

## Index

Sr. No.	Topic	Date	Sign
1	Installing and setting up the Python IDLE interpreter. Executing simple statements like expression statement (numeric and Boolean types), assert, assignment, delete statements; the print function for output.	27/08/2018	
2	Script and interactive modes; defining a function in the two modes; executing a script; interactively executing a statement list (semicolon-separated sequence of simple statements); the input function.	28/08/2018	
3	Programs based on lists, conditional constructs, the for statement and the range function; interactively using the built-in functions len, sum, max, min	03/09/2018	
4	Programs related to string manipulation	04/09/2018	
5	Programs based on the while statement; importing and executing built-in functions from the time, math and random modules	17/09/2018	
6	Programs using break and continue statements.	18/09/2018	
7	Programs related to dictionaries	08/10/2018	
8	Programs using list comprehensions and anonymous functions	15/10/2018	

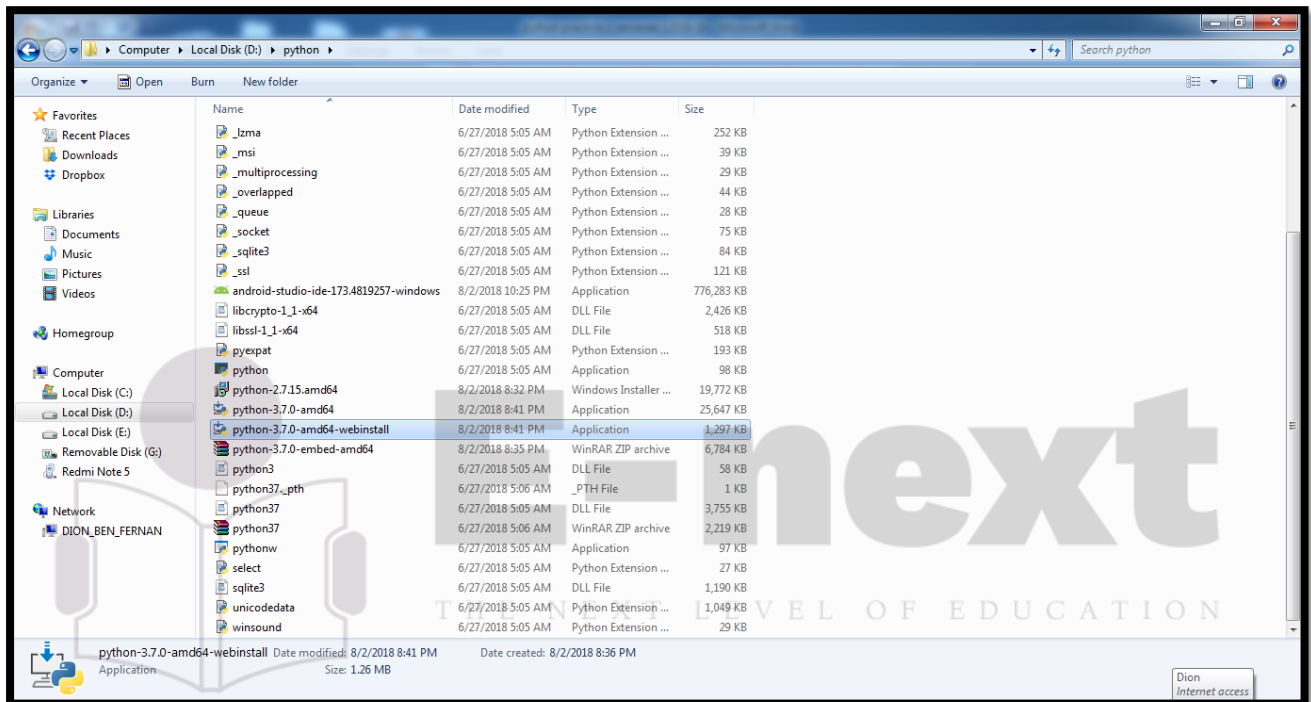
## Practical No. 1

**Aim:** Installing and setting up the Python IDLE interpreter. Executing simple statements like expression statement (numeric and Boolean types), assert, assignment, delete statements; the print function for output.

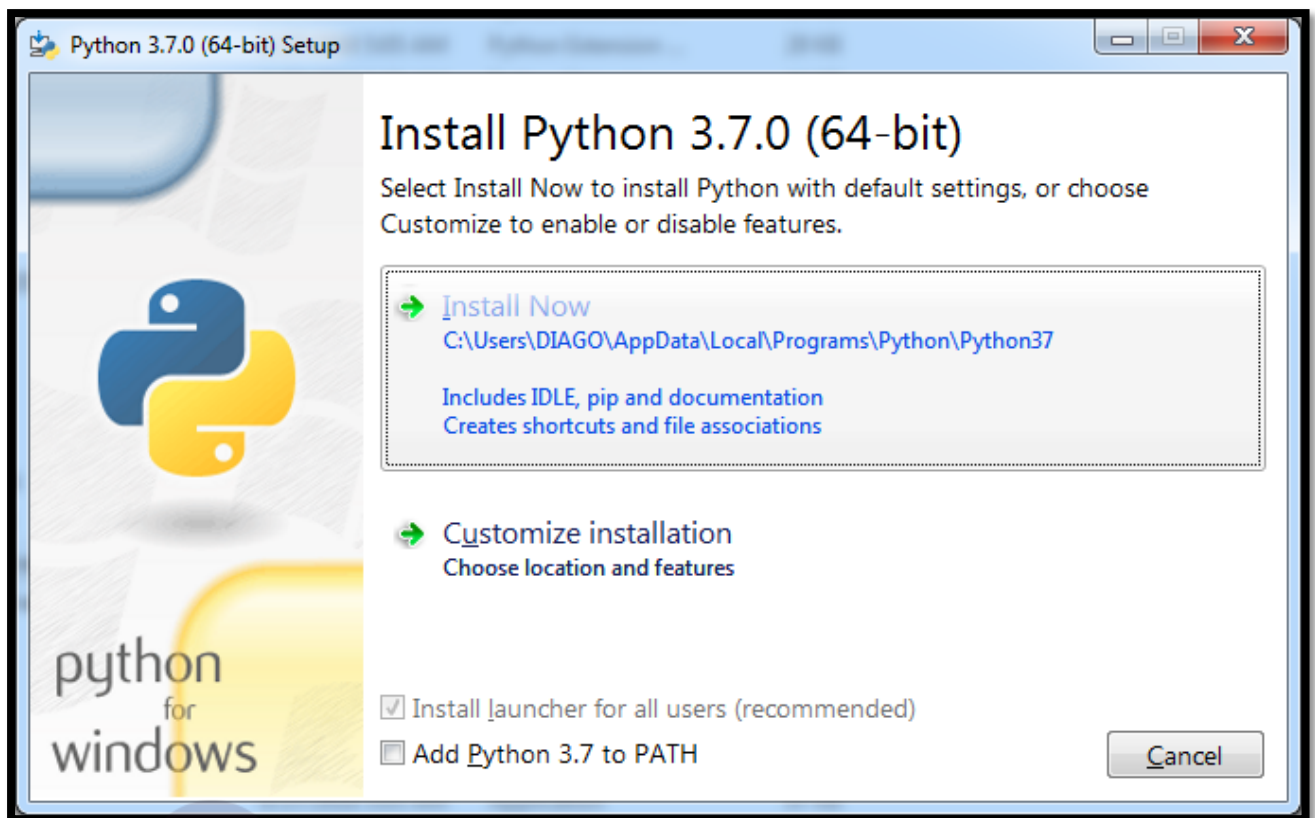
#Expression Statements

### 1. Write down the step to download and install the python IDLE interpreter.

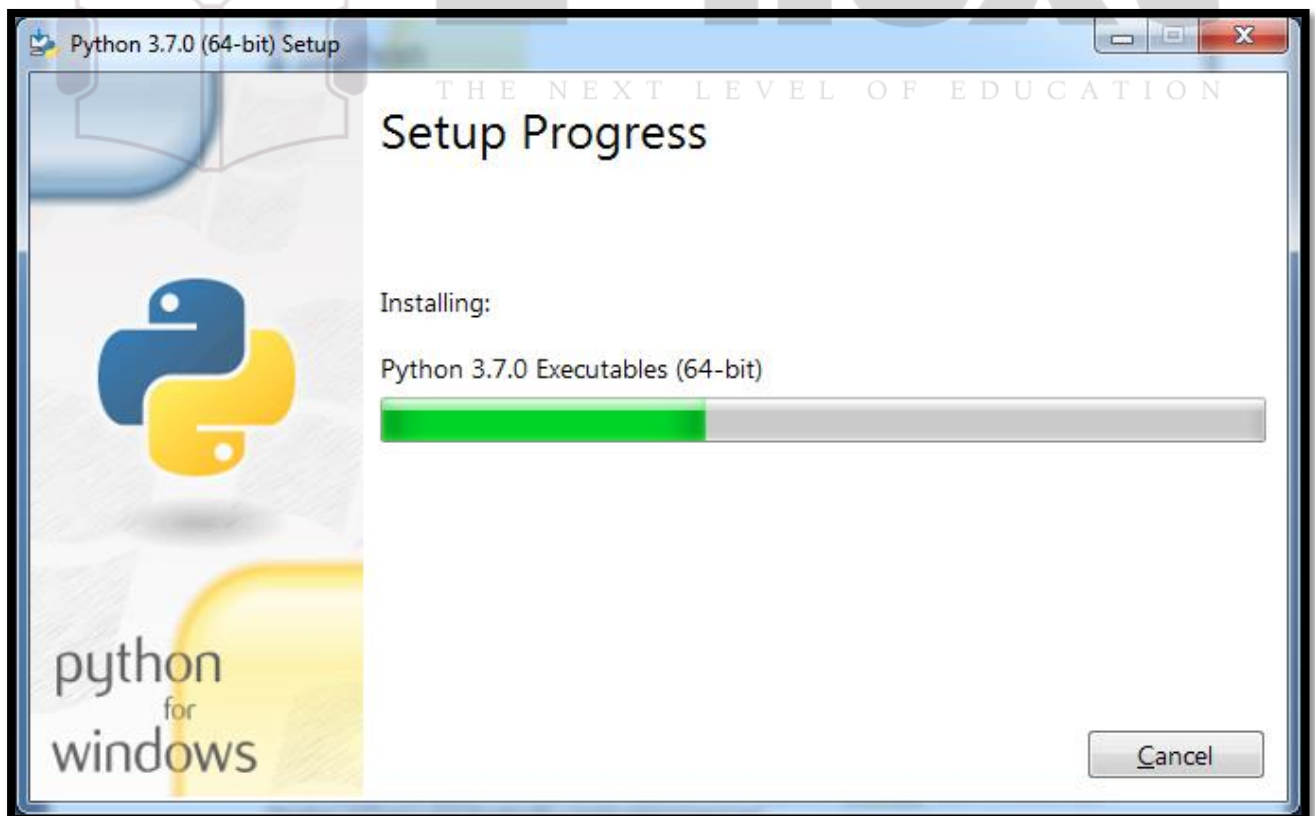
Step 1: Install the python IDLE from the site [www.python.org](http://www.python.org) according to the user's PC operating system .



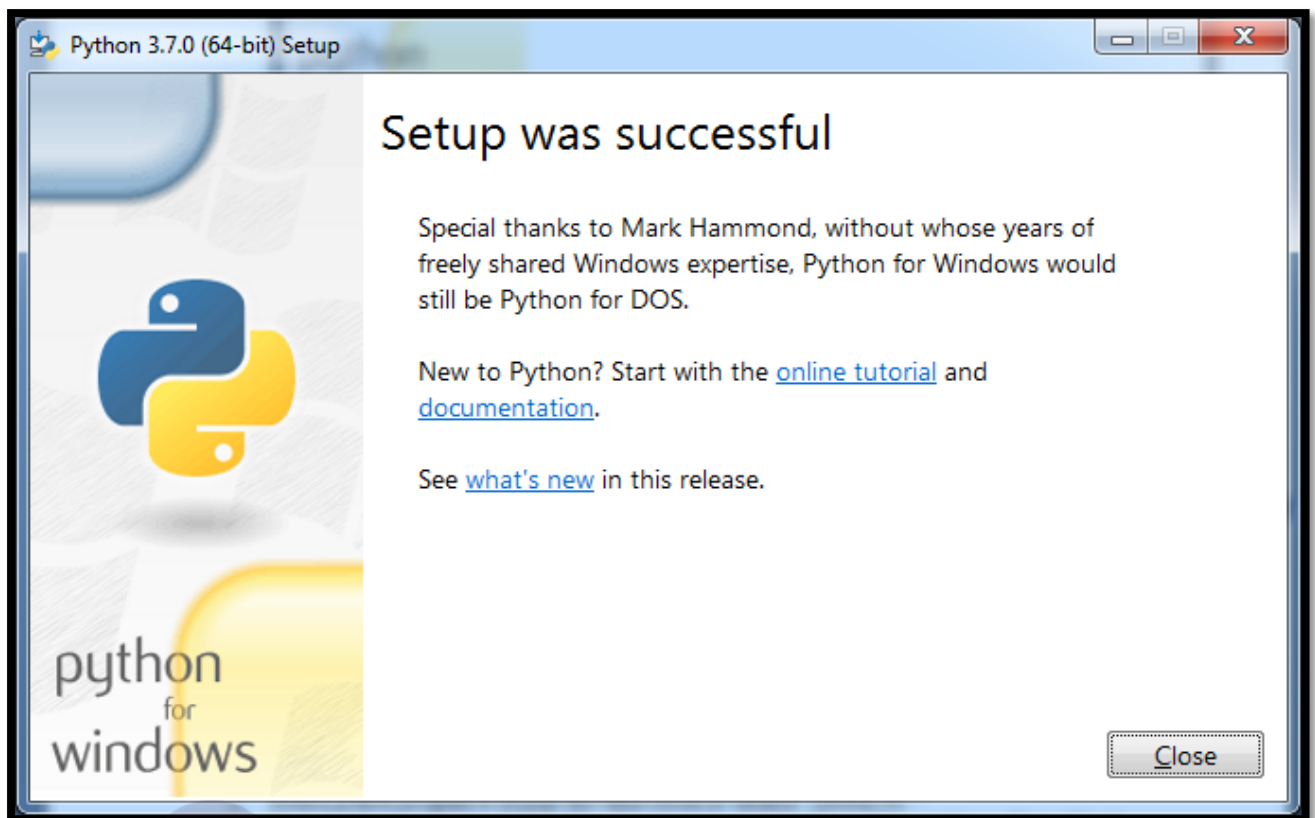
Step 2: Run the installer and click at the option install now.



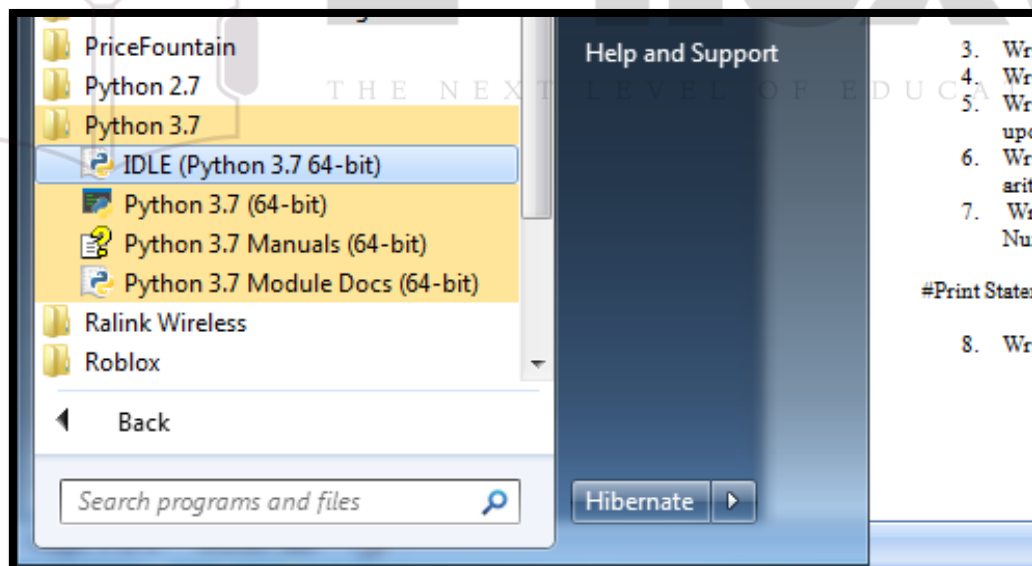
Step 3: Now let the setup run python on the user's PC.



