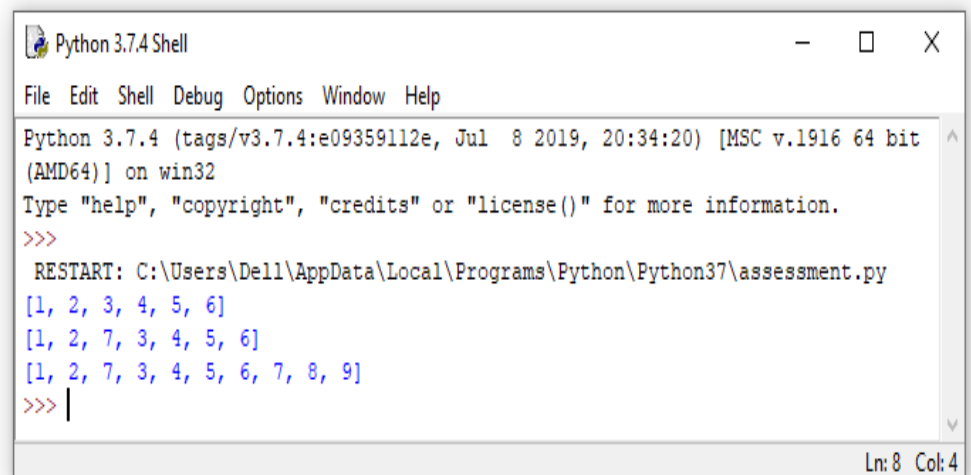


1. Difference Between append, extend, and insert in python.

Explain with an example?

```
numbers = [1,2,3,4,5]
numbers.append(6)
print(numbers)
[1,2,3,4,5,6]
numbers.insert(2,7)  ## insert(position,value)
print(numbers)
[1,2,7,4,5,6]
numbers.extend([7,8,9])
print(numbers)
[1,2,7,4,5,6,7,8,9]
numbers.append([4,5])
[1,2,7,4,5,6,7,8,9,[4,5]]
```

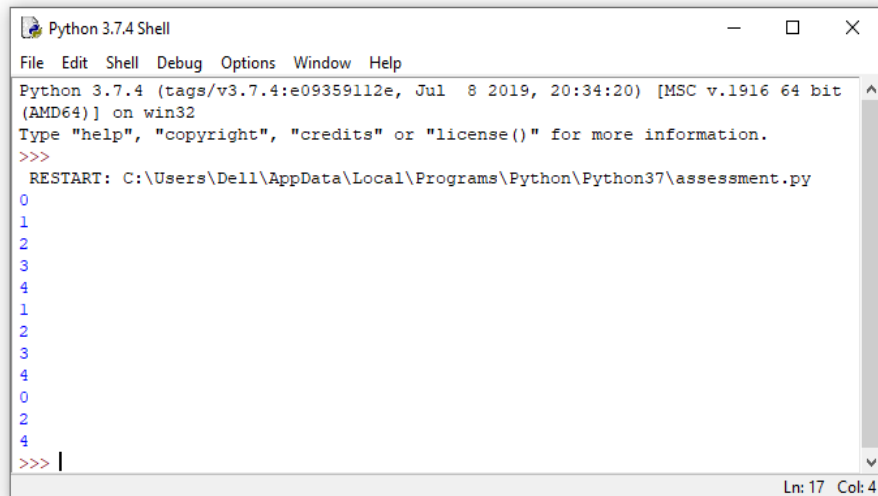


```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul  8 2019, 20:34:20) [MSC v.1916 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
[1, 2, 3, 4, 5, 6]
[1, 2, 7, 3, 4, 5, 6]
[1, 2, 7, 3, 4, 5, 6, 7, 8, 9]
>>> |
```

Ln: 8 Col: 4

2 Explain the range function in python with an example?

```
for i in range(5): ## number
    print(i)
    0,1,2,3,4
for i in range(1,5): ##(start,end)
    print(i)
    1,2,3,4
for i in range(0,5,2): ## (start,end,step)
    print(i)
    0,2,4
```



