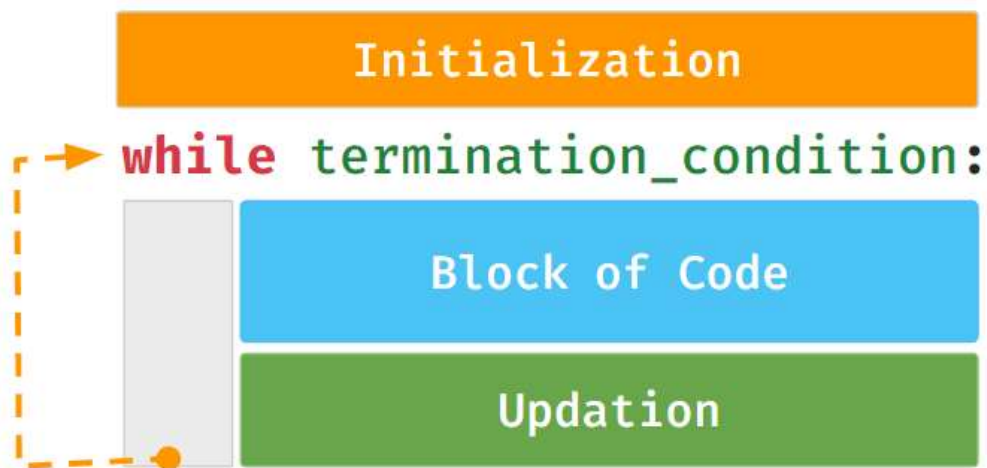# Cheat Sheet

Loops

So far we have seen that Python executes code in a sequence and each block of code is executed once.

Loops allow us to execute a block of code several times.

While Loop

Allows us to execute a block of code several times as long as the condition is

  True .

While Loop Example

The following code snippet prints the next three consecutive numbers after a given number.

Code

PYTHON

```python
1  a = int(input())
2  counter = 0
3  while counter < 3:
4      a = a + 1
5      print(a)
```

```
6        counter = counter + 1
```

Input

4

Output

5
6
7

Possible Mistakes

1. Missing Initialization

Code

PYTHON

```python
1  a = int(input())
2  while counter < 3:
3      a = a + 1
4      print(a)
5      counter = counter + 1
6  print("End")
```

Input

5

Output

```
NameError: name 'counter' is not defined
```

2. Incorrect Termination Condition

Code

PYTHON

```python
1  a = int(input())
2  counter = 0
3  condition = (counter < 3)
4  while condition:
5      a = a + 1
6      print(a)
7      counter = counter + 1
```

Input

```
10
```

Output

The above code runs into an infinite loop.

While block will keep repeating as the value in condition variable is

True .

3. Not Updating Counter Variable

Code

PYTHON

```python
1  a = int(input())
2  counter = 0
3  while counter < 3:
4      a = a + 1
5      print(a)
6  print("End")
```

Input

```
10
```

Output

```
Infinite Loop
```

As the value of counter is not updating.

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