IOTA ACADEMY
Become Job Ready...

INTRODUCTION: PART - 3

The if...elif...else statement is used in Python for decision making.

0, None, Blank String("") and False are considered as False. Rest everything is considered as True.

Control flow: if

if statement

we use **if** when we want to make just one decision and ignore the rest.

if statement syntax:

```
if criteria:                        # don't forget to add colon here
    statement1                      # code
    statement2
    ...
    statementn
```

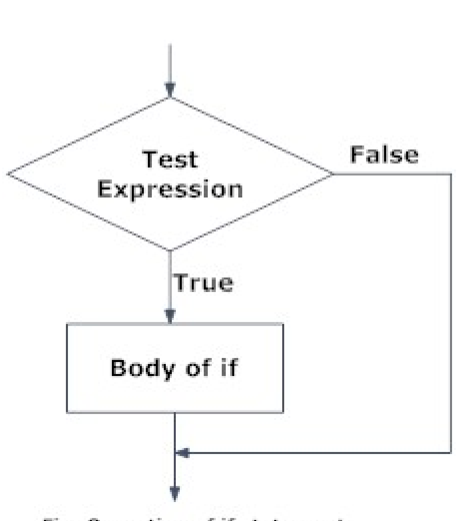

Fig: Operation of if statement

In [1]:
```
# example

x = int(input("Enter a number: "))
if x>10:
    print("x is greater than 10")

print("I am not under if condition")
```

```
Enter a number: 20
x is greater than 10
I am not under if condition
```

Control flow: if-else

if-else

we use if-else when we want to make 2 decision one when condition is true and second when condition is false

if-else statement syntax:

```
if criteria:                        # don't forget to add colon here
    statement1                      # code
    statement2
    ...
    statementn
else:
    statement1
    statement2
    ...
    statementn
```

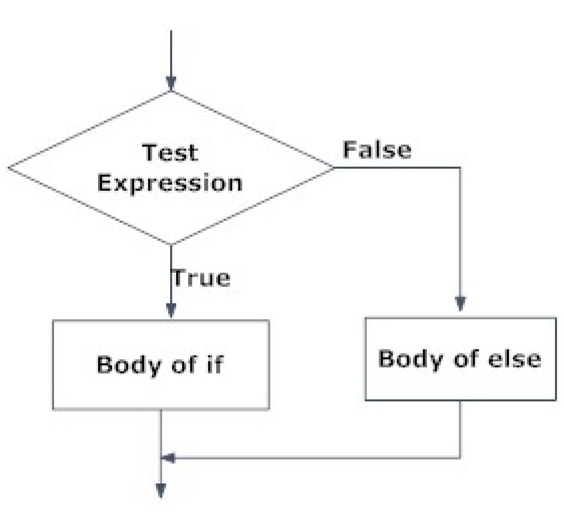

Fig: Operation of if...else statement

In [2]:
```
# example

num = 5

if num>=10:
    print("I am greater than or equal 10")

else:
    print("I am less than 10")
```

```
I am less than 10
```

In [3]:
```
# when we don't pass condition correctly

# only 0, None,"" and False are false, when converted to boolean

num = int(input("Enter a number "))

if num/2:
    print("I am divisible by 2.")

else:
    print("I am not divisible by 2.")
```

```
Enter a number 27
I am divisible by 2.
```

Control flow: if-elif-else

if-elif-else

we use if-elif-elif...elif-else when we want to more than 2 decision.

if-elif-else statement syntax:

```
if criteria:                                # don't forget to add colon here
    statement1                              # code
    statement2
    ...
    statementn
elif criteria:
    statement1
    statement2
    ...
    statementn
elif criteria:
    statement1
    statement2
    ...
    statementn
.
.
.
elif criteria:
    statement1
    statement2
    ...
    statementn
else:
    statement1
    statement2
    ...
    statementn
```