Step 4: When the setup is successfully installed close the tab.



Step 5: Run the IDLE (Python 3.7 64-bit).



Step 6: Start the code for your python program.

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> print ('Hello World !!!!!!!')
Hello World !!!!!!!
>>>
```

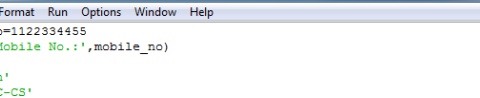
## 2. Execute the following expression statements and display the result

- Basic arithmetic operation example
- 255+100      #Integer
- 397-42
- 71\*5
- 355/113
- 10-28/2
- 2\*\*32      #Long Integer
- 2L\*\*(1024\*8)
- 1./5      #Floating Number
- print (2+3j)\*(4+5j)      #Complex Number
- X=5 and Y=8 find X==Y, X!=Y, X<Y, X>Y, X<=Y, X>=Y      #Boolean Expression

```
>>> 255+100
355
>>> 397-42
355
>>> 71*5
355
>>> 355/113
3.1415929203539825
>>> 10-28/2
-4.0
>>> 2**32
4294967296
>>> 2L**(1024*8)
SyntaxError: invalid syntax
>>> 2**(1024*8)
10907481356194159294629842447337828624482641619962326924318327861897213318491192952162642345252019872239572917961570252731098708201771840636109797650775547990789062988
4219298953860982522804820515969685161359163819677188654260932456012129055390188630101790025253579991720001007960002653836800905297805880952350501630195475653911005312
36456001484742603529355124584392891875276869627934408805561751569434994540667782514081490061610592025643850457801332649356583604724240738244281224513151775751916489922
63657437224322773680750276278830452065017927617009456991684972578796838517370499969009611205156550501155612714914925153421057489666295470327863215057308284302216649703
24396138635251626409516168005427623435996308921691446181187406395310665404885739434832877428167407495370993511868756359970390117021823616749458620969857006263612082706
71540815706657513728102702231092756491027675916052087830463241104936456875492096732298245918476342738379027244843801852697776494107271561158043469082745933999196141424
27414105991174260605564837637563145276113626586283836862115799363802087853767554336789915694234433955666315070087213535470255670312004130725495834083574396538289360
77080978550578912967907352780054935621561090795845172954115972927479877527738560008204118558930004777748727761853813510493840581861598652211605960308356405941821189714
03786872621948149872760365361629885617482241303348543878532402475141941718301228107820972930353737280457437209522870362277636394529086980625842235514850757103961938744
96298668081887696628157781530793931790931436483407617385818195630029944227907549550612888183084300796486932321791587659180355652161571154029921202761556078731079374774
66841528362987708699450152031231862594203085693838944657061346236704234026821102958954951197087076546186622796294536451620756509351018906023773821539532776208676978589
73196633030889304665169436185078350641568336944530051437491311298834367265238595404904273455928723949525227184617404367854754610474377019768025576605881038077270771
7942221977090385438585844095492116099852538903974655703943973086090930596963360767529964938414598185705963754561497355827813623833288906309004280173214248086639626713
33528009232758350873059614118723781422101460198615747386855096896089189180441339558524822867541113212638793675567650340362970031930023397828465318547238244232026015189
6896604188229765008154376106522542701635956508754338511471232142272666054035817814690908065764689505877661997186505665475715792896
>>> 1./5
0.2
```

```
>>> print (2+3j)*(4+5j)
(-7+22j)
```

```
>>> x=5
>>> y=8
>>> x==y
False
>>> x!=y
True
>>> x<y
True
>>> x>y
False
>>> x<=y
True
>>> x>=y
False
```

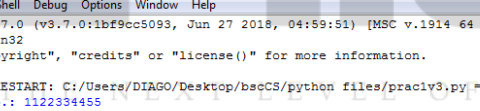


```
prac1v3.py - C:/Users/DIAGO/Desktop/bscCS/python files/prac1v3.py (3.7.0)
File Edit Format Run Options Window Help

mobile_no=1122334455
print ('Mobile No.:',mobile_no)

name='Ben'
class='BSC-CS'
address='Bandra'
date_of_birth='01/04/2000'
print ('Name:',name)
print ('Class:',clas)
print ('Address:',address)
print ('Date of Birth:',date_of_birth)

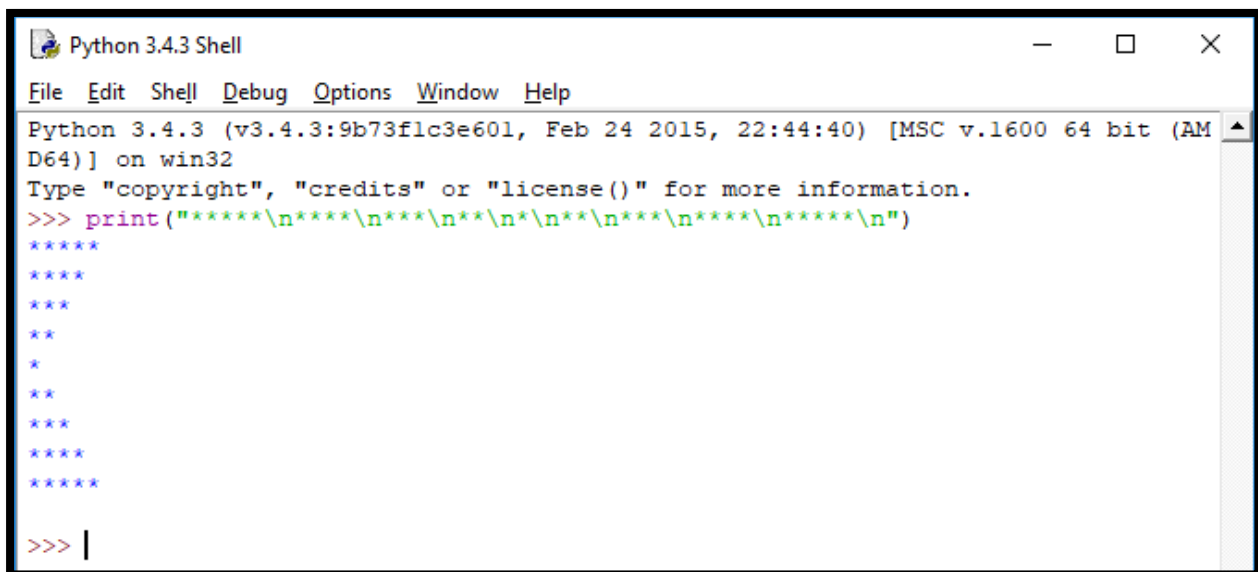
num1=15
num2=3
print ('Add:',num1+num2)
print ('Sub:',num1-num2)
print ('Mul:',num1*num2)
print ('Div:',num1/num2)
print ('Exp:',num1*num2)
```



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/DIAGO/Desktop/bscCS/python files/pract1v3.py =====
Mobile No.: 1122334455
Name: Ben
Class: BSC-CS
Address: Bandra
Date of Birth: 01/04/2000
Add: 18
Sub: 12
Mtl: 45
Div: 5.0
Exp: 3375
>>> |
```



Output Shown:



```
Python 3.4.3 Shell
File Edit Shell Debug Options Window Help
Python 3.4.3 (v3.4.3:9b73flc3e601, Feb 24 2015, 22:44:40) [MSC v.1600 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> print("*****\n*****\n***\n**\n*\n**\n***\n*****\n*****\n")
*****
*****
***
**
*
**
***
****
*****
>>> |
```

b.

Source code:

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

Output Shown:



```
Python 3.4.3 Shell
File Edit Shell Debug Options Window Help
Python 3.4.3 (v3.4.3:9b73flc3e601, Feb 24 2015, 22:44:40) [MSC v.1600 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> print("*****\n*****\n*****\n*****\n**\n**\n**")
*****
*****
*****
*****
**
**
*
>>> |
```

#assert Statements

- Write a python program to declare a variable “contact check” assign a numerical value to it. Demonstrate the use of assert statement to check the correct contact number stored in variable.

Source code:

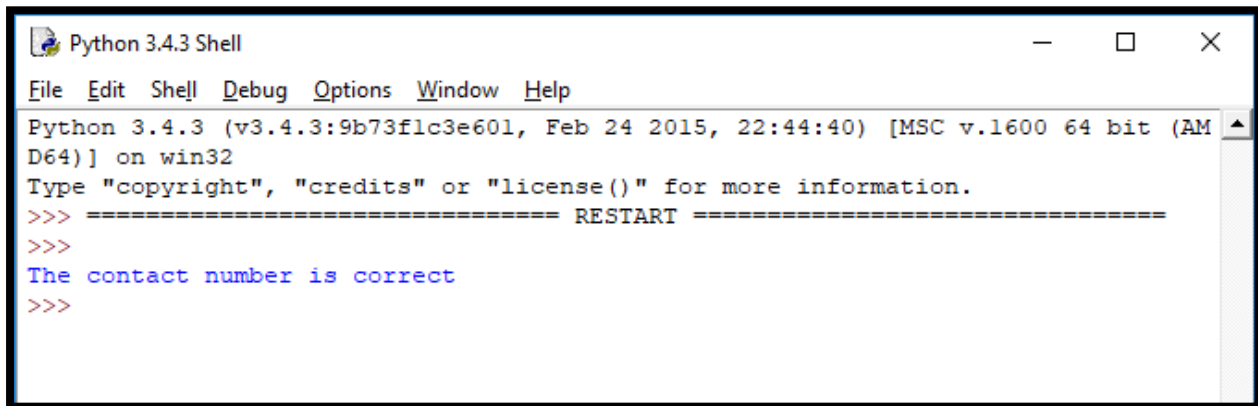
For correct number:

```
contact_check=9892813430
```

```
assert (contact_check>0),"caught by assert"
```

```
print("The contact number is correct")
```

Output Shown:



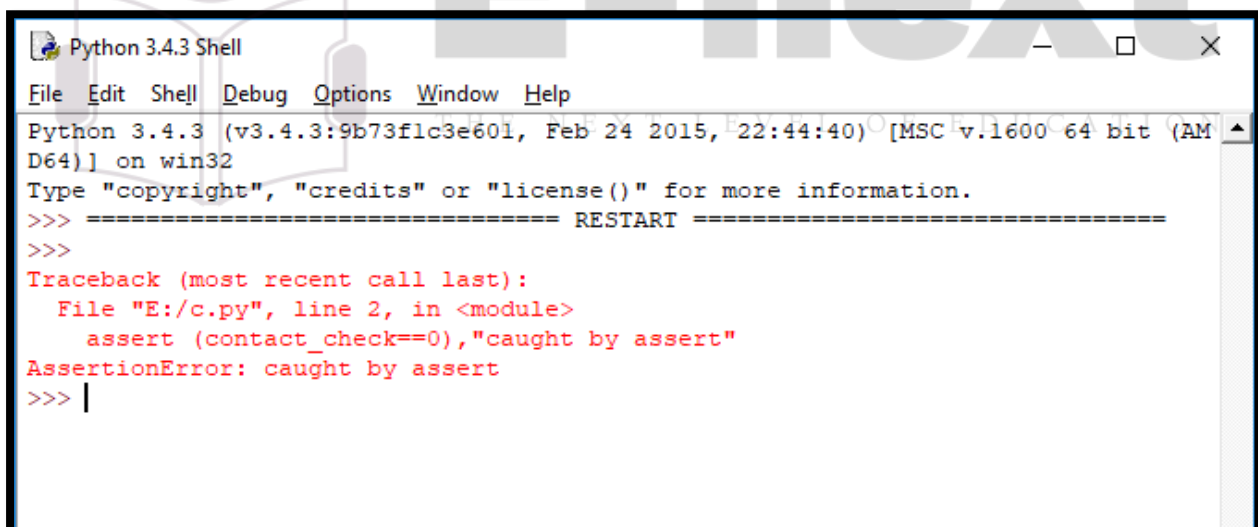
```
Python 3.4.3 Shell
File Edit Shell Debug Options Window Help
Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:44:40) [MSC v.1600 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
The contact number is correct
>>>
```

For incorrect response:

Source code:

```
contact_check=9892813430
assert (contact_check==0),"caught by assert"
print("The contact number is correct")
```

Output Shown:



```
Python 3.4.3 Shell
File Edit Shell Debug Options Window Help
Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:44:40) [MSC v.1600 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Traceback (most recent call last):
  File "E:/c.py", line 2, in <module>
    assert (contact_check==0),"caught by assert"
AssertionError: caught by assert
>>> |
```

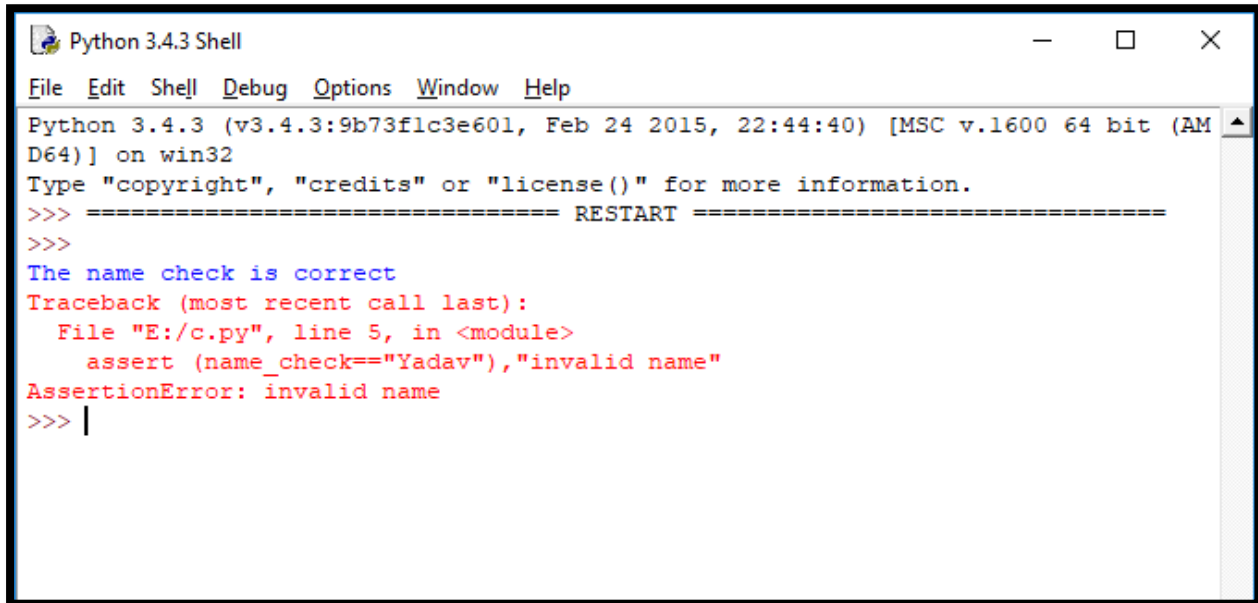
- 10. Write a python program to declare a variable “Name check” assign a string value to it. Demonstrate the use of assert statement to check the correct name stored in variable.**

Source code:

```
name_check= "Shravan"
assert (name_check=="Shravan"),"invalid name"
print("The name check is correct")
assert (name_check=="Yadav"),"invalid name"
print("The name check is correct")
```



Output Shown:



```
Python 3.4.3 Shell
File Edit Shell Debug Options Window Help
Python 3.4.3 (v3.4.3:9b73flc3e601, Feb 24 2015, 22:44:40) [MSC v.1600 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
The name check is correct
Traceback (most recent call last):
  File "E:/c.py", line 5, in <module>
    assert (name_check=="Yadav"),"invalid name"
AssertionError: invalid name
>>> |
```

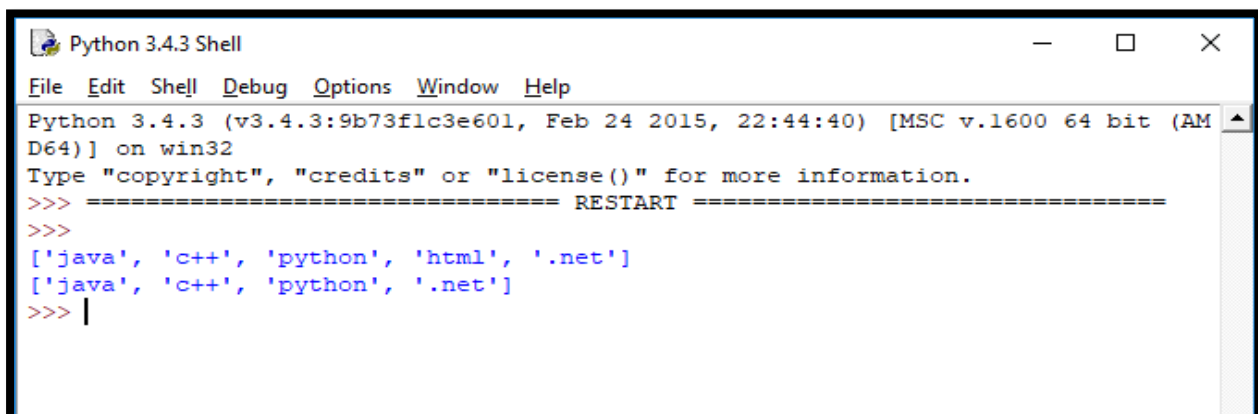
# Delete statements.