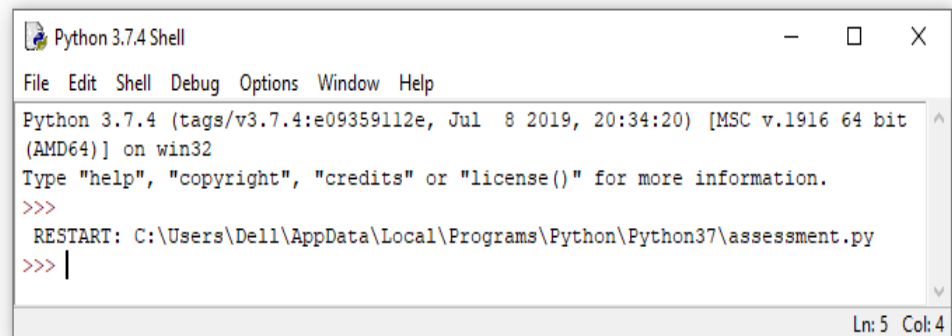
The screenshot shows a Python 3.7.4 Shell window with the following content:

```
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
0
1
2
3
4
1
2
3
4
0
2
4
>>> |
```

The output of the code is displayed line by line, corresponding to the three range functions used in the example. The status bar at the bottom right indicates 'Ln: 17 Col: 4'.

3 Difference between == and is operator in python?

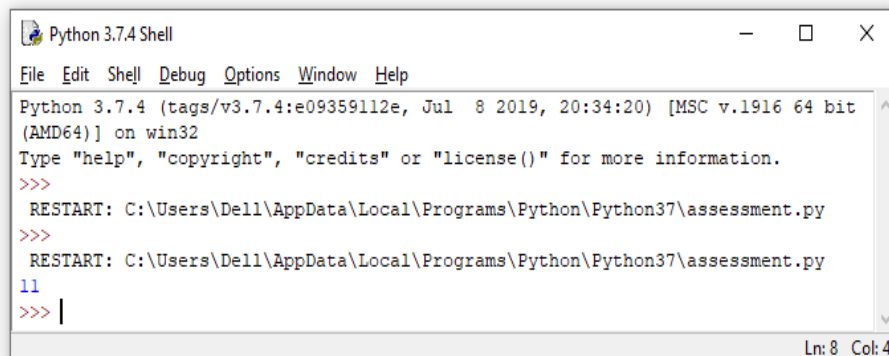
```
lst1 = [1,2,3]
lst2 = [1,2,3]
lst1 == lst2
True
lst1 is lst2
False ## They Both Belong to different memory object
```



```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
>>> |
Ln: 5 Col: 4
```

4 What is a lambda function?

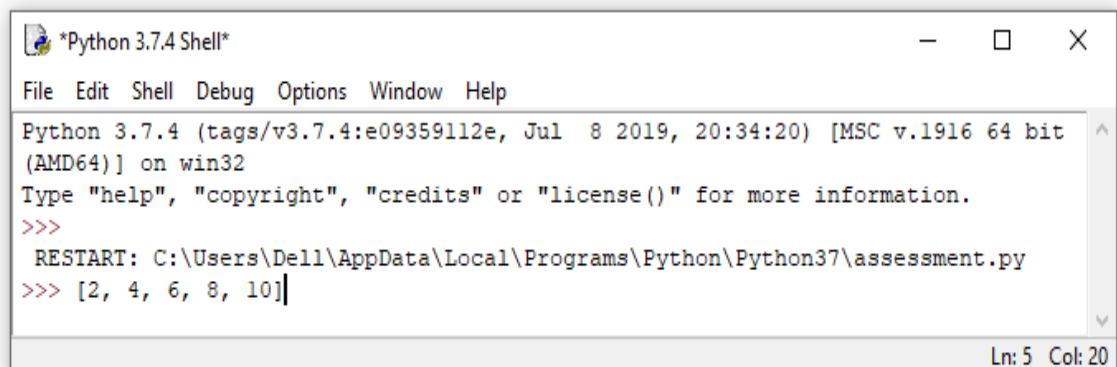
```
a = lambda x,y: x+y
print(a(5,6))
```



```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
11
>>> |
Ln: 8 Col: 4
```

