

Day10_Loops

Nested if : 1. It is a kind of conditional control flow statement where we have any kind of if inside any other kind of if

2. Syntax:

outer if:

inner if:

Here the inner if will get executed if the outer if is True ,we can have any number of nestings

We can even have if statements inside else or elif statements

```
a,b,c = int(input("First No.")),int(input("Second No.")),int(input("Third No."))
```

if a>b:

if a>c:

print("a is big")

else:

print("c is BIG")

else:

if b>c:

print("b is big")

else:

print("c is big")

#Run1

First No.10

Second No.2

Third No.8

a is big

#Run2

First No.8

Second No.10

Third No.12

c is big

#Run3

First No.10

Second No.12

Third No.8

b is big

#Run4

First No.10

Second No.8

Third No.12

c is BIG

Loops in Python : A loop or iteration is the kind of a control flow where a statement or statements will get executed some specific number of times
The loops are to be used when there is a requirement of code execution without redundancy i.e., if we want to print 1 to 5 we can use loops instead of

print(1)

print(2)

print(3)

print(4)

print(5)

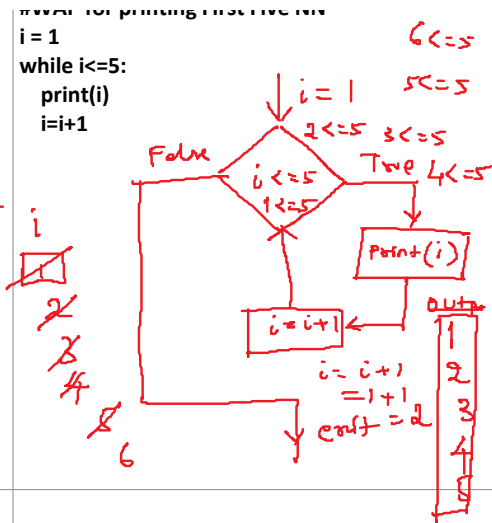
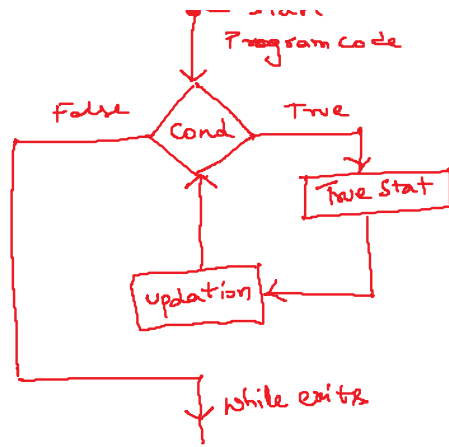
In python we have 3 kinds of loops

1. while loop
2. for loop
3. nested loops

while loop : 1. A while loop is an indefinite loop since the programmer has to provide the termination point of the loop.
2. Besides termination point a while loop also contain a start point and the step of execution

Syntax	Flowchart	Example
Initialization(start point) while condition(end point): statements updation/step/pattern		#WAP for printing First Five NN i = 1 while i<=5: print(i) <i>Handwritten notes:</i> i <= 5, i = 1, i <= 5

initialization(start point)
 while condition(end point):
 statements
 updation/step/pattern



#Print 5 to 1

```

i = 5
while i >= 1:
    print(i)
    i = i - 1
  
```

5
4
3
2
1

When using while loop a special care must be taken on the condition and the updation since a True condition always will lead to an infinite loop

```

i = 5
while i >= 1:
    print(i)
    i = i + 1
  
```

#This code leads to infinite loop since the update is making the condition True always

#A while loop for finding the sum and the product of the given range of numbers

Enter Start No: 5
 Enter End No.: 10

Sum 5 + 6 + 7 + 8 + 9 + 10 =
 Prod 5 * 6 * 7 * 8 * 9 * 10

Sum is : 45
 Product is:

```

sn = int(input("Enter Start Number"))
en = int(input("Enter End Number"))
sm,prd = 0,1
while sn <= en:
    sm = sm + sn
    prd = prd * sn
    sn = sn + 1
  
```

print("Sum is",sm)
 print("Product is",prd)

Enter Start Number5
 Enter End Number10
 Sum is 45
 Product is 151200