### 11. Demonstrate the working of del()

Source code:

```
languages=['java','c++','python','html','.net']
print(languages)
del languages[3]
print(languages)
```

Output Shown:



```
Python 3.4.3 Shell
File Edit Shell Debug Options Window Help
Python 3.4.3 (v3.4.3:9b73flc3e601, Feb 24 2015, 22:44:40) [MSC v.1600 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
['java', 'c++', 'python', 'html', '.net']
['java', 'c++', 'python', '.net']
>>> |
```

## Practical 2

Aim: Script and interactive modes; defining a function in the two modes; executing a script; interactively executing a statement list (semicolon-separated sequence of simple statements); the input function.

(A)

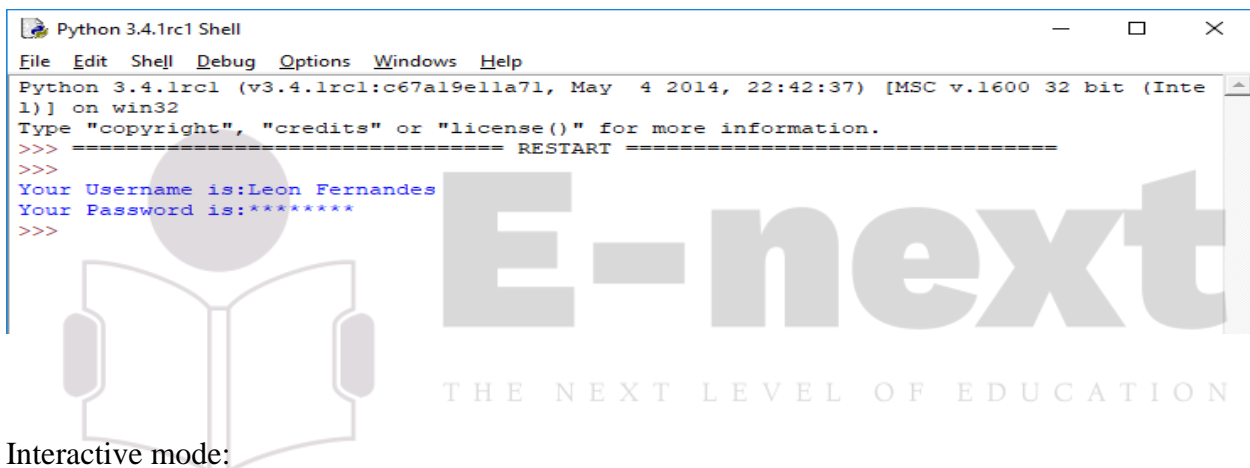
**1. Write a python program using (script and interactive mode) to declare the variables (“User Name & Password”) with some meaningful values and display the following output.**

Source code:

Script modes:

```
print("Your Username is:Leon Fernandes")
```

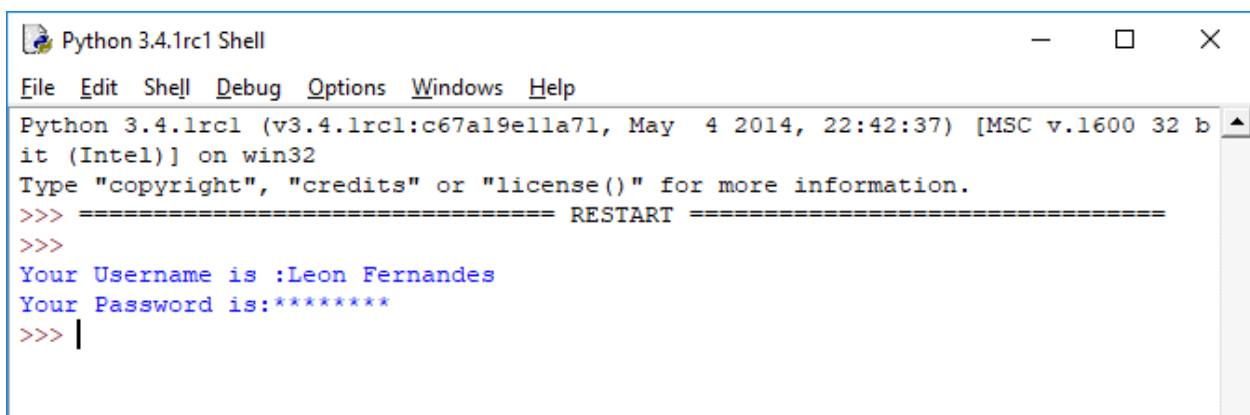
```
print("Your Password is:*****")
```



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Your Username is:Leon Fernandes
Your Password is:*****
>>>
```

Interactive mode:

```
print("Your Username is :Leon Fernandes\nYour Password is:*****")
```



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Your Username is :Leon Fernandes
Your Password is:*****
>>> |
```

**2. Write a python program using (script and interactive mode) to display “Facebook” sign up confirmation and display the following output.**

Source code:

Script mode:

```
print("*****WELCOME TO FACEBOOK CONFIRMATION PAGE*****")

print("====VERIFY YOUR DETAILS====")

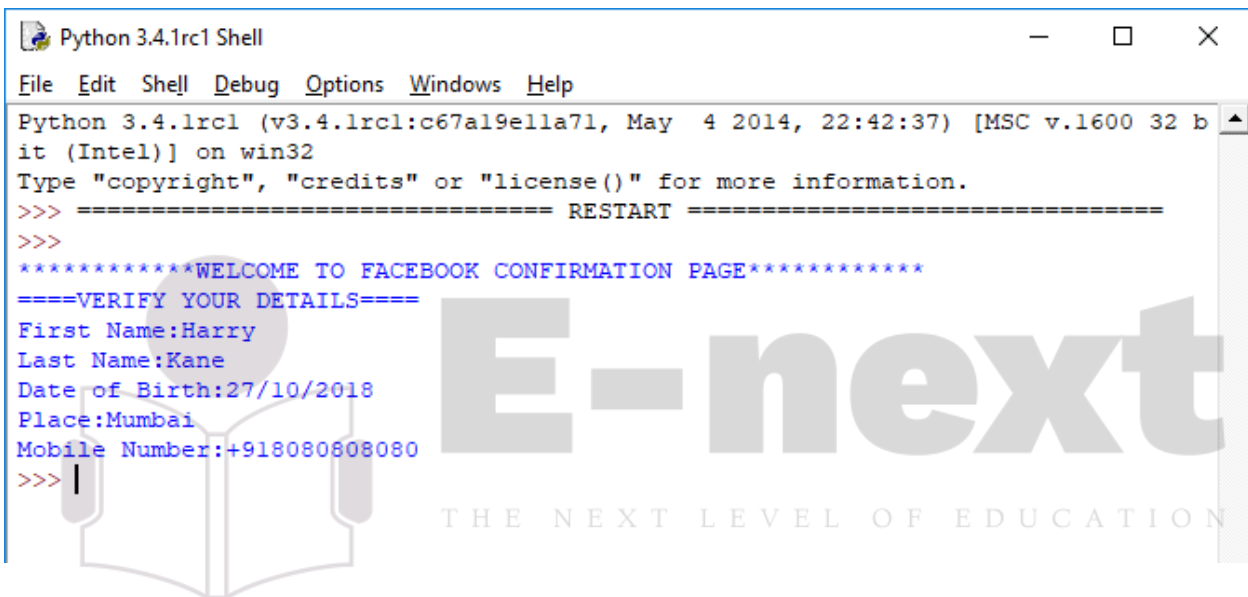
print("First Name:Harry")

print("Last Name:Kane")

print("Date of Birth:27/10/2018")

print("Place:Mumbai")

print("Mobile Number:+918080808080")
```



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
*****WELCOME TO FACEBOOK CONFIRMATION PAGE*****
====VERIFY YOUR DETAILS====
First Name:Harry
Last Name:Kane
Date of Birth:27/10/2018
Place:Mumbai
Mobile Number:+918080808080
>>> |
```

Interactive mode:

```
CONFIRMATION PAGE*****\n=====VERIFY YOUR DETAILS=====\\nFirst
Name:Harry\\nLast Name:Kane\\nDate of Birth:27/10/2018\\nPlace:Mumbai\\nMobile
Number:+918080808080")
```



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
*****WELCOME TO FACEBOOK CONFIRMATION PAGE*****
=====VERIFY YOUR DETAILS=====
First Name:Harry
Last Name:Kane
Date of Birth:27/10/2018
Place:Mumbai
Mobile Number:+918080808080
>>> |

```

(B) Defining a function in the two modes

**1. Write a python program to define a function “Display” and use this function to display the current date, day and time (use both script and interactive mode).**

Source code:

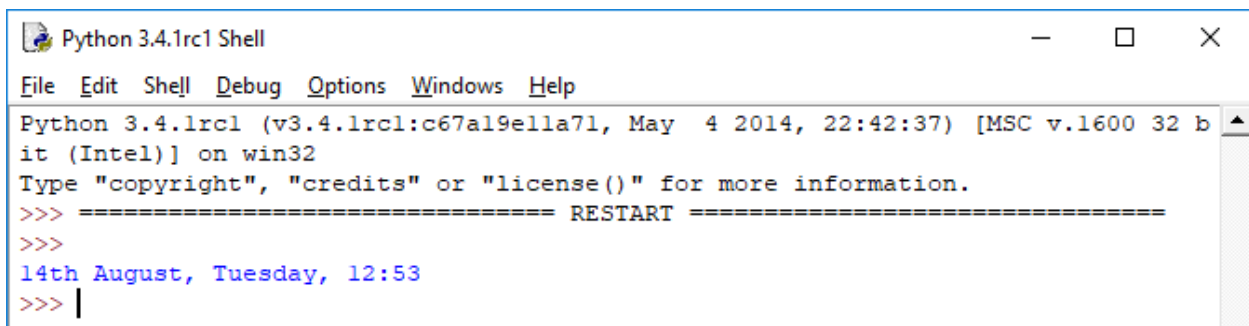
Script mode:

```

def display():
    print("14th August, Tuesday, 12:53")

display()

```



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
14th August, Tuesday, 12:53
>>> |

```

Interactive mode:

```

def display():
    print("14th August Tuesday 12:53")

display()

```

```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
14th August Tuesday 12:53
>>>
```

**2. Write a python program to define a function “Add” and use this function to display the addition of two numbers (use both script and interactive mode).**

Source code:

Script mode:

```
def Add():

    num1=7

    num2=10

    print("Addition of num1 and num2:",num1+num2)
```

Add()

```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Addition of num1 and num2: 17
>>> |
```

Interactive mode:

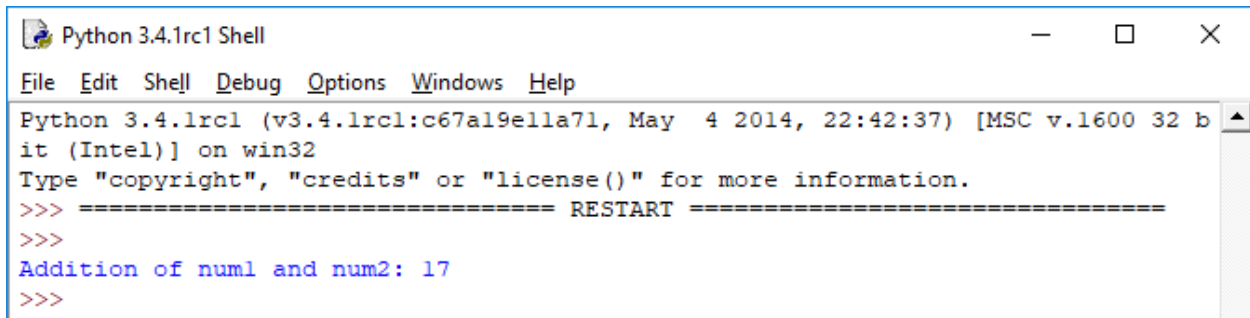
```
def Add():

    num1=7

    num2=10

    print("Addition of num1 and num2:",num1+num2)
```

Add()



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Addition of num1 and num2: 17
>>>
```

### (C) The Input Function

**1. Write a python program to take the input (i.e. radius of a circle) from the user and display the area of the circle and circumference of the circle.**

Source code:

```
print("$$$$$Area and Circumference of a Circle$$$$$")
```

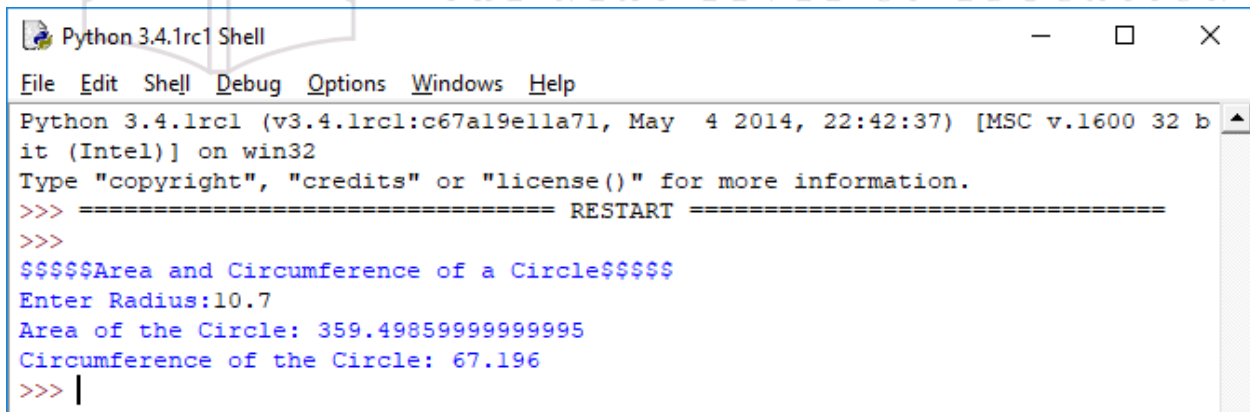
```
radius=float(input("Enter Radius:"))
```

```
area=3.14*radius**2
```

```
circumference=2*3.14*radius
```

```
print("Area of the Circle:",area)
```

```
print("Circumference of the Circle:",circumference)
```



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
$$$$$Area and Circumference of a Circle$$$$$
Enter Radius:10.7
Area of the Circle: 359.49859999999995
Circumference of the Circle: 67.196
>>> |
```

**2. Write a python program to take the input (i.e. length and breadth) from the user and display the area of the rectangle.**

Source code:

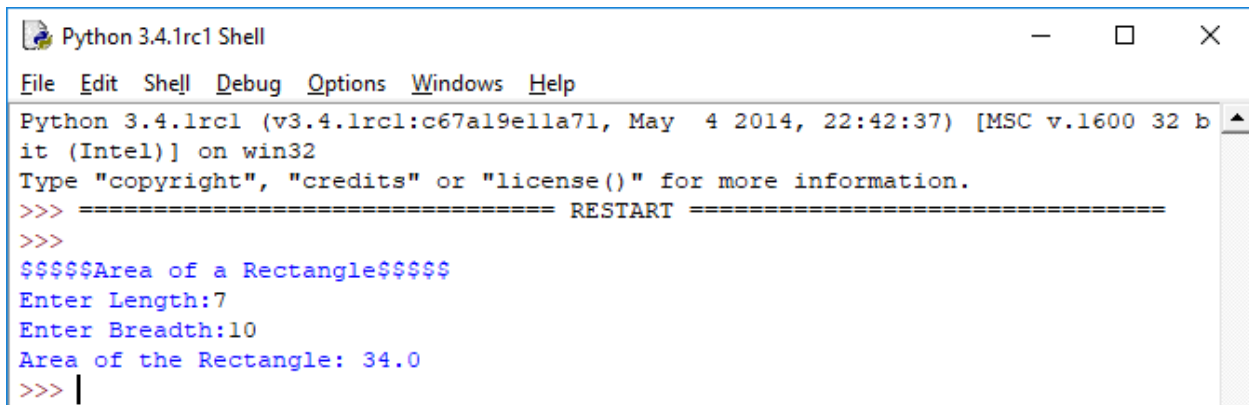
```
print("$$$$$Area of a Rectangle$$$$$")
```

