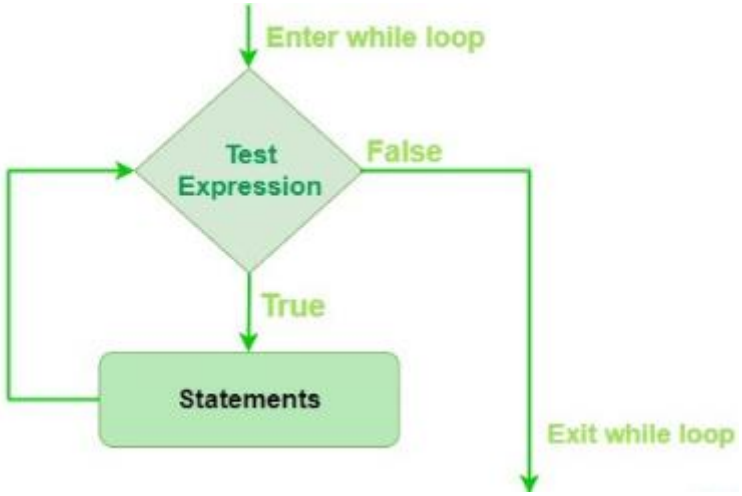
DAY 10 **[05 - JULY - 2025]**

WHILE LOOP

Python While Loop is used to execute a block of statements repeatedly until a given condition is satisfied. When the condition becomes false, the line immediately after the loop in the program is executed.

while loop Syntax

while expression:
statement(s)



The break Statement

With the break statement we can stop the loop even if the while condition is true:

The continue Statement

With the continue statement we can stop the current iteration, and continue with the next:

The else Statement

With the else statement we can run a block of code once when the condition no longer is true

PRACTICE QUESTIONS:

1. Print all elements of a list using a while loop

```
[ ]  list1 = [1,3,2,4,3,5,4]
     i = 0
     while i < len(list1):
       print(list1[i])
       i=i+1
```

```
1
3
2
4
3
5
4
```

2. Print all even numbers in a list using a while loop.

```
]  list1 = [1,2,3,4,5,6,7,8,9]
   i=0
   while i<len(list1):
     if list1[i]%2==0:
       print(list1[i])
     i=i+1
```

```
2
4
6
8
```

3. Print list elements in reverse order using a while loop.

```
]  list1 = [1,2,3,4,5]
   i = len(list1) -1
   while i >=0:
     print(list1[i])
     i=i-1
```

```
5
4
3
2
1
```

4. Calculate the sum of elements in a list.

```
list1 = [1,2,3,4,5]
i=0
sum=0
while i<len(list1):
  sum=sum+list1[i]
  i=i+1
print(sum)
```

```
15
```

5. Count how many odd numbers are in a list.

```
list1 = [1,2,3,4,5,6,7,8,9]
i=0
while i < len(list1):
  if list1[i]%2!=0:
    print(list1[i])
  i=i+1
```

```
1
3
5
7
9
```

6. Find the maximum value in a list using a while loop.

```
[ ] list1 = [11,1,13,31,23]
    i=0
    while i < len(list1):
      if list1[i]>list1[0]:
        list1[0]=list1[i]
      i=i+1
    print(list1[0])
```

```
31
```

7. Find the minimum value in a list using a while loop.

```
list1 = [11,1,13,31,23]
i=0
while i < len(list1):
  if list1[i]<list1[0]:
    list1[0]=list1[i]
  i=i+1
print(list1[0])
```

```
1
```

8. Print the square of each number in a list using while loop.

```
list1 = [1,2,3,4,5]
i=0
while i<len(list1):
  print(list1[i]**2)
  i=i+1
```

```
1
4
9
16
25
```

9. Print only the string elements from a mixed list

```
#Print only the string elements from a mixed list
list1 = [1,"hello","day",20,88,"yahoo"]
i=0
while i < len(list1):
    if type(list1[i]) == str:
        print(list1[i])
    i += 1
```

```
hello
day
yahoo
```

10.Calculate the average of all numbers in a list.

```
#Calculate the average of all numbers in a list. using while loop
list1=[1,2,3,4,5]
i = 0
total = 0

while i < len(list1):
    total += list1[i]
    i += 1

average = total / len(list1)
print("Average:", average)
```

```
Average: 3.0
```

11. Count how many times a specific value appears in a list.

```
list1 = [1, 2, 3, 2, 4, 2, 5]
value = 2
i = 0
count = 0
while i < len(list1):
    if list1[i] == value:
        count += 1
    i += 1

print("Count:", count)
```

```
Count: 3
```

12. Create a new list that contains only positive numbers from the original list.

```
original = [-5, 3, -2, 8, 0, -1, 4]
positive = []
i = 0
while i < len(original):
    if original[i] > 0:
        positive.append(original[i])
    i += 1

print("Positive numbers:", positive)
```

```
Positive numbers: [3, 8, 4]
```

13. Remove all odd numbers from a list using while loop.

```
numbers = [1, 2, 3, 4, 5, 6, 7]
i = 0
while i < len(numbers):
    if numbers[i] % 2 != 0:
        numbers.pop(i)
    else:
        i += 1

print("List after removing odd numbers:", numbers)
```

```
List after removing odd numbers: [2, 4, 6]
```

14. Check if a specific element exists in the list using while loop (no in keyword).

```
my_list = [10, 20, 30, 40, 50]
target = 30
i = 0
found = False
while i < len(my_list):
    if my_list[i] == target:
        found = True
        break
    i += 1

if found:
    print("Element found!")
else:
    print("Element not found.")
```

```
Element found!
```

15. Merge two lists using while loop.

```
list1 = [1, 2, 3]
list2 = [4, 5, 6]
merged = []

i = 0
# from list1
while i < len(list1):
    merged.append(list1[i])
    i += 1

j = 0
# from list2
while j < len(list2):
    merged.append(list2[j])
    j += 1

print("Merged list:", merged)
```

```
Merged list: [1, 2, 3, 4, 5, 6]
```

16. Separate even and odd numbers from a list into two new lists.

```
numbers = [10, 15, 22, 33, 40, 55, 60]
even = []
odd = []
i = 0
while i < len(numbers):
    if numbers[i] % 2 == 0:
        even.append(numbers[i])
    else:
        odd.append(numbers[i])
    i += 1

print("Even numbers:", even)
print("Odd numbers:", odd)
```

```
Even numbers: [10, 22, 40, 60]
Odd numbers: [15, 33, 55]
```

17. Find and print duplicate elements in a list using while loop.

```
numbers = [2, 4, 6, 4, 8, 2, 9, 6]
duplicates = []
i = 0
while i < len(numbers):
    j = i + 1
    while j < len(numbers):
        if numbers[i] == numbers[j] and numbers[i] not in duplicates:
            duplicates.append(numbers[i])
        j += 1
    i += 1

print("Duplicate elements:", duplicates)
```

```
Duplicate elements: [2, 4, 6]
```