5 Explain Filter in python?

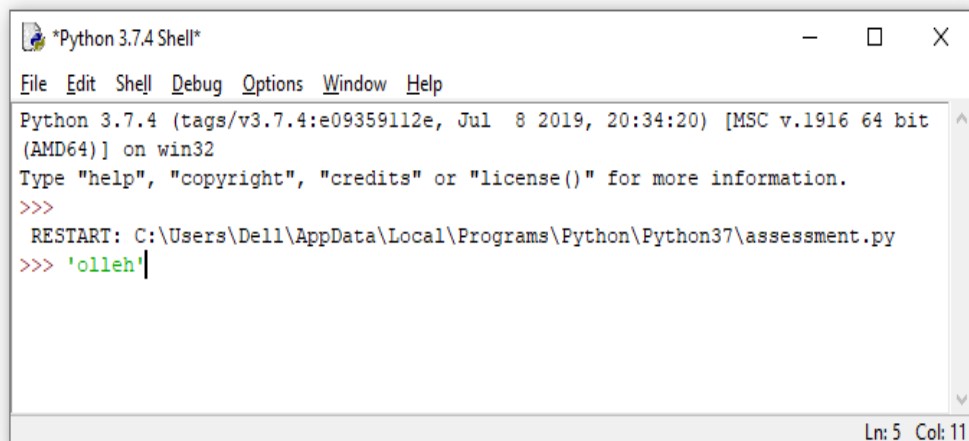
```
lst = [1,2,3,4,5,6,7,8,9,10] ##iterable
def even(num):
    if num%2==0:
        return num
list(filter(even,lst)) ## filter all even numbers
```



A screenshot of a Python 3.7.4 Shell window. The window title is "*Python 3.7.4 Shell*". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The main text area shows the following output: "Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32", "Type 'help', 'copyright', 'credits' or 'license()' for more information.", and a prompt ">>>". Below the prompt, it says "RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py" and shows the output of the filter function: ">>> [2, 4, 6, 8, 10]". The status bar at the bottom right indicates "Ln: 5 Col: 20".

6 How to reverse a string in python using indexing.

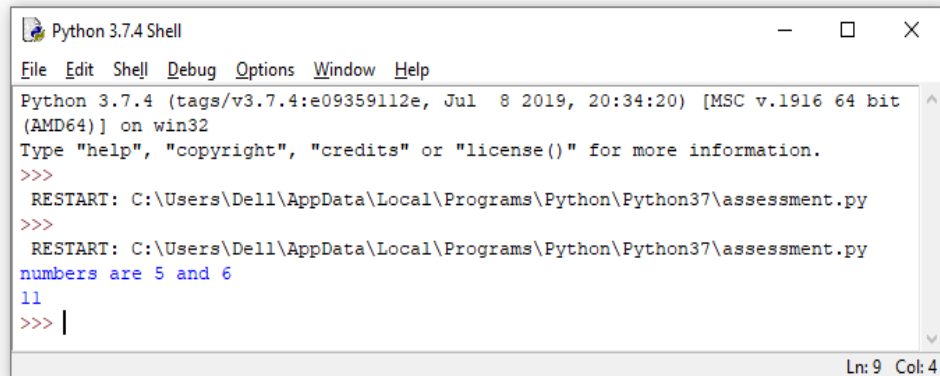
```
string = 'hello'
string[::-1]
```



A screenshot of a Python 3.7.4 Shell window. The window title is "*Python 3.7.4 Shell*". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The main text area shows the following output: "Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32", "Type 'help', 'copyright', 'credits' or 'license()' for more information.", and a prompt ">>>". Below the prompt, it says "RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py" and shows the output of the string reversal: ">>> 'olleh'". The status bar at the bottom right indicates "Ln: 5 Col: 11".

7 What are decorators in python?

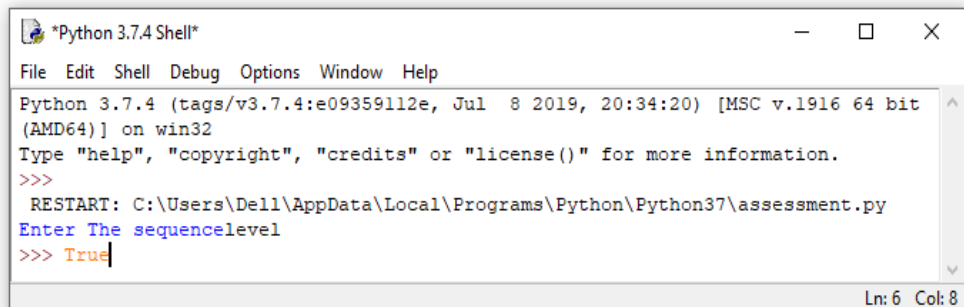
```
def addition(func):
    def inner(a,b):
        print("numbers are",a,"and",b)
        return func(a,b)
    return inner
@addition
def add(a,b):
    print(a+b)
add(5,6)
```



```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
numbers are 5 and 6
11
>>> |
```

