False')
```

IF … Elif … Else Statements

Syntax:

if condition:

Statement

elif condition:

Statement

else:

Statement

Example :

```
var = input('Enter 3 or 6 ')
if var == '3':
    print('You have entered 3')
elif var == '6':
    print('You have entered 6')
else:
    print('You did not enter 3 or 6 ')
```

If I execute the program I will get output like.

Enter 3 or 6 3

You have entered 3

Enter 3 or 6 6

You have entered 6

Enter 3 or 6 1

You did not enter 3 or 6

If you enter 3 as input then the decision making statement will change the program like the following because the value of var will be 3 and the condition of if statement (var == '3') will be true.

```
if var == '3':
        print('You have entered 3')
elif var == '6':
        print('You have entered 6')
else:
        print('You did not enter 3 or 6 ')
```

Print('you have entered 3')

If you enter 6 as input then the decision making statement will change the program like the following because the value of var will be 6 and the condition of elif statement (var == '6') will be true.

```
if var == '3':
        print('You have entered 3')
elif var == '6':
        print('You have entered 6')
else:
        print('You did not enter 3 or 6 ')
```

Print('you have entered 6')

If you enter 1 as input then the decision making statement will change the program like the following because the value of var will be 1 and the condition of if statement (var == ‘3’) and elif statement (var = = ‘6’) will be false.

```
if var == ‘3’:
        print(‘You have entered 3’)
elif var == ‘6’:
        print(‘You have entered 6’)
else:
        print(‘You did not enter 3 or 6 ‘)
```

Print(‘you did not enter 3 or 6)

Nested If … else statements

You can also write if statements within if statement.

Example :

```
var = input('Enter a number between 1 to 5')
if var in ['2','3','4']:
    if var == '2':
        print('You entered 2')
    elif var == '3':
        print('You entered 3')
    else:
        print('You entered 4')
else:
    print('You did not enter number between 1 to 5')
```

- Indicates the outer if statement flow.
- Indicates the inner if statement flow.

Output:

```
Enter a number between 1 to 5 3
You entered 3
Enter a number between 1 to 5 8
You did not enter number between 1 to 5
```