

While Loop – Definition

A while loop is a control flow statement that repeatedly executes a block of code as long as a given condition is true.

It is used when the number of iterations is not known in advance.

Syntax:

while condition:

 # code to execute repeatedly

Examples:

1. Print numbers from 1 to 5:

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

2. Print even numbers from 2 to 10:

```
i = 2
while i <= 10:
    print(i)
    i += 2
```

3. Print "Hello" 3 times:

```
count = 1
while count <= 3:
    print("Hello")
    count += 1
```

4. Print numbers in reverse (5 to 1):

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

5. Sum of first 5 numbers:

```
i = 1
total = 0
while i <= 5:
    total += i
    i += 1
print(total)
```

6. Print characters of a string:

```
text = "abc"
i = 0
while i < len(text):
    print(text[i])
    i += 1
```

7. Password attempt loop:

```
password = ""
while password != "1234":
    password = input("Enter password: ")
print("Access granted!")
```