8 Write a program in Python to check if a sequence is a Palindrome

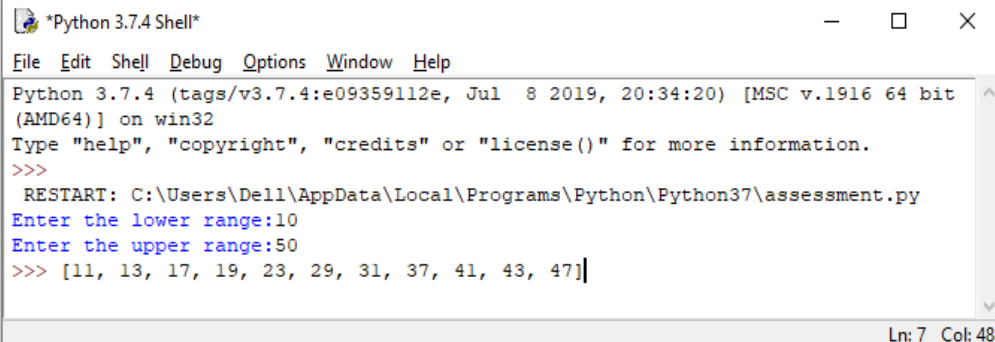
```
a = input("Enter The sequence")
ispalindrome = a == a[::-1]
ispalindrome
```



```
*Python 3.7.4 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
Enter The sequencelevel
>>> True
```

9 Write a Program to print all prime numbers in a given sequence?

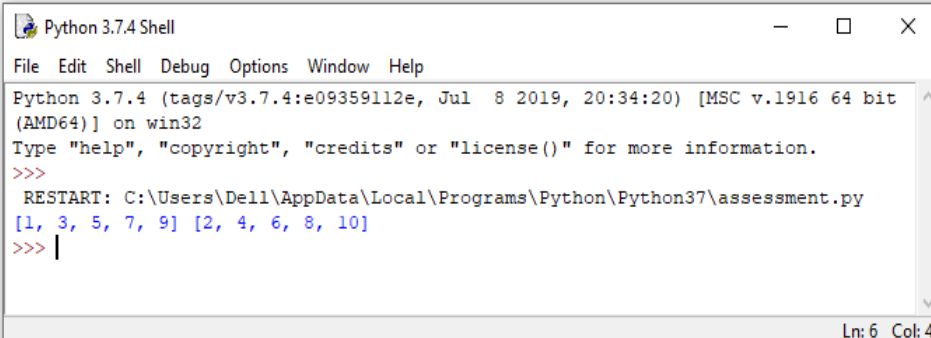
```
lower = int(input("Enter the lower range:"))
upper = int(input("Enter the upper range:"))
list(filter(lambda x:all(x % y != 0 for y in range(2, x)), range(lower, upper)))
```



```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
Enter the lower range:10
Enter the upper range:50
>>> [11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47]
```

10 Write a one-liner in python to fetch out all the even and odd numbers from a given list?

```
a = [1,2,3,4,5,6,7,8,9,10]
odd, even = [el for el in a if el % 2==1], [el for el in a if el % 2==0]
print(odd,even)
```



```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
[1, 3, 5, 7, 9] [2, 4, 6, 8, 10]
>>> |
```