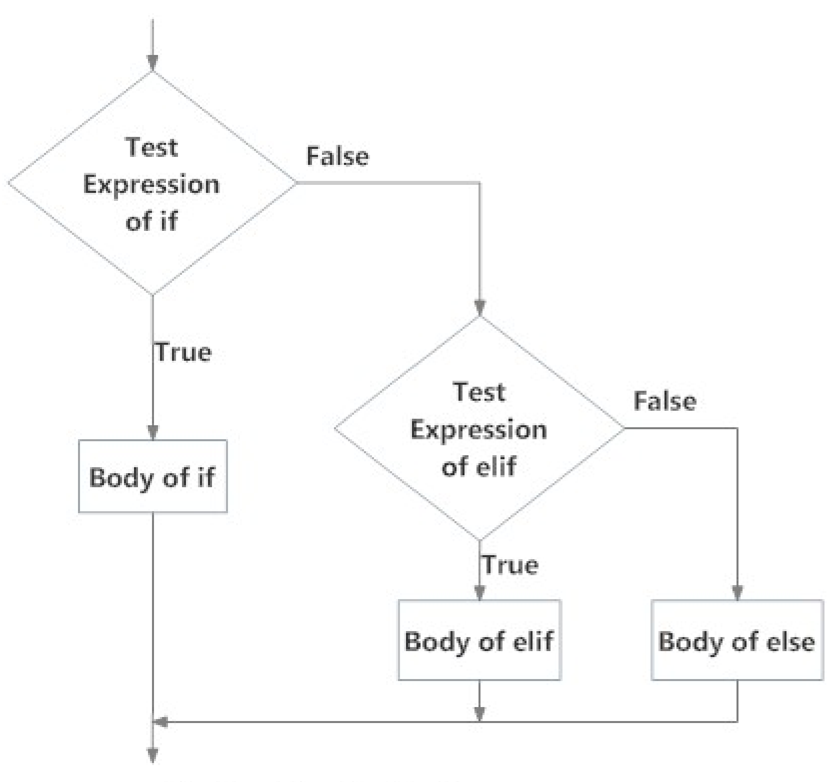

Fig: Operation of if...elif...else statement

In [4]:
```
# if elif else

a =int(input("Enter Number: "))

if type(a)!=type(1):
    print("a is not a integer")
elif a>10:
    print("a is greater than 10")
elif a<10:
    print("a is less than 10")
elif a ==10:
    print("a is equal to 10")
else:
    print("I don't know anything about a")
```

```
Enter Number: 34
a is greater than 10
```

Exercise: 3

1. Write a program (WAP) to find largest number among the two numbers. Take numbers as user input.
2. WAP to check if a number is odd or even.
3. WAP to find largest number among the three numbers. Take numbers as user input.
4. WAP which prints age group as mentioned -

> if age entered is less than or equal to 20 then "0_20"
> if age entered is between 20 and 40 (excluding 20 and including 40) then "21_40"
> . if age entered is between 40 and 60 (excluding 40 and including 60) then "41_60"
> if age entered is greater than 60 then "above_60"
> if age entered is less than 0 then "please enter correct age"

- input: 20
- output: 0_20

1. WAP Basic Calculator, which takes two numbers as user input. This program should ask for operation to perform either addition or substraction. Based on user input. Print your output.

Nested if-else statements

We can have a if...elif...else statement inside another if...elif...else statement. This is called **nesting** in programming.

In [5]:
```
num = int(input("Enter a number: "))        # check for indentation (whitespaces)

if type(num)==type(2):
    if num>0:
        print("number is positive")
        if num>50:
            print("greater than 50")
        else:
            print("greater than 0 and less than 50")
    elif num<0:
        print("number is negative")       # this is nesting; you can have multiple levels of nesting.
    else:
        print("number is zero")
else:
    print("please provide correct number")
```

```
Enter a number: 56
number is positive
greater than 50
```

Exercise: 4

1. Write a program (WAP) to find largest number among the three numbers. Take numbers as user input (use nested if else).
2. WAP which tells whether a given year is leap year or not. Refer to this for leap year definition: https://www.wikihow.com/Calculate-Leap-Years.

Great Job!