

Agenda:

- Break in while loop
- Continue in while loop
- Nested while loops

The break Statement within while loop

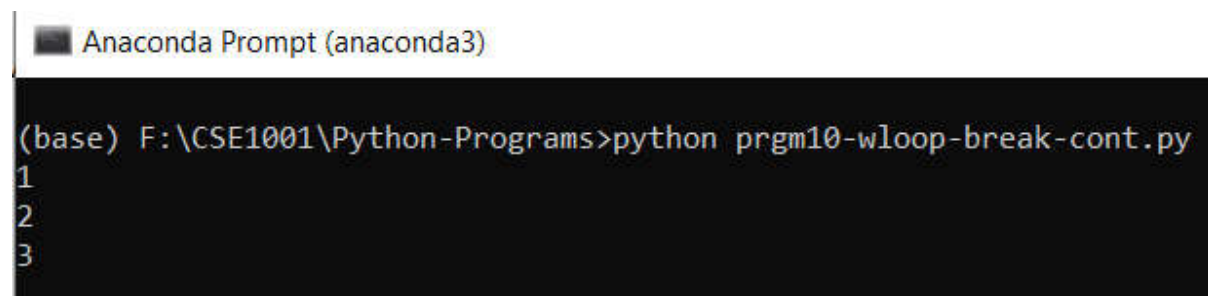
- With the **break** statement we can stop the loop even if the while condition is true:

Example

This program exits from the while loop, when i = 3.

```
i = 1
while i < 6:
    print(i)
    if i == 3:
        a=5    # dummy statement
        break # on and off the break and observe the output
    i += 1
```

Output-1: (with 'break' statement)



```
Anaconda Prompt (anaconda3)
(base) F:\CSE1001\Python-Programs>python prgm10-wloop-break-cont.py
1
2
3
```

Output-2: (without 'break' statement)

Anaconda Prompt (anaconda3)

```
(base) F:\CSE1001\Python-Programs>python prgm10-wloop-break-cont.py
```

```
1
```

```
2
```

```
3
```

```
4
```

```
5
```

The continue Statement

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

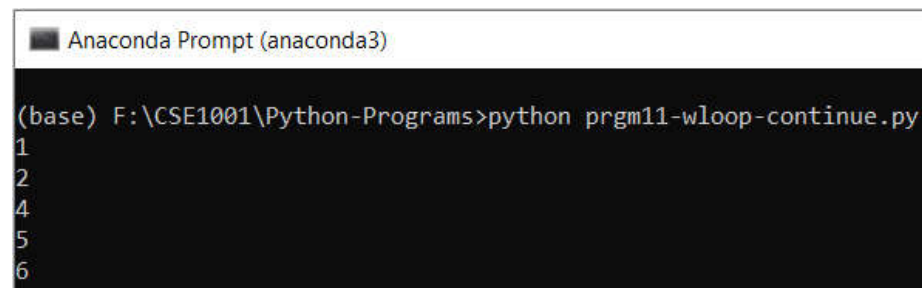
Example

\$ Continue to the next iteration, if i==3.

```
i = 0
while i < 6:
    i=i+1
    if i == 3:
        a=5 #dummy statement
        continue # on and off 'continue' and observe
    print(i)
```

Output-1 (with 'continue' statement)

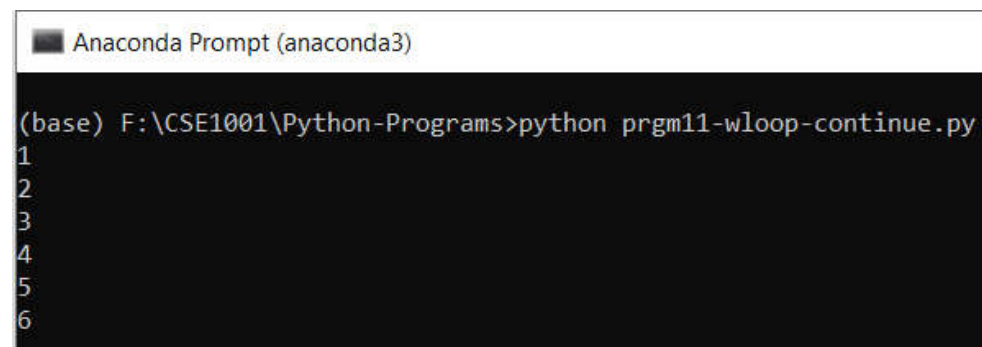
Note that number 3 is missing in the following output.



```
Anaconda Prompt (anaconda3)
(base) F:\CSE1001\Python-Programs>python prgm11-wloop-continue.py
1
2
4
5
6
```