```
length=float(input("Enter Length:"))
```

```
breadth=float(input("Enter Breadth:"))
```

```
area=2*(length+breadth)

print("Area of the Rectangle:",area)
```



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
$$$$$Area of a Rectangle$$$$$
Enter Length:7
Enter Breadth:10
Area of the Rectangle: 34.0
>>> |
```

**3. Write a python program to take the input (i.e. radius of the circle) from the user and display the area of the circle.**

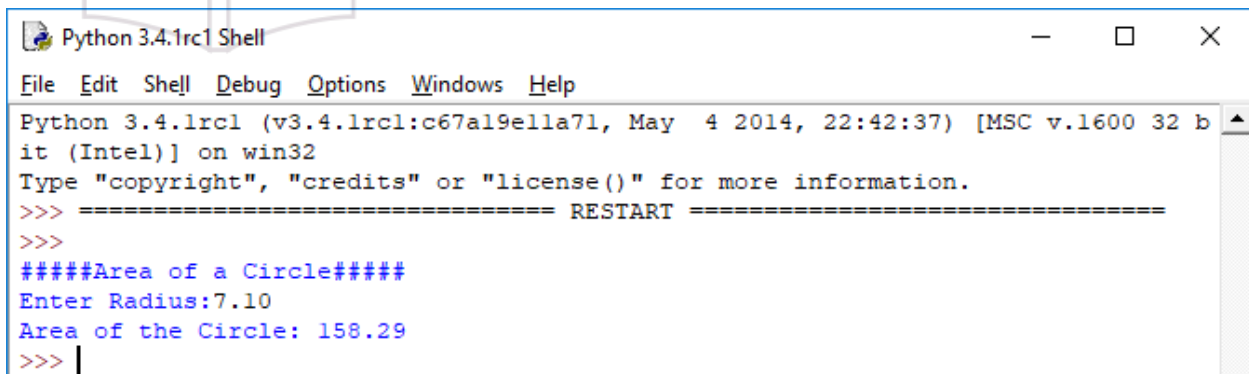
Source code:

```
print("#####Area of a Circle#####")

radius=float(input("Enter Radius:"))

area=format(3.14*radius**2,".2f")

print("Area of the Circle:",area)
```



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
#####Area of a Circle#####
Enter Radius:7.10
Area of the Circle: 158.29
>>> |
```

**4. Write a python program to take the input (i.e. table of) from the user and display the multiplication table of it.**

Source code:

```
print("#####Multiplication Table#####")

n=int(input("Enter the Number:"))

print(n,'X 1=',n*1)
```

```

print(n,'X 2=',n*2)

print(n,'X 3=',n*3)

print(n,'X 4=',n*4)

print(n,'X 5=',n*5)

print(n,'X 6=',n*6)

print(n,'X 7=',n*7)

print(n,'X 8=',n*8)

print(n,'X 9=',n*9)

print(n,'X 10=',n*10)

```



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
####Multiplication Table####
Enter the Number:7
7 X 1= 7
7 X 2= 14
7 X 3= 21
7 X 4= 28
7 X 5= 35
7 X 6= 42
7 X 7= 49
7 X 8= 56
7 X 9= 63
7 X 10= 70
>>> |

```

**5. Write a python program to take the input (i.e. Student Name, Class, Roll No, Date of Birth, Address, Contact No) from the user and display the ID-CARD Details.**

Source code:

```

print("$$$$ID-CARD$$$$")

n=input('Enter your Name:')

c=input('Enter your Class:')

r=input('Enter your Roll No:')

d=input('Enter your Date of Birth:')

a=input('Enter your Address:')

```



```

m=input('Enter your Contact No:')

print('\n$$$$$Verification of Details$$$$$')

print('Name:',n)

print('Class:',c)

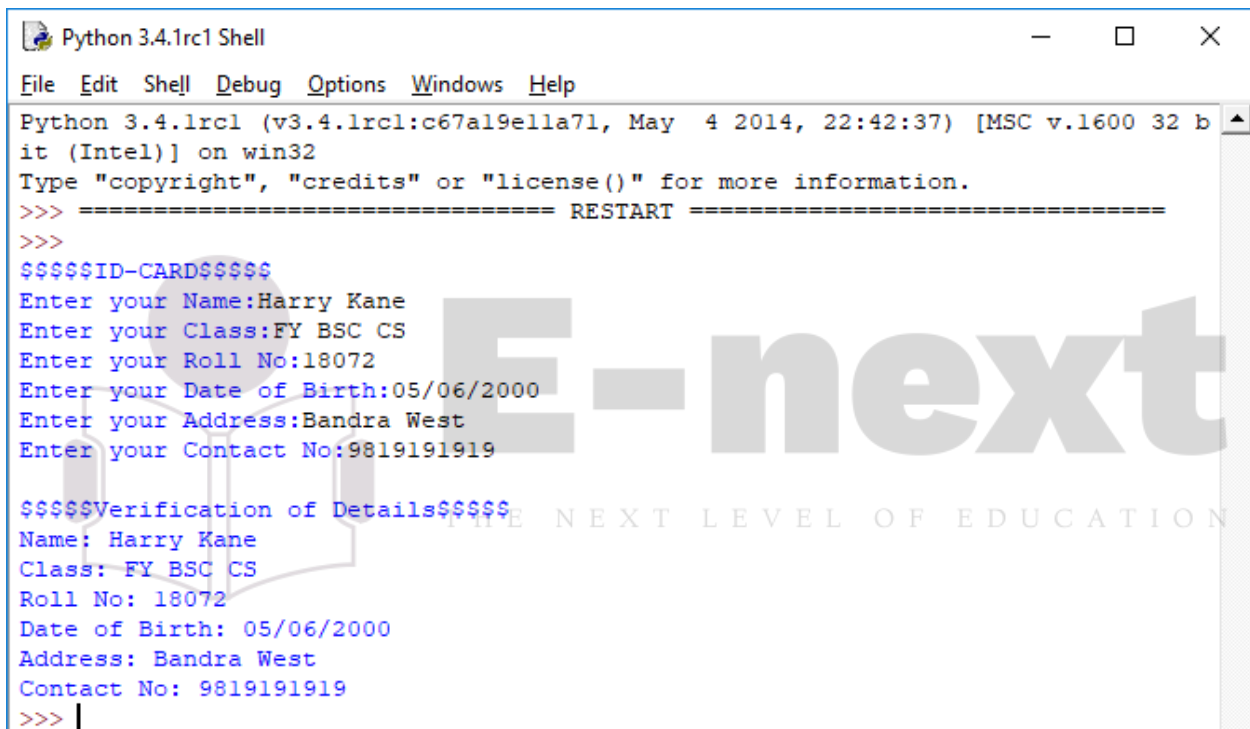
print('Roll No:',r)

print('Date of Birth:',d)

print('Address:',a)

print('Contact No:',m)

```



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
$$$$$ID-CARD$$$$$
Enter your Name:Harry Kane
Enter your Class:FY BSC CS
Enter your Roll No:18072
Enter your Date of Birth:05/06/2000
Enter your Address:Bandra West
Enter your Contact No:9819191919

$$$$$Verification of Details$$$$$
Name: Harry Kane
Class: FY BSC CS
Roll No: 18072
Date of Birth: 05/06/2000
Address: Bandra West
Contact No: 9819191919
>>> |

```

### Practical No. 3

**Aim: Programs based on lists, conditional constructs, the for statement and the range function; interactively using the built-in functions len, sum, max, min**

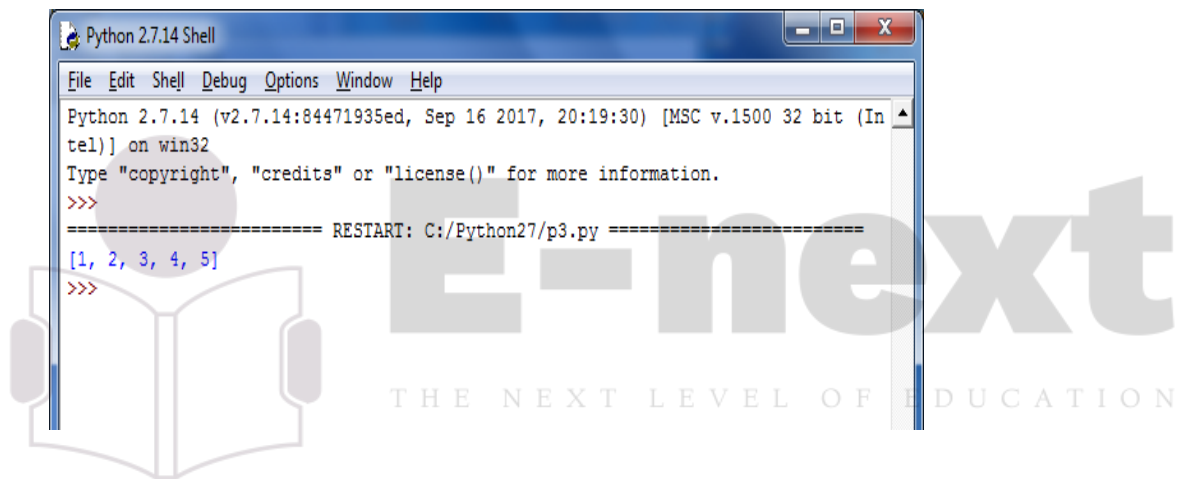
#### (A) Programs based on lists

1. Write a python program to display a list with 5 numerical type members of it.

Source code:

```
Numbers=[1,2,3,4,5]
print(Numbers)
```

Output:

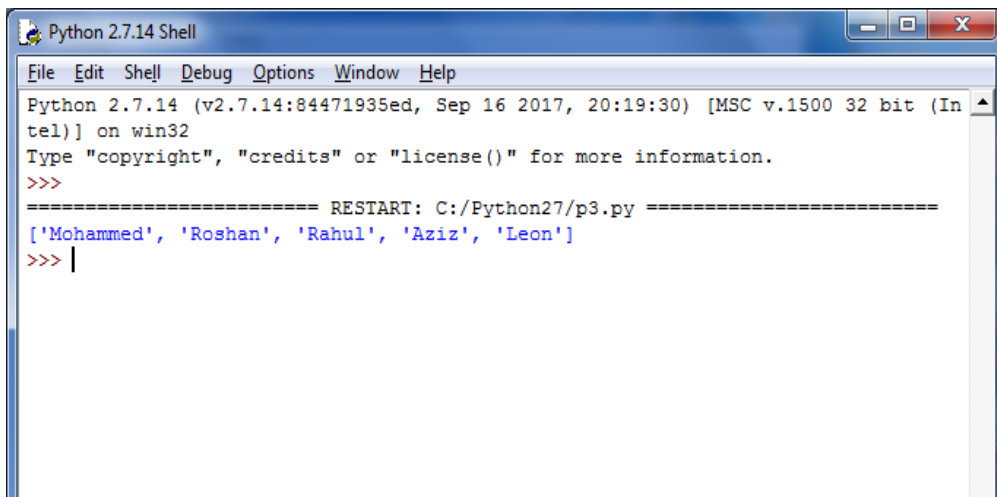


2. Write a python program to display a list with 5 string type members of it.

Source code:

```
Names=["Mohammed","Roshan","Rahul","Aziz","Leon"]
print(Names)
```

Output:



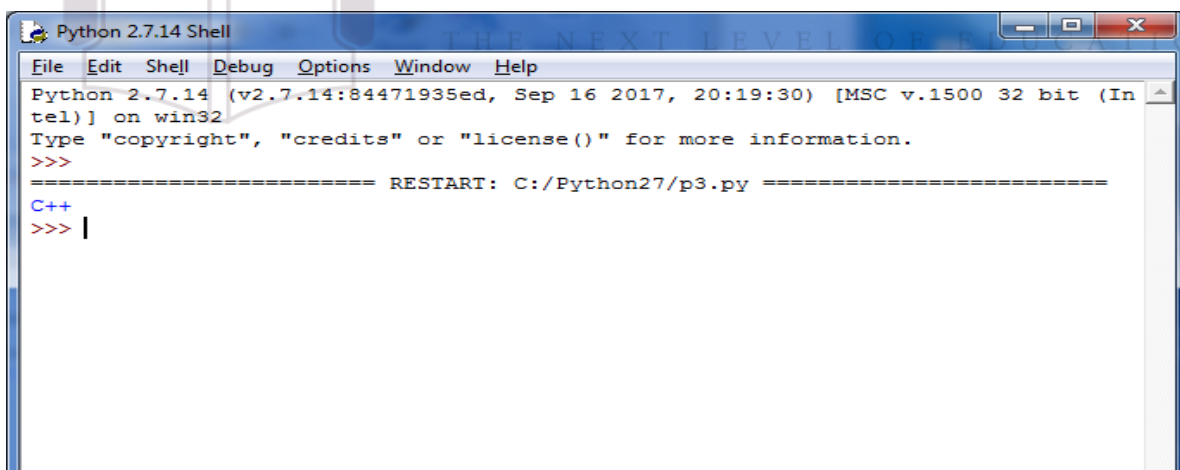
```
Python 2.7.14 Shell
File Edit Shell Debug Options Window Help
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:19:30) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Python27/p3.py =====
['Mohammed', 'Roshan', 'Rahul', 'Aziz', 'Leon']
>>> |
```

### 3. Write a python program to display a specific element of a list.

Source code:

```
languages=['C','C++','Python','Java']
print(languages[1])
```

Output:



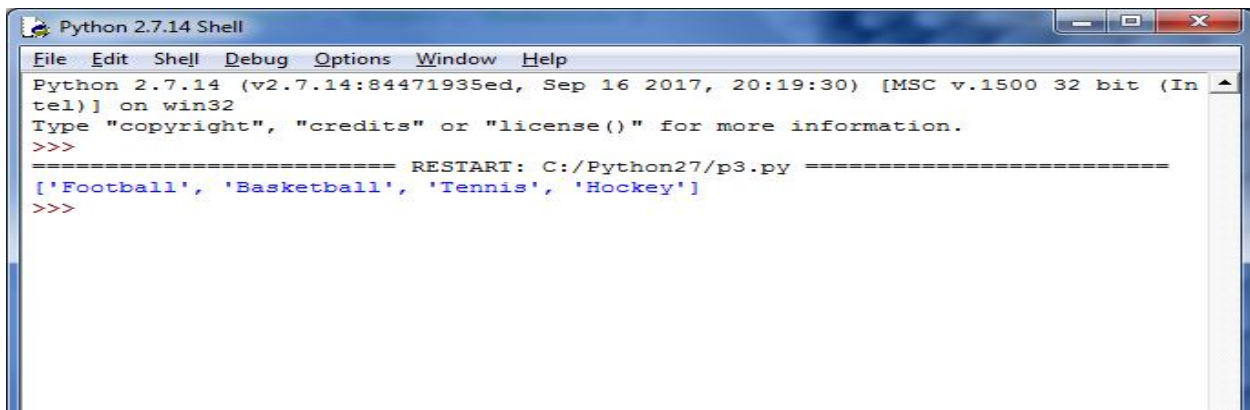
```
Python 2.7.14 Shell
File Edit Shell Debug Options Window Help
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:19:30) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Python27/p3.py =====
C++
>>> |
```

### 4. Write a python program to display the elements of list with in a specific range.

Source code:

