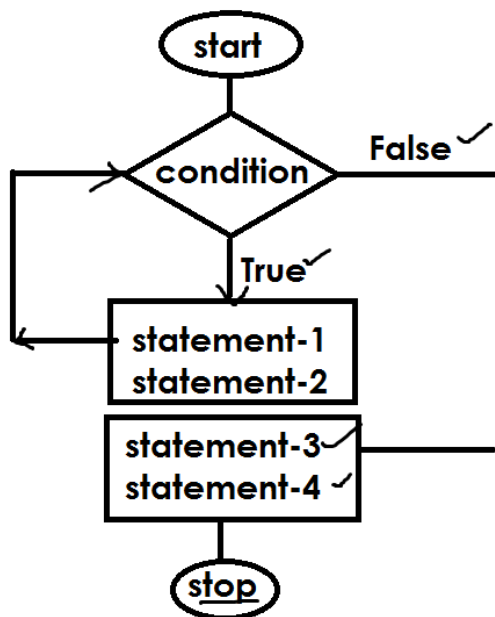


While loop

While loop is called entry controlled loop, where the statements are executed after checking condition.

While loop repeat the statements until given condition is True.

Syntax-1	Syntax-2
<pre>while <condition>: statement-1 statement-2 statement-3</pre> <p>statement-1,statement-2 are executed until given condition is True, when condition is False it stop executing loop and continue with statement-3</p>	<pre>while <condition>: statement-1 statement-2 else: statement-3 statement-4 statement-5</pre>



While loop required 3 statements

1. Initialization statement
2. Condition
3. Update statement

Initialization statement defines initial value of condition

Condition is Boolean expression, which define how many times loop has to be repeated

Update statement, which update condition

Example:

write a program to "Hello" 10 times

```
i=1 # initialization statement
while i<=10: # condition
    print("Hello")
    i+=1 # update statement
```

```
print("Bye")
```

Output

```
Hello
Hello
Hello
Hello
Hello
Hello
Hello
Hello
Hello
Hello
Hello
Bye
```

Write a program to print first 10 integers and their squares using while loop.

```
1 1
```

```
2 4
```

```
3 9 and so on
```

```
num=1
while num<=10:
    print(f'{num}-{num**2}')
    num+=1
```

Write a while loop statement to print the following series

105, 98, 917.

```
num=105
while num>=7:
    print(num,end=' ')
    num-=7
```

Write a program to print first 10 natural number in reverse order using while loop.

```
num=10
while num>=1:
    print(num,end=' ')
    num-=1
```

Write a program to print sum of first 10 Natural numbers.

```
num=1
total=0
while num<=10:
    total=total+num
    num+=1

print(f'sum of first 10 natural numbers {total}')
```

Write a program to print table of a number entered from the user.

```
Num=5
5x1=5
5x2=10
5x3=15
```

...

5x10=50

```
num=int(input("Enter any number")) # 5
m=1
while m<=10:
    print(f'{num}x{m}={num*m}') # 5x1=5
    m+=1
```

Write a program to check whether a number is prime or not using while loop.

Num=5

5%1 =0

5%2 !=0

5%3 !=0

5%4 !=0

5%5 =0

```
num=int(input("Enter any number")) # 5
m=1
while m<=10:
    print(f'{num}x{m}={num*m}') # 5x1=5
    m+=1
```

Write a program to check whether a number is prime or not using while loop.

```
num=int(input("Enter any number")) # 6
d=1
c=0
while d<=num:
    if num%d==0:
        c+=1
    d+=1
```

```
if c==2:
```

```
    print(f'{num} is prime')
else:
    print(f'{num} is not prime')
```

write a program to print all alphabets from A-Z using while loop

```
n=65
while n<=90:
    print(chr(n),end=' ')
    n+=1
```

```
ch='A'
while ch<='Z':
    print(ord(ch),end=' ')
    ch=chr(ord(ch)+1)
```