Python Programming - III

Making of Decisions

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Decision Making

- IF Statement

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The IF statement is similar to that of other languages. The if statement contains a logical expression using which the data is compared and a decision is made based on the result of the comparison.

<u>Example</u>

```
var1=1
if var1:
...        print("True")
```

WAP: To check the boolean value of variable, if it is 0 then print "Stay" else "Exit"

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```python
print("Exit? (0/1)")
r = int(input(":"))
if r:
    print("Exiting, Good bye!")
else:
    print("Stay")
```

The IF...ELIF...ELSE is simply an If else ladder that we have been learning from C, C++ and Java.

Example

```
num = int(input("Enter a Pos/Neg Number"))
if num == 0:
    print(num,"Number is Zero")
elif num >=1:
    print(num,"Number is Positive")
else:
    print(num,"Number is Negative")
```

WAP: To input Marks and to determine Class amongst
1. Fail,
2. Pass Class,
3. Second Class,
4. Higher Second Class,
5. First Class,
6. Distinction.

```python
marks = int(input("Enter your marks"))
if marks < 40:
    print("Class: Fail")
elif marks < 50:
    print("Class: Pass Class")
elif marks < 55:
    print("Class: Second Class")
elif marks < 60:
    print("Class: Higher Second Class")
elif marks < 66:
    print("Class: First Class")
else:
    print("Class: Distinction")
```

There may be a situation when you want to check for another condition after a condition resolves to true. In such a situation, you can use the nested if construct.

```python
a = int(input("Enter a Number"))

if a&1:
    print("The number is Odd")
else:
    print("The number is Even")
```

```python
year = int(input("Finding Leap Year \n Enter the year: "))

if year > 999:
    if year % 4 == 0:
        if year % 100 == 0:
            if year % 400 == 0:
                print("The Year ", year, "IS a Leap Year")
            else:
                print(year, " IS NOT a Leap Year")
        else:
            print("The Year ", year, "IS a Leap Year")
    else:
        print(year, " IS NOT a Leap Year")
else:
    print("Enter Year in 4 Digits only")
```

Single Statement Suits

The suit of IF clause is only in one line, it may go one single line with no else clause in it.

Tip: The Program can be written in one line or lesser number of line of codes by using ';' for seperating with only one ':' in a single line.

Example

```
if var>0: print("Value is Positive"); print("Else not
possible on same line")
```

Nothing great was ever achieved by taking a
BREAK