```
Games=['Cricket','Football','Basketball','Tennis','Hockey','Badminton']
print(Games[1:5])
```

Output:



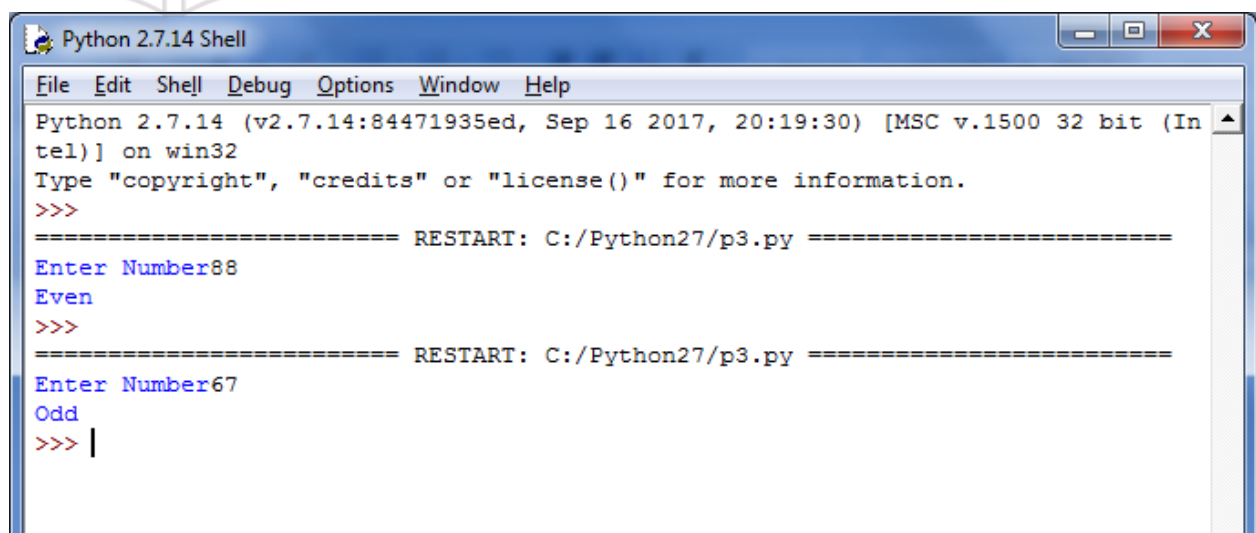
## (B) Programs based on conditional constructs

1. Write a python program to accept an integer number from the user and display whether it is even no or odd number.

Source code:

```
a=input("Enter Number")
if (a%2==0):
    print('Even')
else:
    print('Odd')
```

Output:



2. Write a python program to accept a number from the user and display whether it is positive, negative or zero number.

Source code:

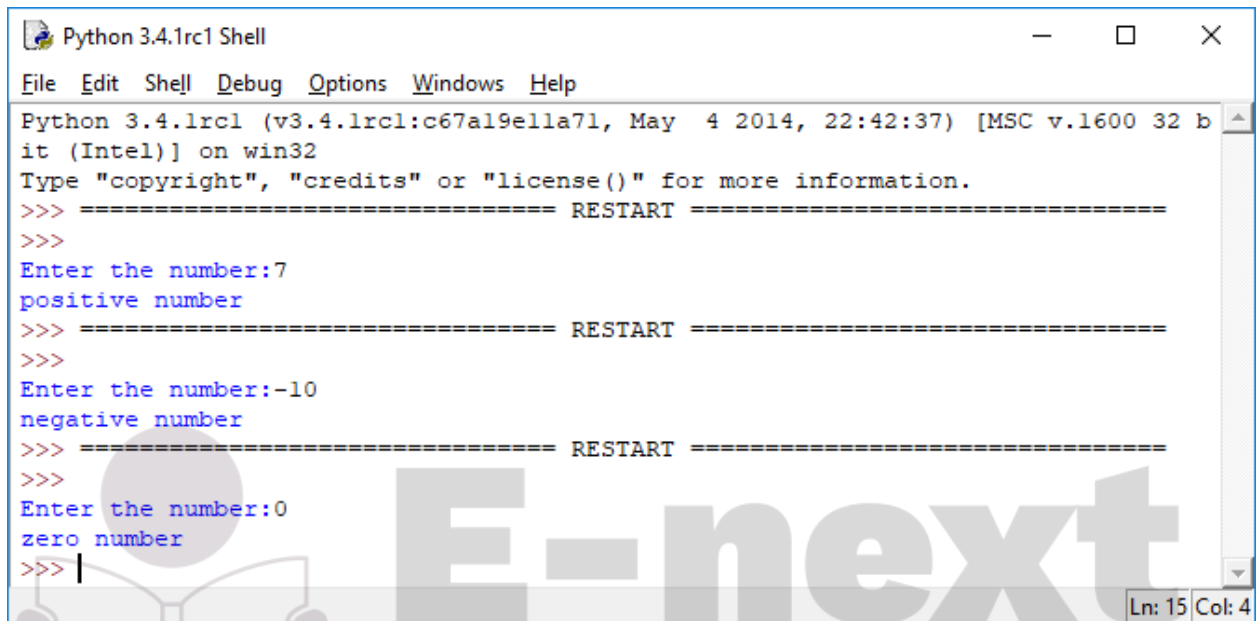
```
a=int(input("Enter the number:"))
```

```

if (a>0):
    print("positive number")
elif (a<0):
    print("negative number")
else:
    print("zero number")

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:7
positive number
>>> ===== RESTART =====
>>>
Enter the number:-10
negative number
>>> ===== RESTART =====
>>>
Enter the number:0
zero number
>>> |

```

### 3. Write a python program to accept a number from the user and display whether it is prime number or not.

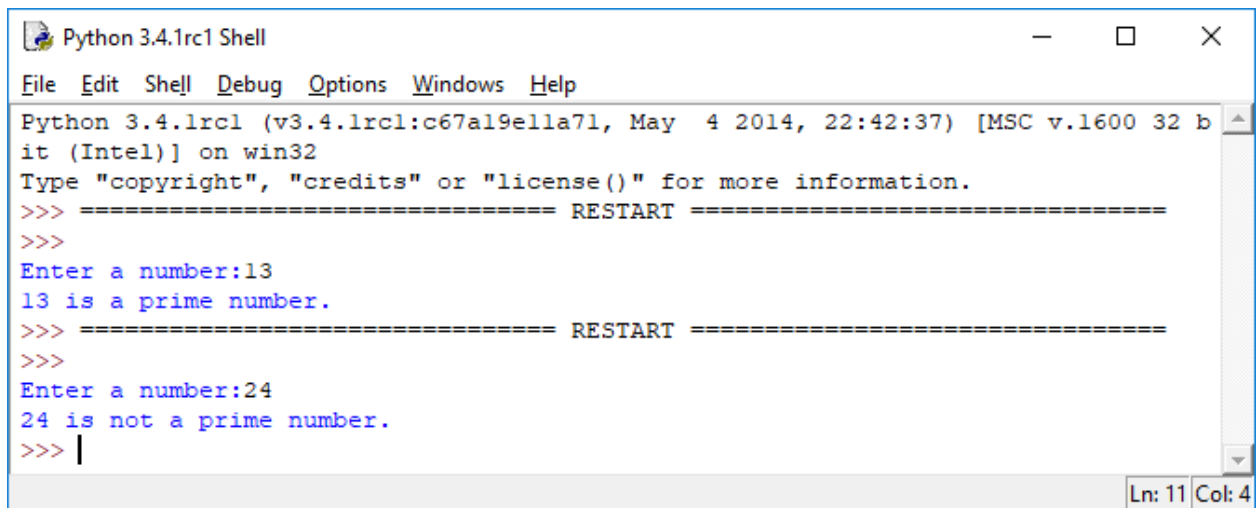
Source code:

```

a=int(input("Enter a number:"))
if a>1:
    for i in range(2,a):
        if (a%i)==0:
            print(a,"is not a prime number.")
            break
        else:
            print(a,"is a prime number.")
            break
else:
    print(a,"is not a prime number.")

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter a number:13
13 is a prime number.
>>> ===== RESTART =====
>>>
Enter a number:24
24 is not a prime number.
>>> |
Ln: 11 Col: 4

```

4. Write a python program to accept the 3 sides of the triangle from the user and display where it scalene, equilateral or isosceles triangle.

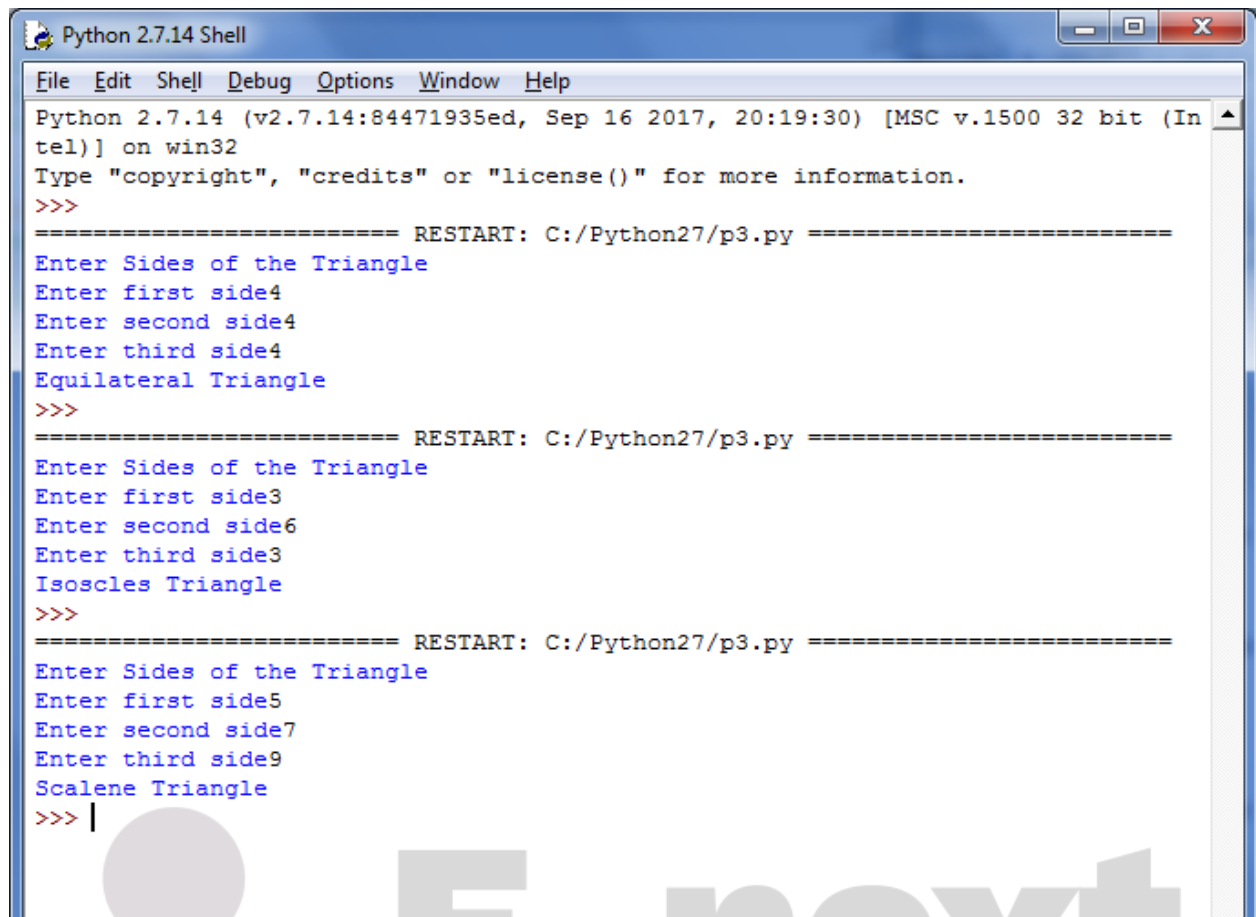
Source code:

```

print("Enter Sides of the Triangle")
a=input("Enter first side")
b=input("Enter second side")
c=input("Enter third side")
if (a==b and b==c):
    print("Equilateral Triangle")
elif (a!=b and b!=c and a!=c):
    print("Scalene Triangle")
else:
    print("Isosceles Triangle")

```

Output:



```

Python 2.7.14 Shell
File Edit Shell Debug Options Window Help
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:19:30) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Python27/p3.py =====
Enter Sides of the Triangle
Enter first side4
Enter second side4
Enter third side4
Equilateral Triangle
>>>
===== RESTART: C:/Python27/p3.py =====
Enter Sides of the Triangle
Enter first side3
Enter second side6
Enter third side3
Isosceles Triangle
>>>
===== RESTART: C:/Python27/p3.py =====
Enter Sides of the Triangle
Enter first side5
Enter second side7
Enter third side9
Scalene Triangle
>>> |

```

5. Write a python program to accept the age from the user and display whether he/she is eligible for voting card or not.

Source code:

```

a=input("Enter Age")
if (a>=18):
    print("Eligible for Voting")
else:
    print("Not Eligible for Voting")

```

Output:

```

Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:19:30) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Python27/p3.py =====
Enter Age21
Eligible for Voting
>>>
===== RESTART: C:/Python27/p3.py =====
Enter Age16
Not Eligible for Voting
>>>

```

### (C) Programs based on for statement

1. Write a python program to accept a number from the user and display the multiplication table of it.

Source code:

```
a=int(input("Enter the Number:"))
```

```
for i in [1,2,3,4,5,6,7,8,9,10]:
```

```
    mul=a*i
```

```
    print(a,"X",i,"=",mul)
```

Output:

```

>>> ===== RESTART =====
>>>
Enter the Number:8
8 X 1 = 8
8 X 2 = 16
8 X 3 = 24
8 X 4 = 32
8 X 5 = 40
8 X 6 = 48
8 X 7 = 56
8 X 8 = 64
8 X 9 = 72
8 X 10 = 80
>>>

```

2. Write a python program to accept a number from the user and display the star pattern upto that number.

Source code:

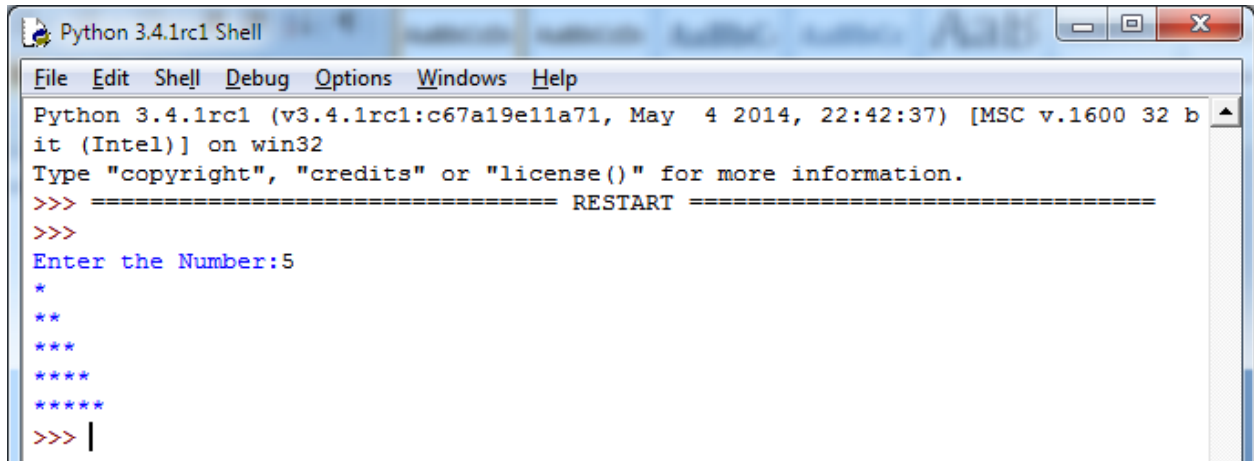
```
a=int(input("Enter the Number:"))
```



```
for i in range(1,a+1):
```

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

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the Number:5
*
**
***
****
*****
>>> |
```

### 3. Write a python program to accept a number from the user and display the list of even numbers and odd number upto the number accepted by the user.