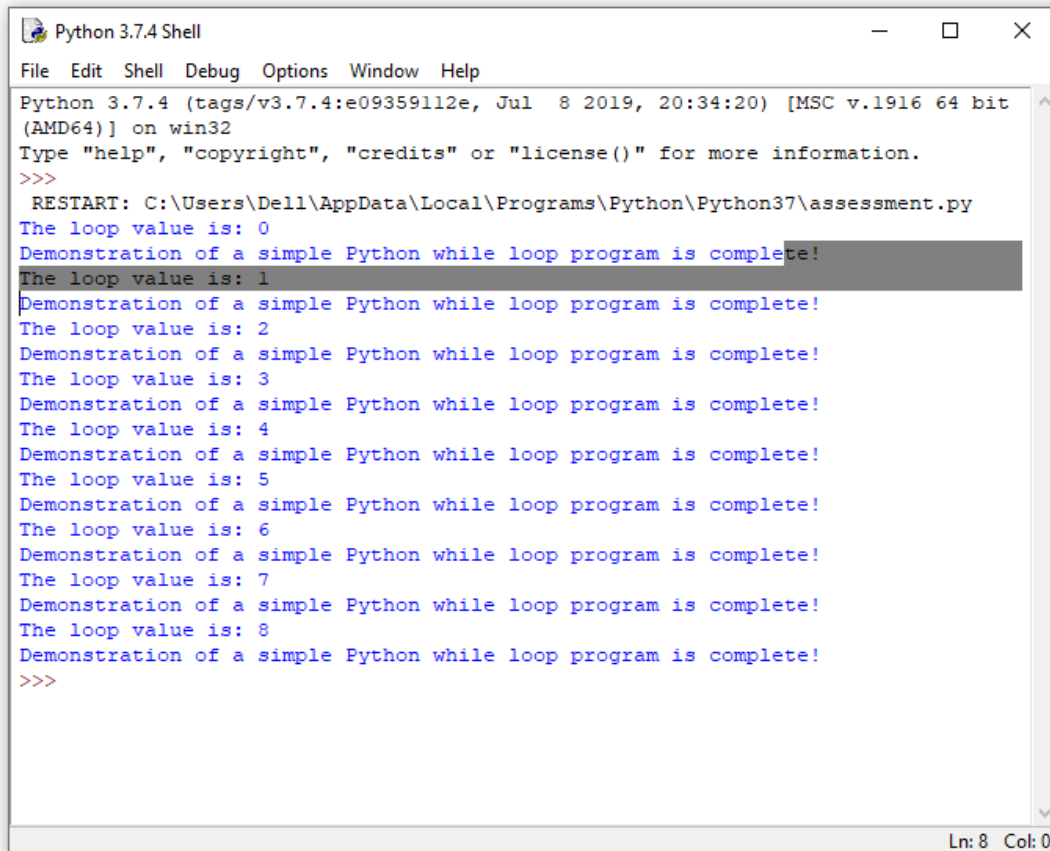
11 Write a program in Python for getting indices of N maximum values in a NumPy array.

```
import numpy as np
arr = np.array([1, 3, 2, 4, 5])
print(arr.argsort() [-3:] [::-1])
```

Output:
[4 3 1]

12 A Simple Python While Loop Example

```
loop_value = 0
while (loop_value < 9):
    print('The loop value is:', loop_value)
    loop_value = loop_value + 1
    print ('Demonstration of a simple Python while loop program is complete!')
```

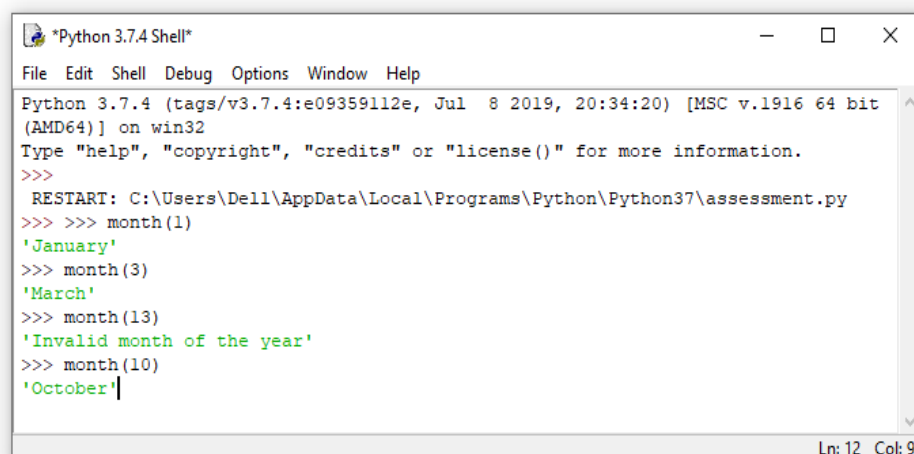


```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
The loop value is: 0
Demonstration of a simple Python while loop program is complete!
The loop value is: 1
Demonstration of a simple Python while loop program is complete!
The loop value is: 2
Demonstration of a simple Python while loop program is complete!
The loop value is: 3
Demonstration of a simple Python while loop program is complete!
The loop value is: 4
Demonstration of a simple Python while loop program is complete!
The loop value is: 5
Demonstration of a simple Python while loop program is complete!
The loop value is: 6
Demonstration of a simple Python while loop program is complete!
The loop value is: 7
Demonstration of a simple Python while loop program is complete!
The loop value is: 8
Demonstration of a simple Python while loop program is complete!
>>>
```

Ln: 8 Col: 0

13 Switch Statement

```
def month(i):
    switcher={
1:'January',
2:'February',
3:'March',
4:'April',
5:'May',
6:'June',
7:'July',
8:'August',
9:'September',
10:'October',
11:'November',
12:'December'
    }
```



```
*Python 3.7.4 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\Dell\AppData\Local\Programs\Python\Python37\assessment.py
>>> >>> month(1)
'January'
>>> month(3)
'March'
>>> month(13)
'Invalid month of the year'
>>> month(10)
'October'
```

Ln: 12 Col: 9

