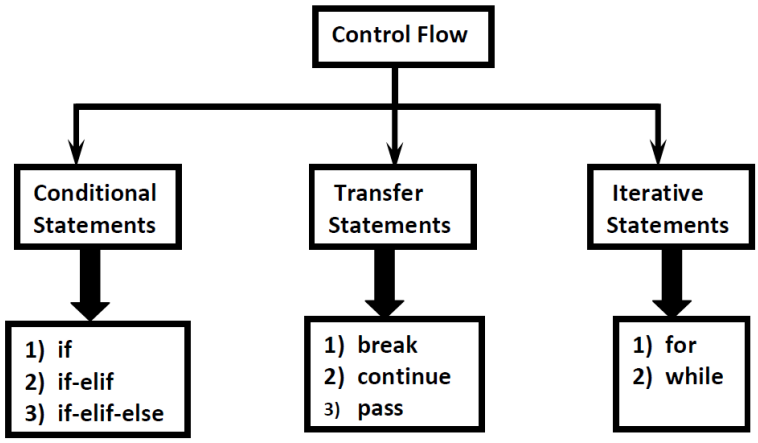
By Sai Kumar

PYTHON CONTROL FLOW



I. Conditional Statements

1) **if**

Syntax

if condition: statement

OR

if condition:

statement-1

statement-2

statement-3

If condition is true then statements will be executed.

Eg: vi if1.py

```
name=input("Enter Name:")
if name=="Sai":
  print("Hello Sai Good Morning")
print("How are you!!!")
```

python3 if1.py

Enter Name: Sai

Hello Sai Good Morning

How are you!!!

Enter Name: Kumar

How are you!!!

2) **if-else:**

if condition:

Action-1

else:

Action-2

if condition is true then Action-1 will be executed otherwise Action-2 will be executed.

Ex: **vi if2.py**

```
name=input("Enter Name:")
if name=="Sai":
   print("Hello Sai Good Morning")
else:
   print("Hello Guest Good Moring")
print("How are you!!!")
```

python3 if2.py

Enter Name:Sai

Hello Sai Good Morning

How are you!!!

python3 if2.py

Enter Name:Ravi
Hello Guest Good Moring
How are you!!!

3) **if-elif-else:**

if condition1:

Action-1

elif condition2:

Action-2

elif condition3:

Action-3

elif condition4:

Action-4

...

else:

Default Action

Based condition the corresponding action will be executed.

Ex: **vi if3.py**

```
brand=input("Enter Your Favourite Brand:")
if brand=="RC" :
   print("It is childrens brand")
elif brand=="KF":
  print("It is not that much kick")
elif brand=="FO":
  print("Buy one get Free One")
else:
  print("Other Brands are not recommended")
```

python3 if3.py

Enter Your Favourite Brand:RC

It is childrens brand

python3 if3.py

Enter Your Favourite Brand:KF

It is not that much kick

python3 if3.py

Enter Your Favourite Brand: KALYANI

Other Brands are not recommended

Note:

1) else part is always optional. Hence the following are various possible syntaxes.

1) If

2) if – else

3) if-elif-else

4) if-elif

2) There is no switch statement in Python

II. Iterative Statements

- If we want to execute a group of statements multiple times then we should go for Iterative statements.
- Python supports 2 types of iterative statements.

1) for loop

2) while loop

1) for loop:

If we want to execute some action for every element present in some sequence (it may be string or collection) then we should go for **for** loop.

Syntax: for x in sequence:

Body

Where sequence can be string or any collection.

Body will be executed for every element present in the sequence.

Eg 1: To print characters present in the given string

[Create your own py file and execute the below]

```
s="Sai Kumar"
for x in s:
  print(x)
```

Eg 2: To print characters present in string index wise:

```
s=input("Enter some String: ")
i=0
for x in s:
  print("The character present at ",i,"index is :",x)
  i=i+1
```

Enter some String: Sai Kumar

Eg 3: To print Hello 10 times

```
for x in range(10):
 print("Hello")
```

Eg 4: To display numbers from 0 to 10

```
for x in range(11):
  print(x)
```

Eg 5: To display odd numbers from 0 to 20

```
for x in range(21):
  if (x%2!=0):
    print(x)
```

Eg 6: To display numbers from 10 to 1 in descending order

```
for x in range(10,0,-1):
  print(x)
```

Eg 7: To print sum of numbers present inside list

```
list = eval(input("Enter List:"))
sum=0;
for x in list:
 sum=sum+x;
 print("The Sum=",sum)
```

Enter List:[10,20,30,40]

The Sum= 100

Enter List:[45,67]

The Sum= 112

2) **while loop:**

If we want to execute a group of statements iteratively until some condition false, then we should go for while loop.

Syntax: while condition:

body

Eg: To print numbers from 1 to 10 by using while loop

```
x = 1
while x <= 10:
 print(x)
 x = x+1
```

Eg: To display the sum of first n numbers

```
n=int(input("Enter number:"))
sum=0
 i=1
 while i<=n:
  sum=sum+i
  i=i+1
  print("The sum of first",n,"numbers is :",sum)
```

Infinite Loops:

```
i=0;

while True:

  i=i+1;

  print("Hello",i)
```

Nested Loops:

Sometimes we can take a loop inside another loop, which are also known as nested loops.

```
for i in range(4):

  for j in range(4):

   print("i=",i," j=",j)
```

What is the difference between for loop and while loop in Python?

- **We can use loops to repeat code execution**
- **Repeat code for every item in sequence → for loop**
- **Repeat code as long as condition is true → while loop**

*** **Happy Learning** ***