

Loops-

2) While Loop

① While loop ?

" allows to repeatedly execute a block of code as specified condition is true!"

Syntax

while condition:

code to be executed repeatedly

- while Keyword : Initiates the loop.
- condition → Boolean expansion that determines whether the loop continues. If true, the loop body runs; if false, the loop terminates.
- colon : → makes the beginning of the loop body, which is indented.
- Loop body → contains the code to be executed repeatedly as long as the condition is true.

④ problem statement 1

print numbers continuously.

```
i = 0  
while True:  
    i += 1  
    print(i)
```

⑤ Basic while loop which prints no from 0 to 4.

```
counter = 0  
while counter < 5:  
    print("counter:", counter)  
    counter += 1
```

⑥ break Keyword : "Immediately exits the loop,
even if the condition is still true."

```
counter1 = 0  
while True:  
    print("counter1:", counter1)  
    counter1 += 1  
    if counter1 >= 5:  
        break
```

T
prints ^{no} 1 from 0 to 4.

① continue Keyword : " skips the remaining code in the current iteration & jumps to the next iteration ".

② problem statement 2 Skip even no's in a while loop.

~~counter3 = 1~~

~~while counter3 <= 5:~~

~~counter3 += 1~~

~~#skip the even numbers.~~

~~continue~~

counter3 = 1

while counter3 <= 5:

if counter3 % 2 == 0:

counter3 += 1

#skip even no's.

continue

print(f"Current number: {counter3}")

counter3 += 1

o/p :-

Current number : 1

Current number : 3

Current number : 5

① Looping through a list

```
fruits = ["apple", "orange", "banana", "grape"]
```

```
index = 0
```

```
while index < len(fruits):  
    print("Fruit:", fruits[index])  
    index += 1
```

Real-world problem : Counter Timer

Let's create a countdown timer
that takes a user specified time &
prints the remaining seconds until the
countdown reaches 0.

```
import time
```

```
def countdown_timer(seconds):  
    while seconds > 0:  
        print("Time remaining", seconds, "seconds")  
        time.sleep(1)      # Sleep for 1 second.  
        seconds -= 1  
    print("Countdown complete!")
```

```
# recalling the function
```

```
countdown_timer(30)
```

→ this program will print the remaining
seconds until countdown reaches 0.