Source code:

```
a=int(input("Enter the number:"))
```

```
for i in range(1,a+1):
```

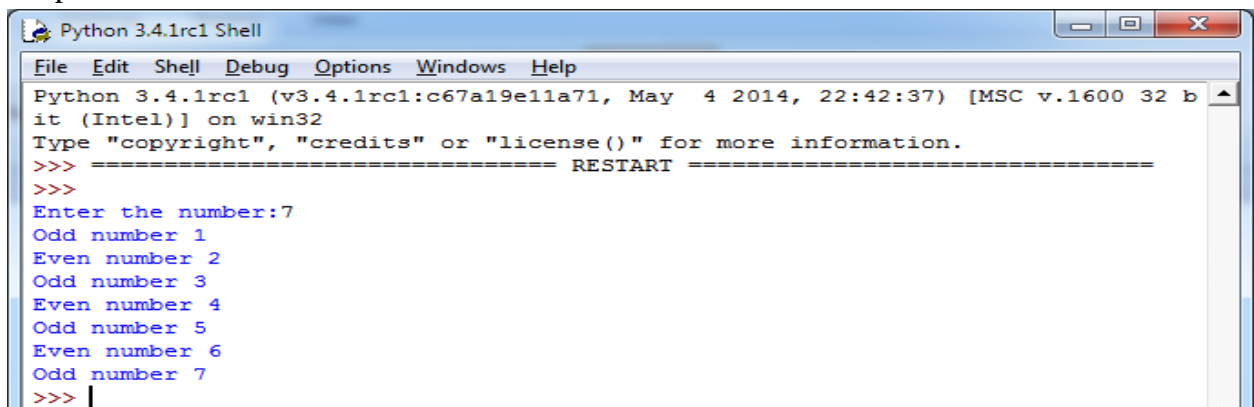
```
    if i%2==0:
```

```
        print("Even number",i)
```

```
    else:
```

```
        print("Odd number",i)
```

Output:



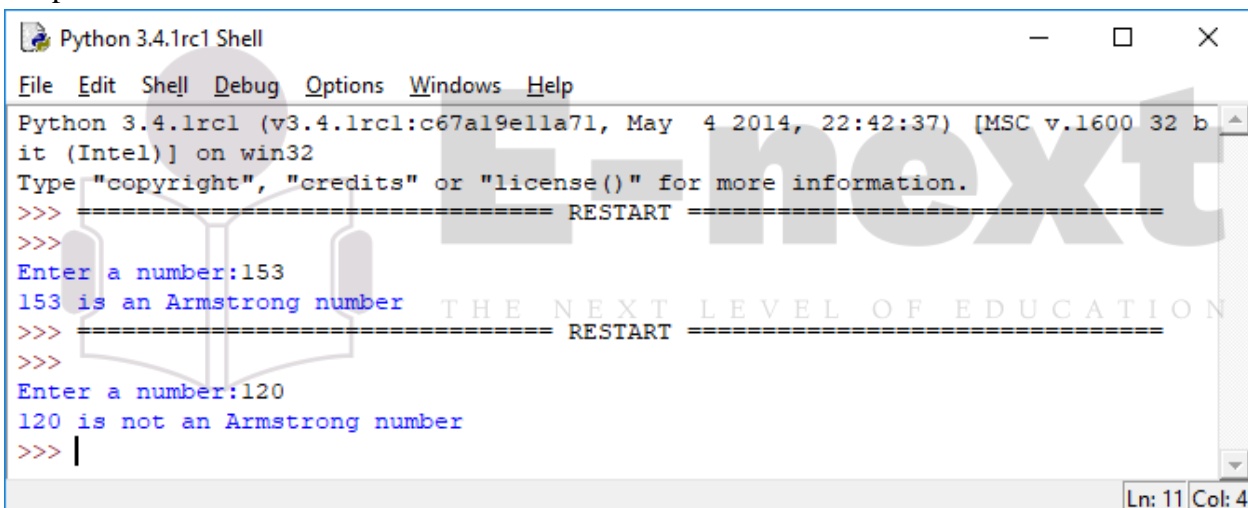
```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:7
Odd number 1
Even number 2
Odd number 3
Even number 4
Odd number 5
Even number 6
Odd number 7
>>> |
```

#### 4. Write a python program to accept a number from the user and display the Armstrong number upto that number.

Source code:

```
n=int(input("Enter a number:"))
s=0
t=n
while t>0:
    d=t%10
    s+=d**3
    t//=10
if n==s:
    print(n,"is an Armstrong number")
else:
    print(n,"is not an Armstrong number")
```

Output:



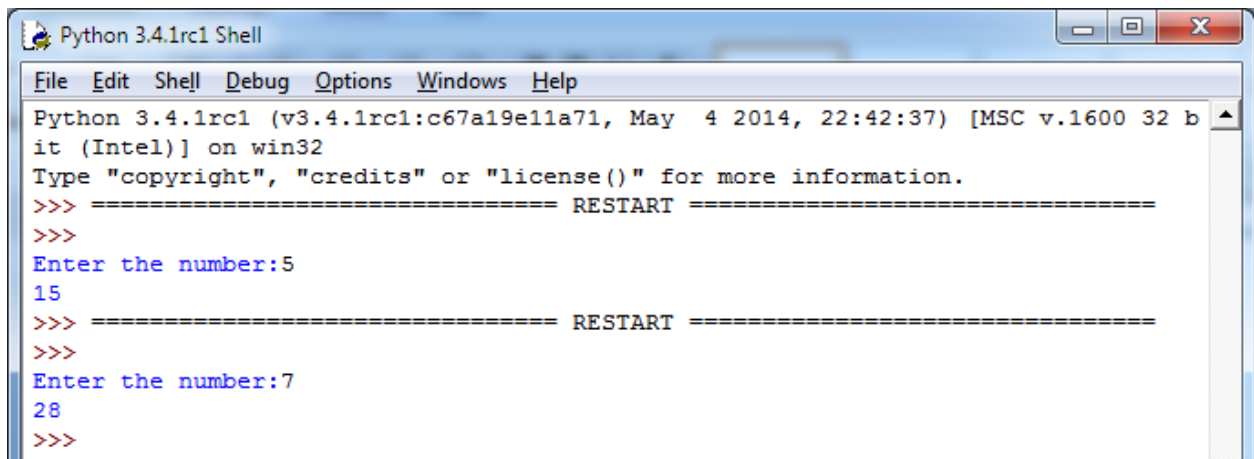
```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter a number:153
153 is an Armstrong number
>>> ===== RESTART =====
>>>
Enter a number:120
120 is not an Armstrong number
>>> |
```

#### 5. Write a python program to display the sum of n integer.

Source code:

```
a=int(input("Enter the number:"))
m=0
for i in range(1,a+1):
    m=i+m
print(m)
```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:5
15
>>> ===== RESTART =====
>>>
Enter the number:7
28
>>>

```

#### (D) Programs based on range function

1. Write a python program to display the number from 0 to 100 using range function,

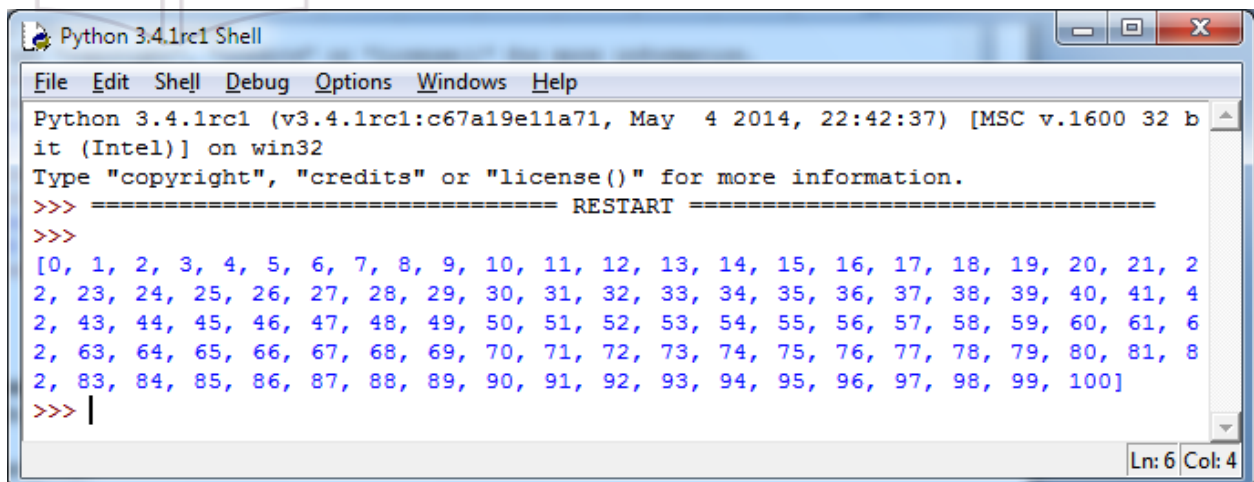
Source code:

```

num=[]
for i in range(0,101):
    num.append(i)
print(num)

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 2
2, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 4
2, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 6
2, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 8
2, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100]
>>> |
Ln: 6 Col: 4

```

2. Write a python program to display the numbers from the 50 to 150 using range function.

Source code:

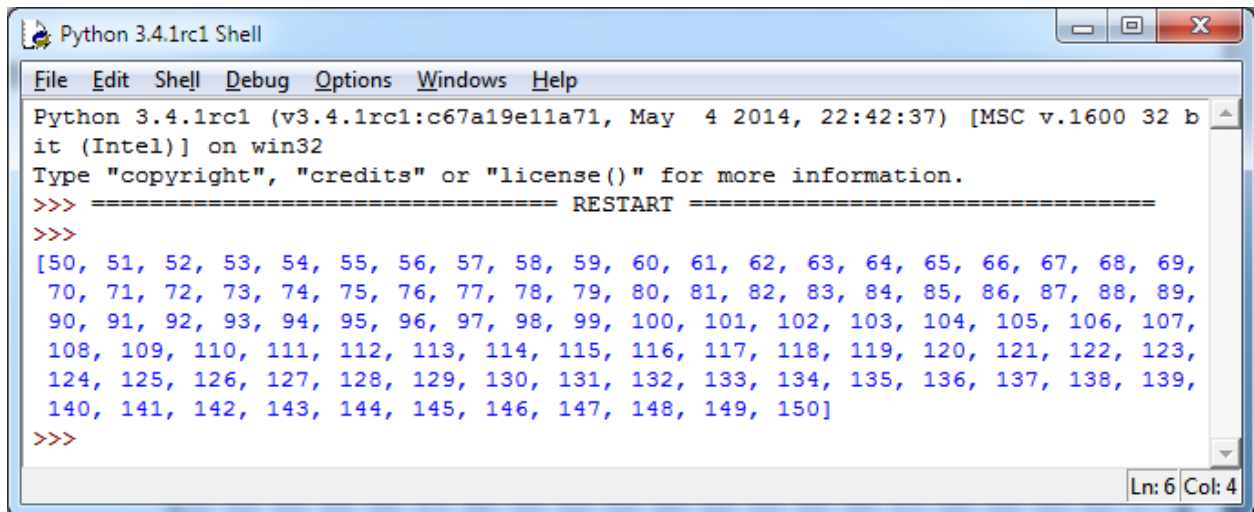
```

num=[]
for i in range(50,151):
    num.append(i)

```

```
print(num)
```

Output:



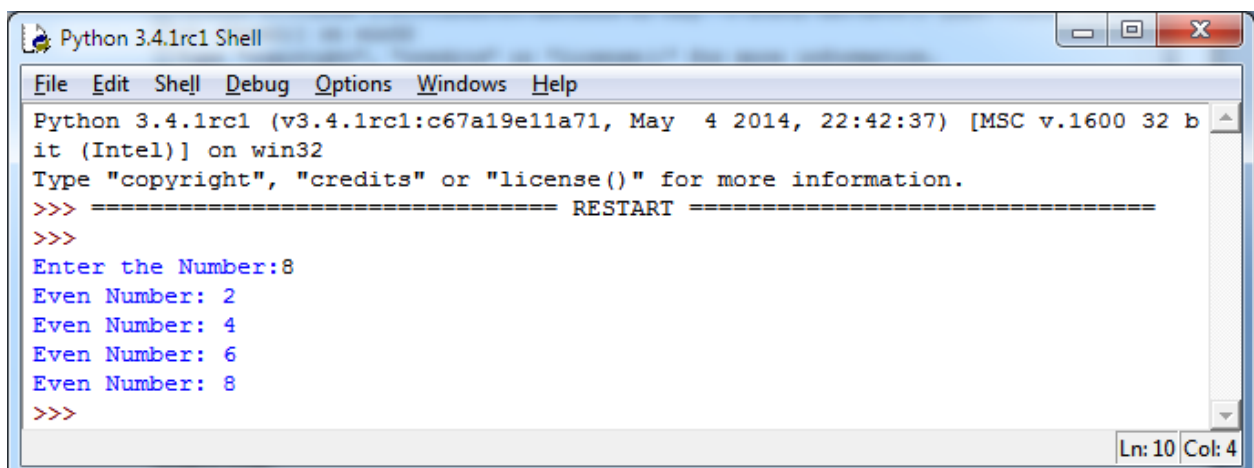
```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
[50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69,
70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89,
90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107,
108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123,
124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139,
140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150]
>>>
```

### 3. Write a python program to display the even numbers upto the limit entered by the user.

Source code:

```
a=int(input("Enter the Number:"))
for i in range(1,a+1):
    if i%2==0:
        print("Even Number:",i)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the Number:8
Even Number: 2
Even Number: 4
Even Number: 6
Even Number: 8
>>>
```

### 4. Write a python program to display the odd numbers upto the limit entered by the user.

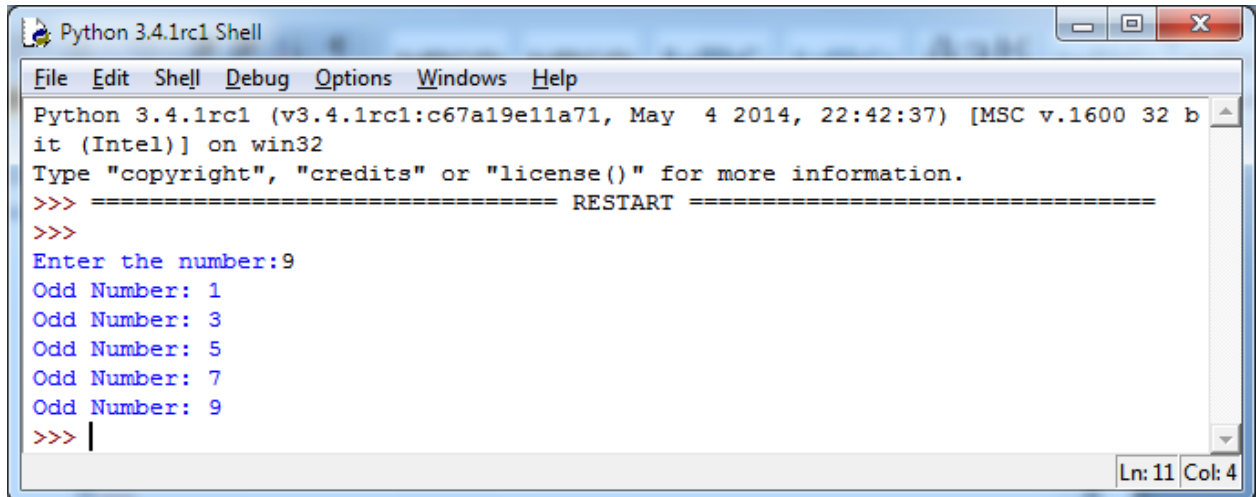
Source code:

```

a=int(input("Enter the number:"))
for i in range(1,a+1):
    if i%2!=0:
        print("Odd Number:",i)

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:9
Odd Number: 1
Odd Number: 3
Odd Number: 5
Odd Number: 7
Odd Number: 9
>>> |
Ln: 11 Col: 4

```

5. Write a python program to display the negative numbers starting from 0 and going upto the limit entered by the user.

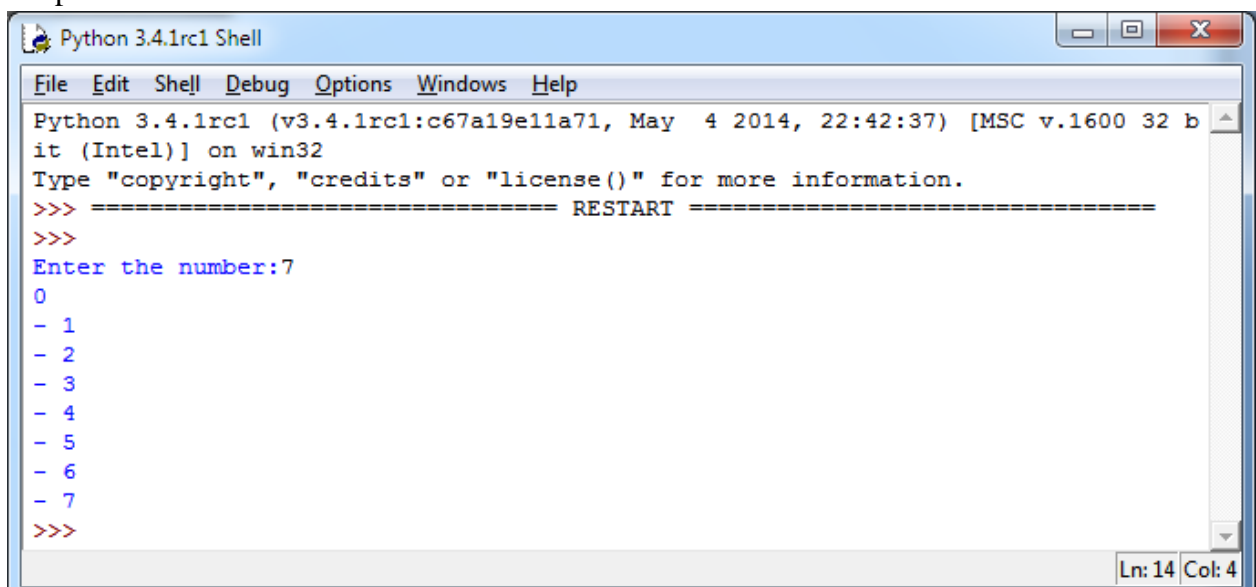
Source code:

