## Input function:

input() : this is user input method

```
name=input("enter your name")
print(name)
age=int(input("enter your age"))
print(age)
```

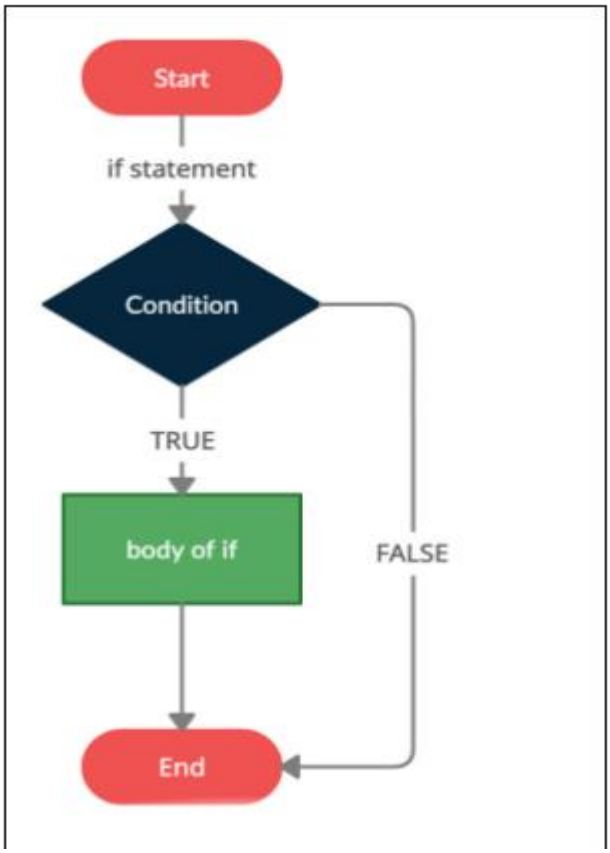
---

## Decision Making Statements:(if …else)

Syntax:

```
if (condition):
    statement 1
    statement 2
    …
```

Flow chart:



Types:

1. if
2. if else
3. if elif
4. Nested if

**1. if :**

```
x=5
if (x>0):
        print(“positive number”)
```

**2.if else:**

```
x=-5
if (x>0):
    print(“positive number”)
else:
    print(“negative number”)
```

**3.if elif :**

```
x=0
if (x>0):
    print(“positive number”)
elif(x==0):
    print(“value is Zero”)
else:
    print(“negative number”)
```

**4.**nested if:

```
num = 15

if num >= 0:
   if num == 0:
      print("Zero")
   else:
      print("Positive number")
else:
   print("Negative number")
```

---

**Looping statement:**

Python has two primitive loop commands:

- `while` loops
- `for` loops

**while loops:**

With the `while` loop we can execute a set of statements as long as a condition is true.

**Ex:**

```
i = 1
while i < 6:
  print(i)
  i += 1
```

# For Loops

A `for` loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string).keyword is **for**

**Ex:**

**1.**

```
fruits = ["apple", "banana", "cherry"]
for x in fruits:
  print(x)
```

**2.**

```
for x in "banana":
  print(x)
```

**3.**

```
for x in range(2, 6):
  print(x)
```

**4.**

```
for x in range(2, 30, 3):
  print(x)
```

---

## Jump Statements:

1.break

2.continue

Examble

Break statement:

```
i = 1
while i < 6:
  print(i)
  if i == 3:
    break
  i += 1
```

continue statement:

```
i = 1
while i < 6:
  print(i)
  if i == 3:
    continue
  i += 1
```

# function:

1.Built in function

2. User defined function

User defined function:

In Python a function is defined using the `def` keyword:

## Example

```
def my_function():
  print("Hello from a function")
```

my_function( )

function creating method:

1.no argument no return

2.no argument return

3.argument no return

4.argument return

Arbitrary argument method:

Ex:

```
def hello(*names):
        for i in names:
            print("hiii…",i)
hello("karan","vignesh","raja","prasanth")
```

# Recursion

Python also accepts function recursion, which means a defined function can call itself.

Recursion is a common mathematical and programming concept

```
def  tri_recursion(k):
  if(k==1):
      return 1
  else:
       return k*tri_recursion(k-1)
print(tri_recursion(5))
```

## lambda function:

A lambda function can take any number of arguments, but can only have one expression.

# Syntax

```
lambda arguments : expression
```

***examble 1 :***

```
x = lambda a : a + 10
print(x(5))
```

## examble 2:

```
x = lambda a : a + 10
print(x(5))
```

# Why Use Lambda Functions?

The power of lambda is better shown when you use them as an **anonymous function** inside another function.

```
def myfunc(n):
    return lambda a : a * n

mydoubler = myfunc(2)

print(mydoubler(11))
```

## lambda with map()examble 2:

```
animals = ['dog', 'cat', 'parrot', 'rabbit']
uppered_animals = list(map(lambda animal: animal.upper(),
animals))

print(uppered_animals)
```

## lambda with filter () examble 3:

```
ages = [13, 90, 17, 59, 21, 60, 5]
adults = list(filter(lambda age: age > 18, ages))

print(adults)
```