

Python

{ For and While Loops

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Loops

- ⌘ For

- ⌘ While

- ⌘ Break Statement

For Loop

Definition – iterates through a list of items sequentially.

- ⌘ Simplest Loop - the number of iterations to execute is known
- ⌘ Works with numbers
- ⌘ Works with lists
- ⌘ Works with strings (text)

For Loop

Syntax for iterator in sequence:
statement 1
statement N

```
for x in range(4):  
    print(x**2)
```

```
for letter in "Python":  
    print (letter)
```

```
fruits = ['banana', 'apple', 'mango']  
for fruit in fruits:  
    print (fruit)
```

While Loop

- ⌘ Three components
- ⌘ Iteration is NOT known
- ⌘ 1 Evaluate expression
- ⌘ 2 Execute process
- ⌘ 3 Update the value being evaluate – decrease/increase
- ⌘ Break statement – to end the While loop in the process

Num = 5

```
1 While num > 0:  
2     print (num)  
3     num = num - 1
```

While Loop

```
num = 25
```

```
while num > 10:  
    print (num)  
    num = num - 1 'remove this line
```

```
#end While
```

```
num = 25  
counter = 0
```

```
while num > 10:  
    print (num)  
    counter = counter + 1  
    if counter > 25:  
        print('infinite loop encountered!')  
        break
```

```
#end While
```

Use a counter variable and the break statement

While Loop - Try This

```
wallet = 250
shoes = 0
purchase = [15, 65, 35, 5, 40, 100]

while wallet > 0 and shoes < len(purchase):
    if wallet < purchase[shoes]:
        print("Done shoe shopping")
        break
    wallet = wallet - purchase[shoes]
    shoes = shoes + 1

print ("Pairs of shoes bought: " + str(shoes))
print ("Money left in wallet: " + str(wallet))
```