```

a=int(input("Enter the number:"))
print(0)
for i in range(1,a+1):
    print("-",i)

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:7
0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
>>>
Ln: 14 Col: 4

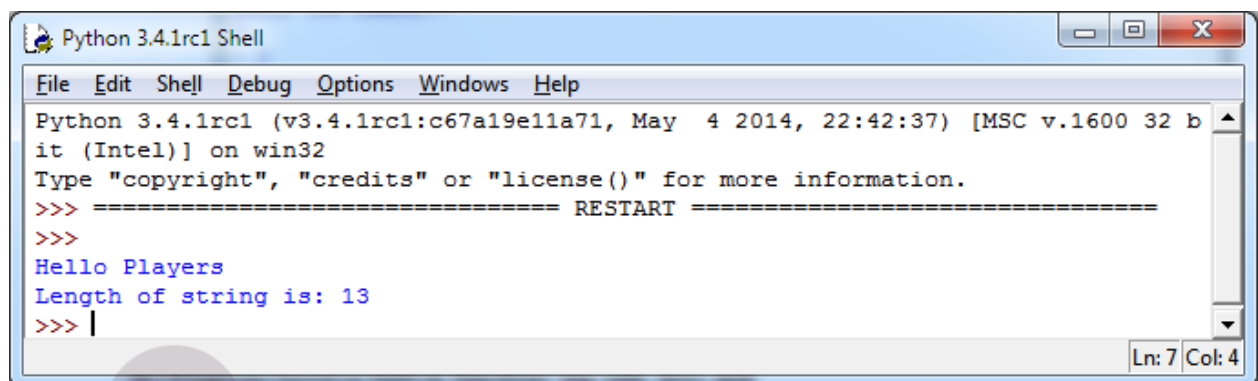
```

**(E) Programs based on built-in functions: len, sum, max, min****1. Write a python program to display the length of the string stored in variable.**

Source code:

```
a="Hello Players"
b=len(a)
print(a)
print("Length of string is:",b)
```

Output:



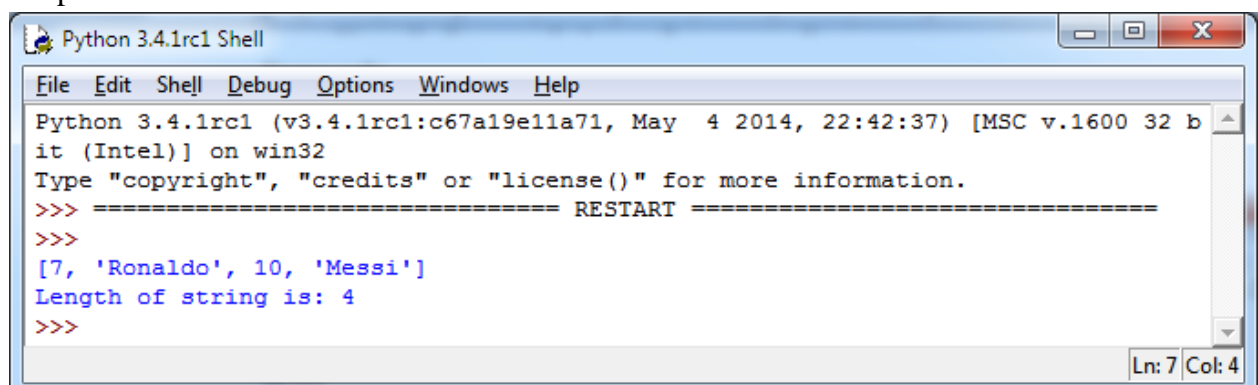
```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Hello Players
Length of string is: 13
>>> |
```

**2. Write a python program to display the length of list**

Source code:

```
a=[7,"Ronaldo",10,"Messi"]
b=len(a)
print(a)
print("Length of string is:",b)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
[7, 'Ronaldo', 10, 'Messi']
Length of string is: 4
>>>
```

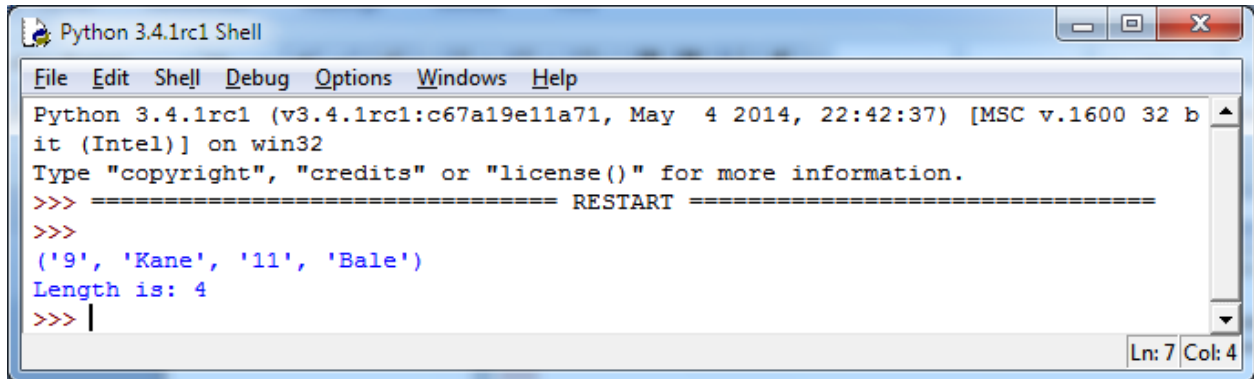
**3. Write a python program to display the length of the tuples**

Source code:

```
tup=("9","Kane","11","Bale")
b=len(tup)
```

```
print(tup)
print("Length is:",b)
```

Output:



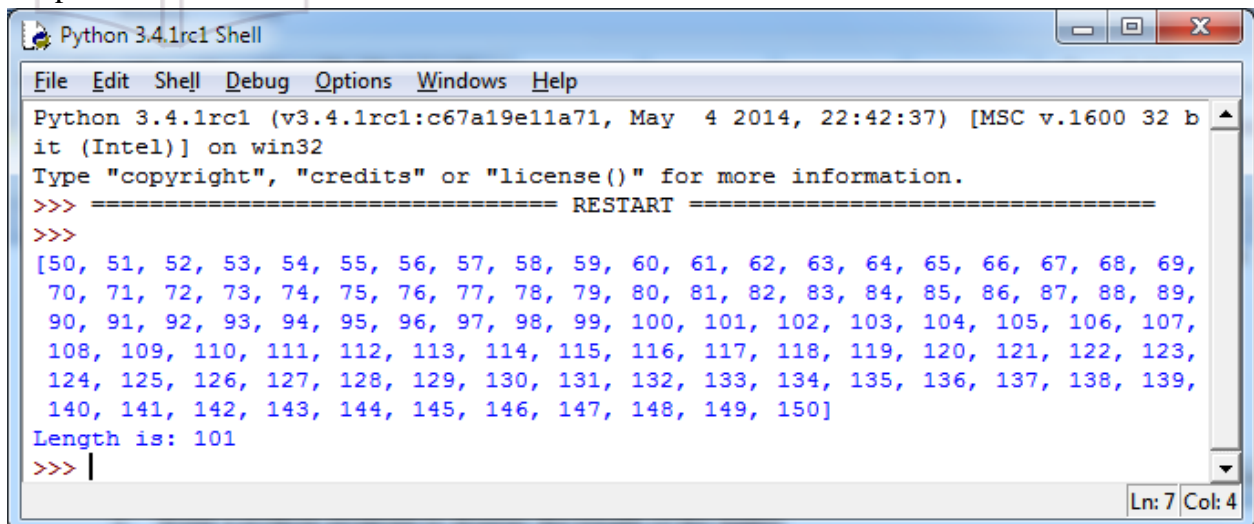
```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
('9', 'Kane', '11', 'Bale')
Length is: 4
>>> |
```

#### 4. Write a python program to display the length of elements in range function.

Source code:

```
num=[]
for i in range(50,151):
    num.append(i)
b=len(num)
print(num)
print("Length is:",b)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
[50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69,
70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89,
90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107,
108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123,
124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139,
140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150]
Length is: 101
>>> |
```

#### 5. Write a python program to display the length of elements in a sentence.

Source code:

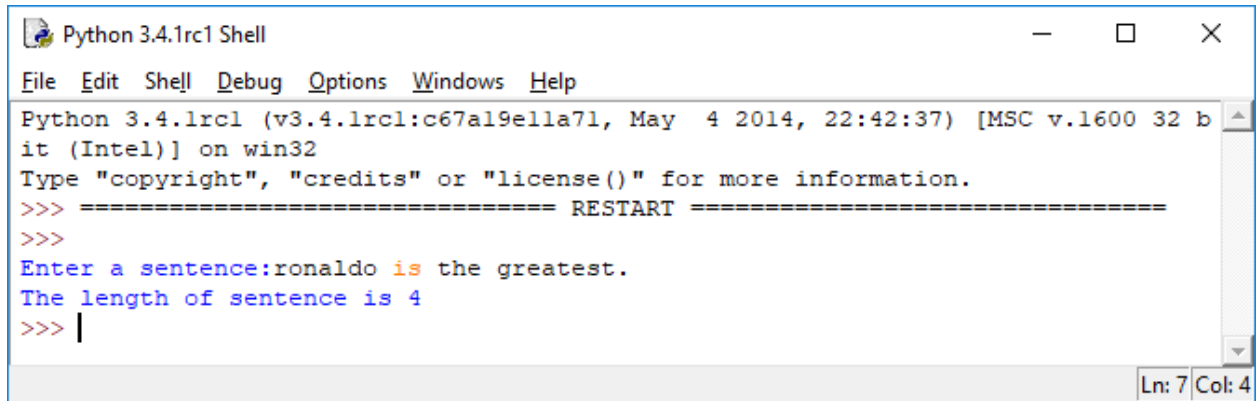
```
a=str(input("Enter a sentence:"))
b=len(a)
```

```

n=0
for i in range(0,b):
    if a[i]==' ' or a[i]=='.':
        n=n+1
print('The length of sentence is',n)

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter a sentence:ronaldo is the greatest.
The length of sentence is 4
>>> |
Ln: 7 Col: 4

```

## 6. Write a python program to display the sum of n elements.

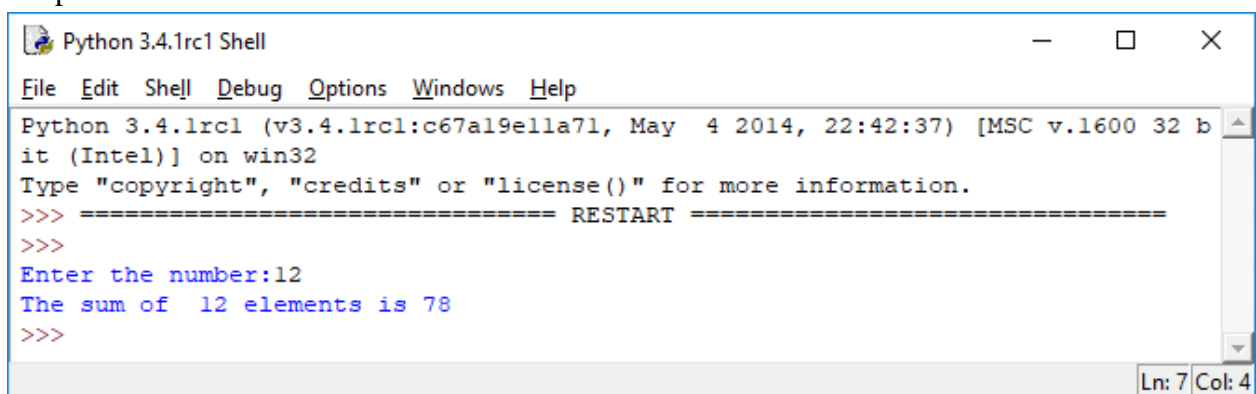
Source code:

```

a=int(input("Enter the number:"))
sum=0
for i in range(1,a+1):
    sum=sum+i
print('The sum of ',a,'elements is',sum)

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:12
The sum of 12 elements is 78
>>>
Ln: 7 Col: 4

```



## Practical 4

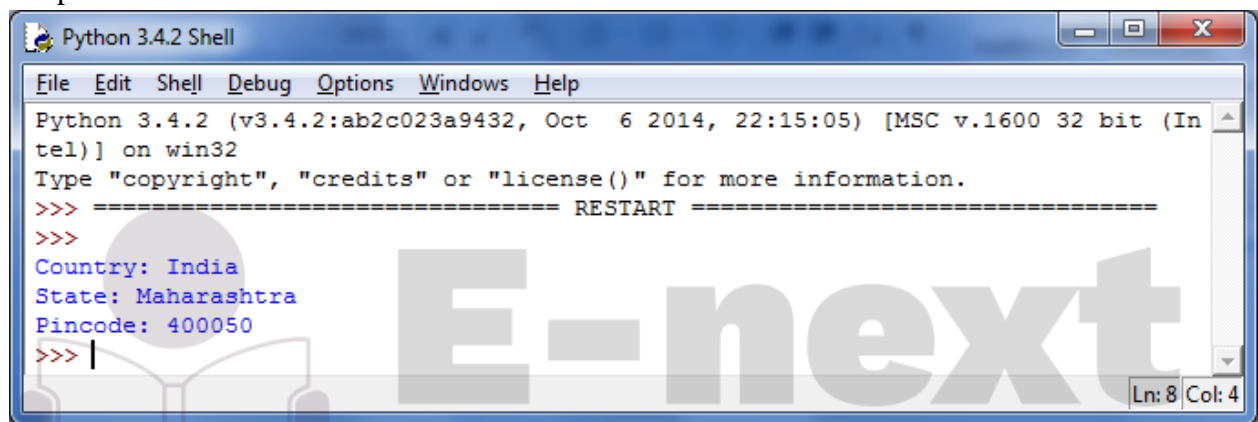
### Aim: Programs related to string manipulation

1. Declare the variable “Country”, ”State” and ”Pincode”, store some string values into. write a python program to display the values stored in it.

Source code:

```
Country=("India")
State=("Maharashtra")
Pincode=("400050")
print("Country:",Country)
print("State:",State)
print("Pincode:",Pincode)
```

Output:



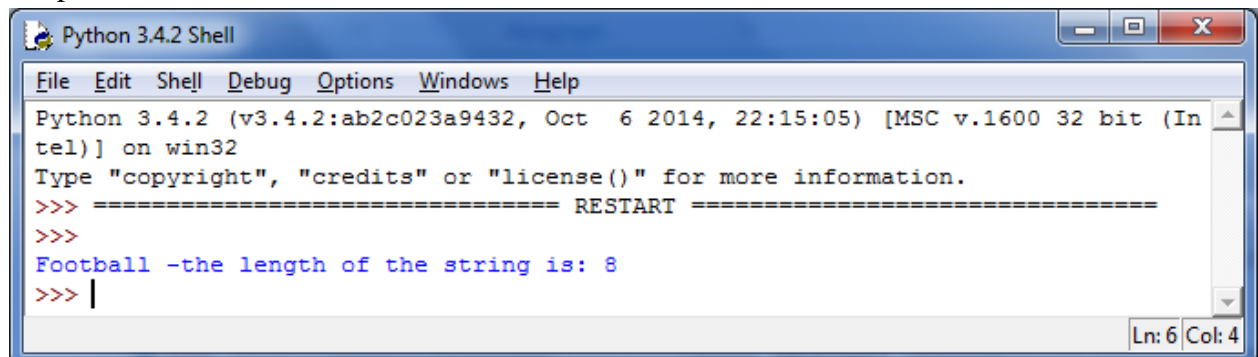
```
Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.2 (v3.4.2:ab2c023a9432, Oct 6 2014, 22:15:05) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Country: India
State: Maharashtra
Pincode: 400050
>>> |
```

2. Declare a variable “Games” with some string value in it. Write a python program to display the length of the value stored in the variable.

Source code:

```
Games=("Football")
print(Games,"-the length of the string is:",len(Games))
```

Output:



