

Python Programmingif...elif...else Statement

Whenever we are required to verify multiple dependent condition such that a next condition will be verified only when current condition has become false, then we use if...elif...else statement.

Syntax:-

```
if (condition1):
```

```
    #Statement1
```

```
elif (condition2):
```

```
    #Statement2
```

```
elif (condition3):
```

```
    #Statement 3
```

```
...
```

```
...
```

```
...
```

```
else:
```

```
    #Statement n
```

Q. Write a program to find out the greatest number among four number.

Program:-

#Input of four numbers.

```
num1 = int(input("Enter first number:"))
```

```
num2 = int(input("Enter second number:"))
```

```
num3 = int(input("Enter third number:"))
```

```
num4 = int(input("Enter fourth number:"))
```

#equality of Numbers and greatest number

```
if(num1==num2 and num1==num3 and num1==num4):
```

```
    print("All are equal")
```

```
elif(num1>=num2 and num1>=num3 and num1>=num4):
```

```
    print(num1, "is greatest")
```

```
elif(num2>=num1 and num2>=num3 and num2>=num4):
```

```
    print(num2, "is greatest")
```

```
elif(num3>=num1 and num3>=num2 and num3>=num4):
```

```
    print(num3, "is greatest")
```

```
else:
```

```
    print(num4, "is greatest")
```

Output:-

Enter first number: 45

Enter second number: 59

Enter third number: 59

Enter fourth number: 68

68 is greatest.

Q. Write a program to input any three number and arrange them in ascending order.

```
#input any three number
num1 = int(input("Enter first number : "))
num2 = int(input("Enter second number : "))
num3 = int(input("Enter third number : "))
#Arranging in Ascending order
if(num1==num2 and num1==num3):
    print("All are equal")
else:
    if(num1>=num2):
        #num1 is greater than num2
        if(num1 >= num3):
            #num1 is greater than num3 also
            if(num2>=num3):
                print("Ascending order : ",num3,num2,num1)
            else:
                print("Ascending order : ",num2,num3,num1)
        else:
            #num3 is greater than num1
            print("Ascending order : ",num2,num1,num3)
    else:
        #num2 is greater than num1
        if(num2 >= num3):
            #num2 is greater than num3 also
            if(num1 >= num3):
                print("Ascending order : ",num3,num1,num2)
            else:
                print("Ascending order : ",num1,num3,num2)
        else:
            #num3 is greater than num1
            print("Ascending order : ",num1,num2,num3)
```

Output :-

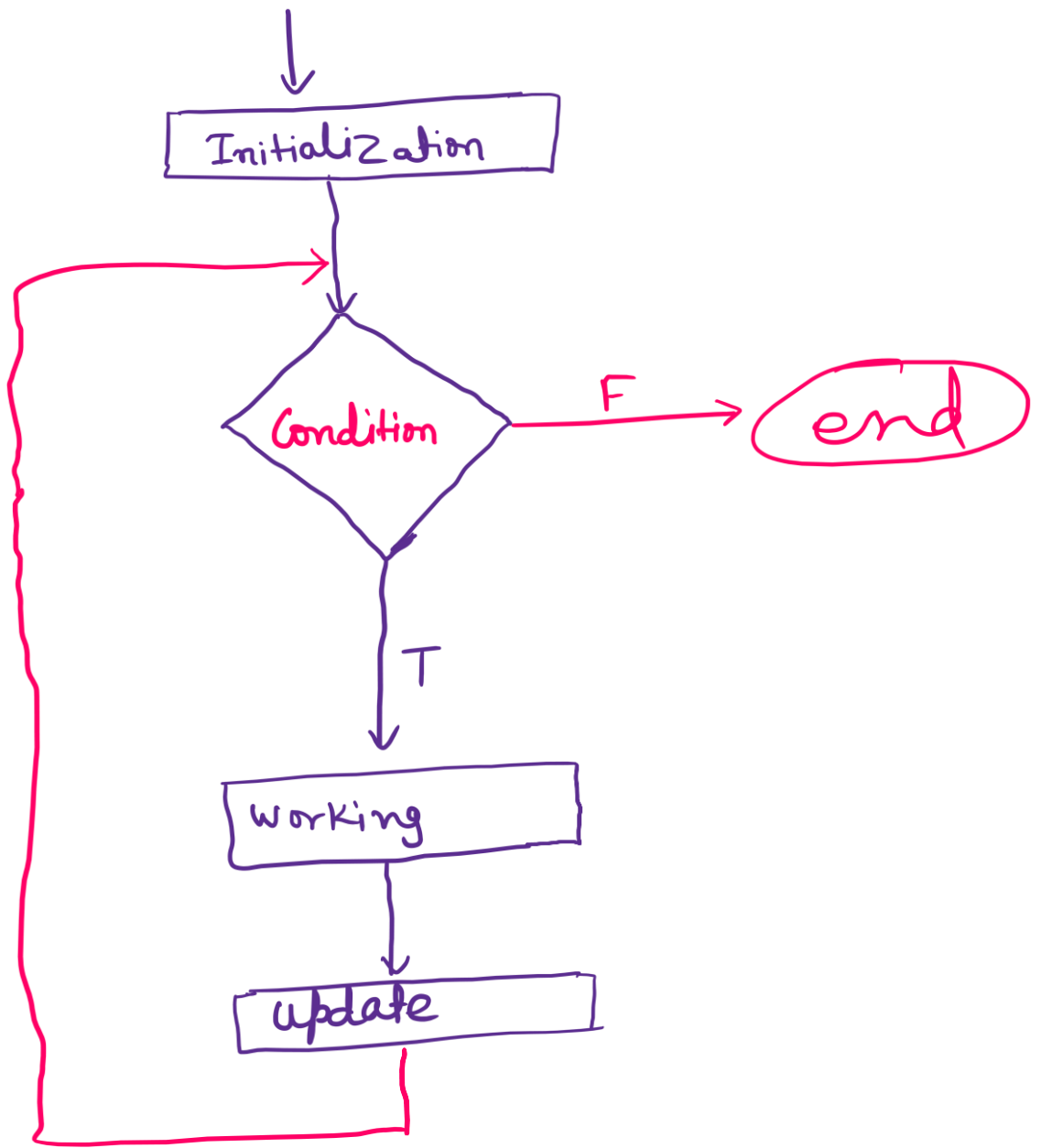
```
Enter first number : 45
Enter second number : 67
Enter third number : 23
Ascending order : 23 45 67
```

Iteration (Loop)

It is a style of program in which a statement or group of statement gets repeated until the condition becomes False.

Components of Iteration:-

- (i) Initialization:- It is the value from which iteration starts.
- (ii) Condition:- It determines the iteration must continue or terminate.
If the condition is True, then iteration will continue.
If the condition is False, then iteration gets terminated.
- (iii) update:- It is the value for next iteration.



There are following statements for Iteration:-

(i) While loop

(ii) for loop

While loop

if we do not have any pre information about number of terms for the given sequence or number of times the iteration is required to be executed has not specified, we use while loop.

Syntax:-

Initialization
while (Condition):

#working

- - - -

- - - -

update

e.g.

```
x = 10
```

```
while (x <= 30):
```

```
    print(x)
```

```
    x = x + 6
```

Output:-

10

16

22

28

Program 2:-

```
m = 10
while (m <= 40):
    print(m, end=',')
    m = m + 4
```

Output:-

10, 14, 18, 22, 26, 30, 34, 38,

Question

Print the following Sequence:-

5, 9, 13, 17, 21, ..., 205, 209

term = 5

while (term <= 209):

print(term, end=',')

term = term + 4