Output-2 (without 'continue' statement)

Note that number 3 is printed in the following output.



```
Anaconda Prompt (anaconda3)
(base) F:\CSE1001\Python-Programs>python prgm11-wloop-continue.py
1
2
3
4
5
6
```

Nested while-loop

- A while loop inside a while-loop

```
print('Program-1')
```

```
i = 1
```

```
while i <=3:
```

```
    j=1
```

```
        print("\n")
```

```
        while j <= 5:
```

```
            print('*')
```

```
            j = j + 1
```

```
        i = i + 1
```

Output

```
Anaconda Prompt (anaconda3)

(base) F:\CSE1001\Python-Programs>python prgm12-wloop-nested-loop.py
Program-1

*
*
*
*
*

*
*
*
*
*

*
*
*
*
*
```

```
print('Program-2')
```

```
i = 1
```

```
while i <= 3:
```

```
    j=1
```

```
        print("\n")
```

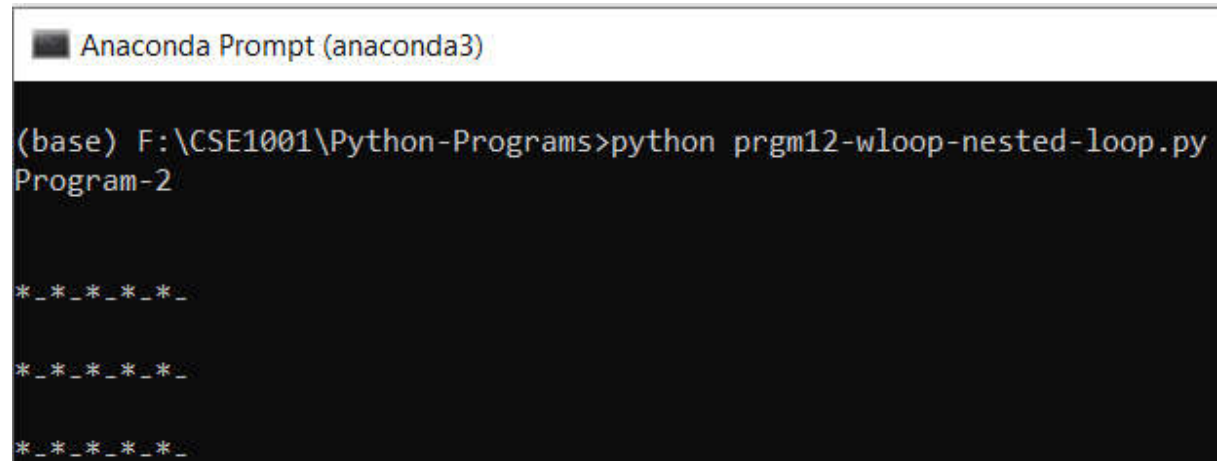
```
            while j <= 5:
```

```
                print('*',end='-')
```

```
                j = j + 1
```

```
            i = i + 1
```

Output:



```
Anaconda Prompt (anaconda3)

(base) F:\CSE1001\Python-Programs>python prgm12-wloop-nested-loop.py
Program-2

*_*_*_*_*_
*_*_*_*_*_
*_*_*_*_*_
```

```
print('Program-3')
```

```
i = 1
```

```
while i <=3:
```

```
    j=1
```

```
    print("\n")
```

```
    while j <= 5:
```

```
        print(j,end='-')
```

```
        j = j + 1
```

```
    i = i + 1
```

Output:

```
Anaconda Prompt (anaconda3)

(base) F:\CSE1001\Python-Programs>python prgm12-wloop-nested-loop.py

Program-3

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

```
print('Program-4')
```

```
i = 1
```

```
while i <= 3:
```

```
    j=1
```

```
        print("\n")
```

```
        while j <= i:
```

```
            print(j,end=' -')
```

```
            j = j + 1
```

```
        i = i + 1
```

Output:

```
Anaconda Prompt (anaconda3)

(base) F:\CSE1001\Python-Programs>python prgm12-wloop-nested-loop.py

Program-4

1-
1-2-
1-2-3-
```

Activity:

1) Write a python program using while loop to print the following patterns. If required, use 'break', 'continue', 'if', 'else' statements'

a) Pattern 1

```
*  
  
# #  
  
* * *  
  
# # # #  
  
* * * * *
```

...

b) Pattern 2

```
1  
  
3  
  
5  
  
7  
  
9
```

...

c) Pattern 3

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

.....

d) Pattern 4

```
2 2  
  
4 4 4 4  
  
6 6 6 6 6 6  
  
8 8 8 8 8 8 8 8
```

.....