```
Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.2 (v3.4.2:ab2c023a9432, Oct 6 2014, 22:15:05) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Football -the length of the string is: 8
>>> |
```

3. Declare a variable “Programming Language” with some string value in it. Write a python program to print each character of the value stored in the variable.

Source code:

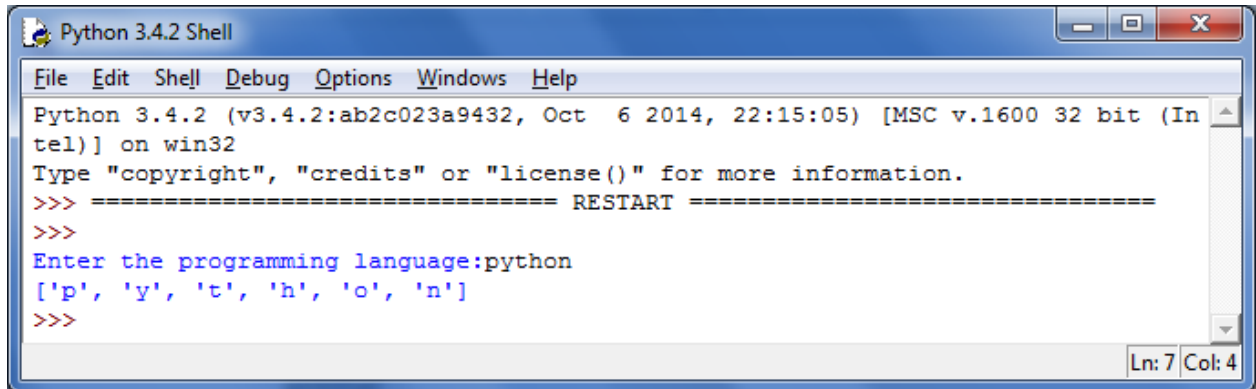
```
Programming_language=str(input("Enter the programming language:"))
```

```

a=[]
b=len(Programming_language)
for i in range(0,b):
    a.append(Programming_language[i])
print(a)

```

Output:



```

Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.2 (v3.4.2:ab2c023a9432, Oct 6 2014, 22:15:05) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the programming language:python
['p', 'y', 't', 'h', 'o', 'n']
>>>
Ln: 7 Col: 4

```

4. Declare a variable “My\_Name” with some string value in it. Write a python program to find the count of specific character present, search for specific character and index of specific character from the value stored in variable.

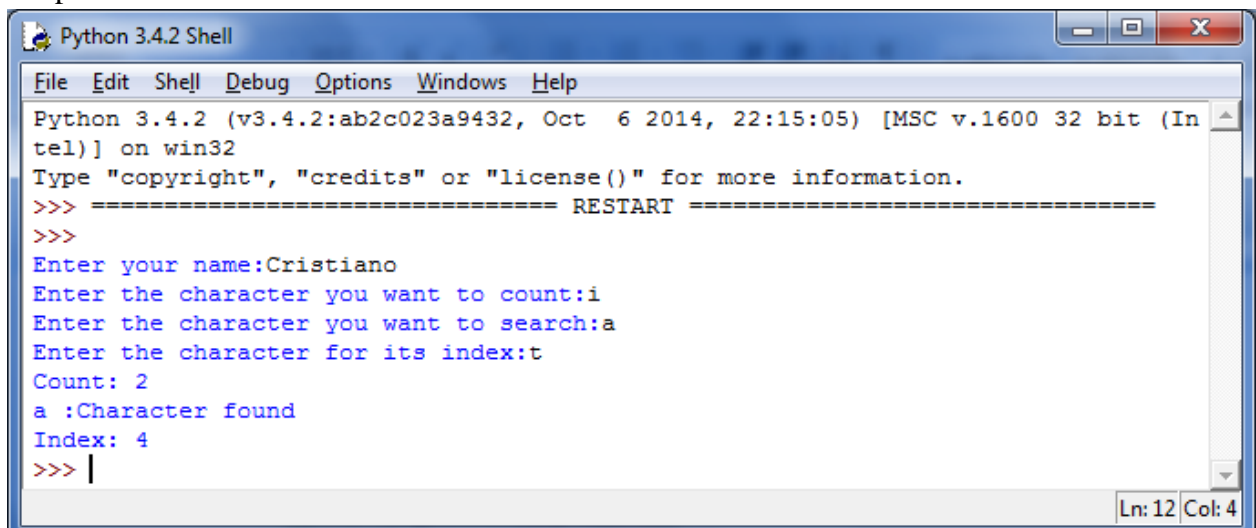
Source code:

```

My_Name=str(input("Enter your name:"))
c=str(input("Enter the character you want to count:"))
s=str(input("Enter the character you want to search:"))
ind=str(input("Enter the character for its index:"))
print("Count:",My_Name.count(c))
for i in range(0,len(My_Name)):
    if s==My_Name[i]:
        print(s,":Character found")
print("Index:",My_Name.index(ind))

```

Output:



```

Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.2 (v3.4.2:ab2c023a9432, Oct 6 2014, 22:15:05) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter your name:Cristiano
Enter the character you want to count:i
Enter the character you want to search:a
Enter the character for its index:t
Count: 2
a :Character found
Index: 4
>>> |
Ln: 12 Col: 4

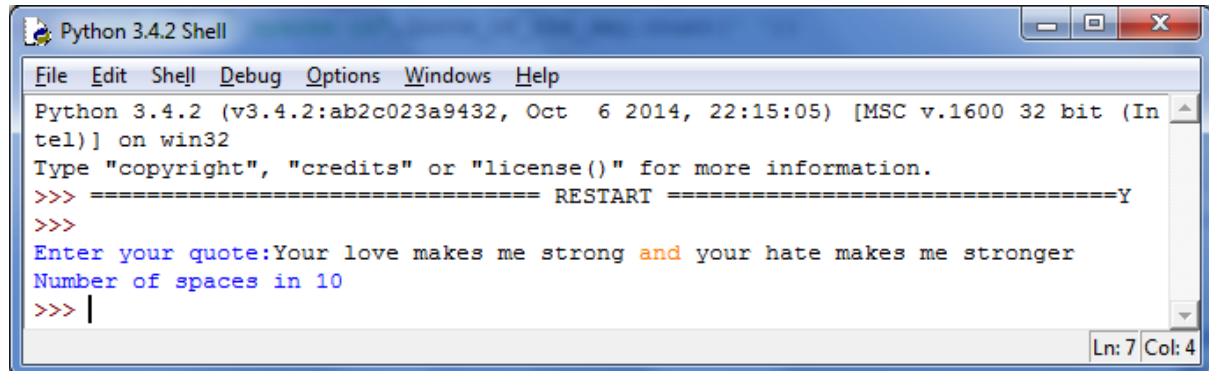
```

5. Declare a variable “Quote\_of\_the\_day” with some string typed quote into it. Write a python program to count the number of spaces present in the variable.

Source code:

```
Quote_of_the_day=str(input("Enter your quote:"))
print("Number of spaces is",Quote_of_the_day.count(' '))
```

Output:



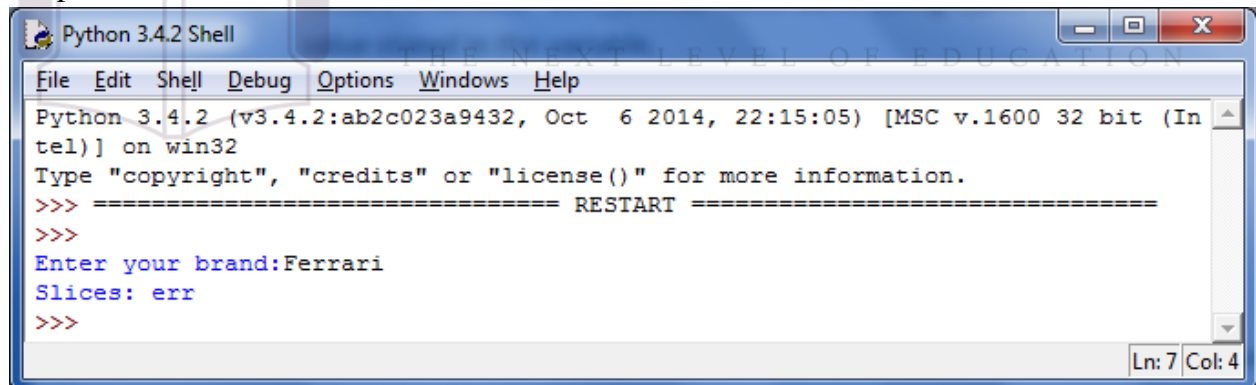
```
Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.2 (v3.4.2:ab2c023a9432, Oct 6 2014, 22:15:05) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====>>>
>>>
Enter your quote:Your love makes me strong and your hate makes me stronger
Number of spaces in 10
>>> |
```

6. Declare a variable “CAR\_BRAND” with some string typed value in it. Write a python program to slice the value stored in the variable.

Source code:

```
Car_Brand=str(input("Enter your brand:"))
print("Slices:",Car_Brand[1:4])
```

Output:



```
Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.2 (v3.4.2:ab2c023a9432, Oct 6 2014, 22:15:05) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====>>>
>>>
Enter your brand:Ferrari
Slices: err
>>>
```

7. Declare a variable “My\_College” with some string typed value in it. Write a python program to Split the value stored in the variable.

Source code:

```
My_College=str(input("Enter your college name:"))
b=len(My_College)
print("First half:",My_College[0:int(b/2)])
print("Second half:",My_College[int(b/2):b])
```

Output:



## Practical 5

**Aim:** Programs based on the while statement; importing and executing built-in functions from the time, math and random modules.

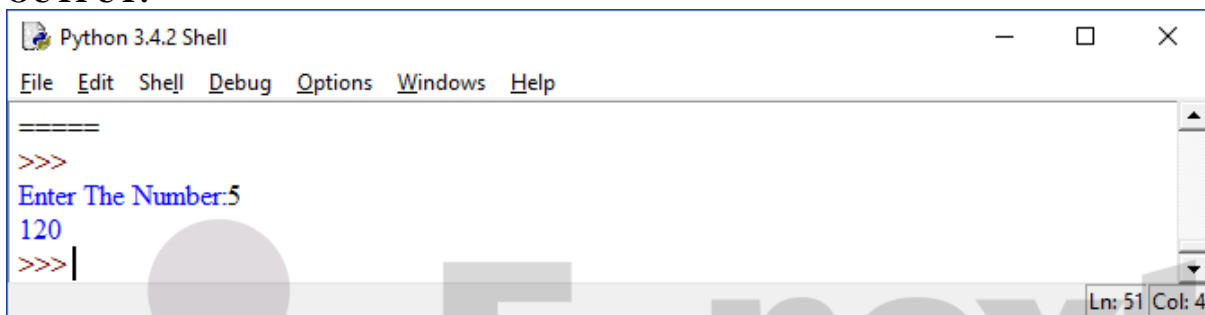
### (A) Programs based on the while statement

#### 5.1 Write a python program to display factorial of a number.

**CODE:**

```
n=int(input("Enter The Number:"))
a=1
while(n>=1):
    a=a*n
    n=n-1
print(a)
```

**OUTPUT:**



```
Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
=====
>>>
Enter The Number:5
120
>>> |
```

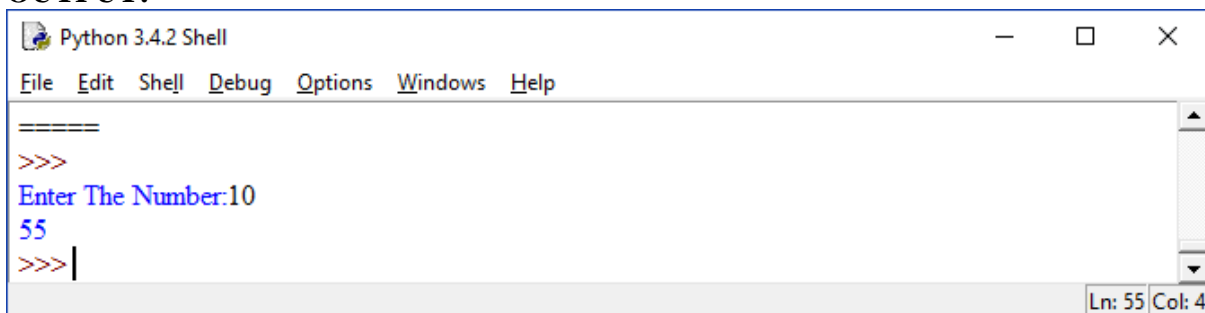
Ln: 51 Col: 4

#### 5.2 Write a python program to find sum of n numbers.

**CODE:**

```
n=int(input("Enter The Number:"))
sum=0
while(n>=1):
    sum=sum+n
    n=n-1
print(sum)
```

**OUTPUT:**



```
Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
=====
>>>
Enter The Number:10
55
>>> |
```

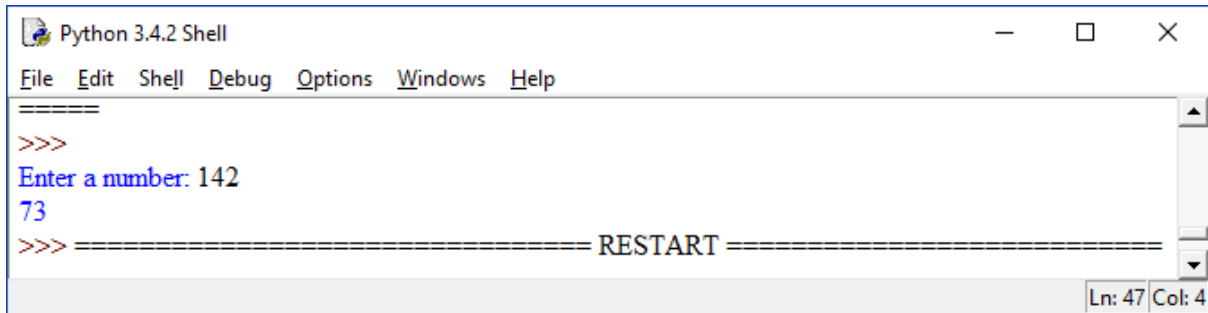
Ln: 55 Col: 4

#### 5.3 Write a python program to find sum of 3 digit number.

**CODE:**

```
num = int(input("Enter a number: "))
sum = 0
a = num
while a >= 1:
    digit = a % 10
```

```
sum =sum+digit
temp //= 10
print(sum)
```

**OUTPUT:**


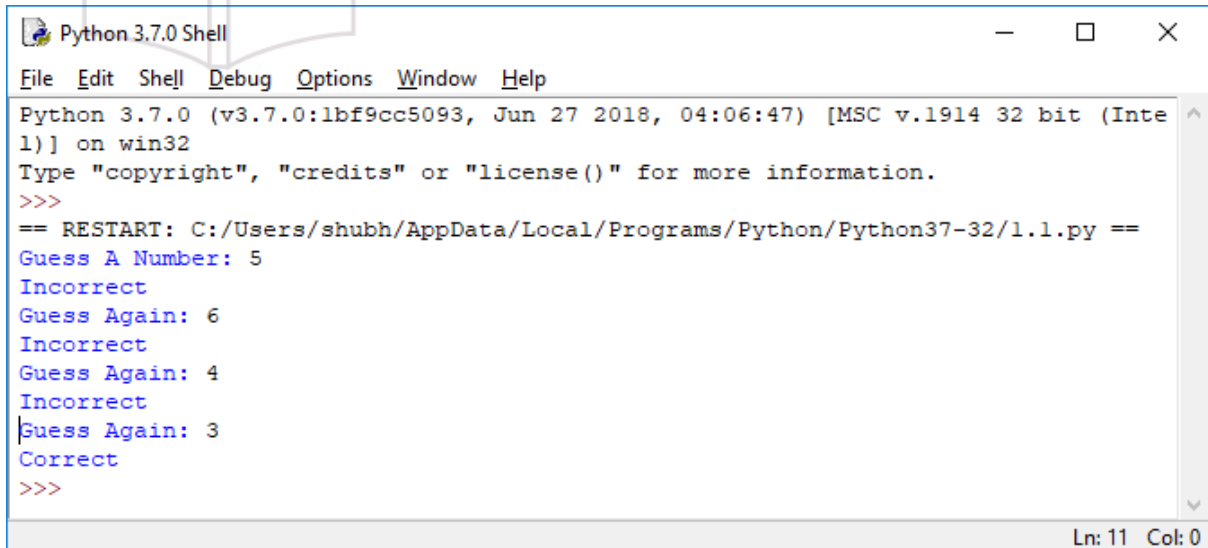
```
Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
>>>
Enter a number: 142
73
>>> ===== RESTART =====
Ln: 47 Col: 4
```

**5.4 Write a Python program to guess a number between 1 to 9.**

Note: User is prompted to enter a guess. If the user guesses wrong then the prompt appears again until the guess is correct, on successful guess, user will get a "Well guessed!" message, and the program will exit.

**CODE:**

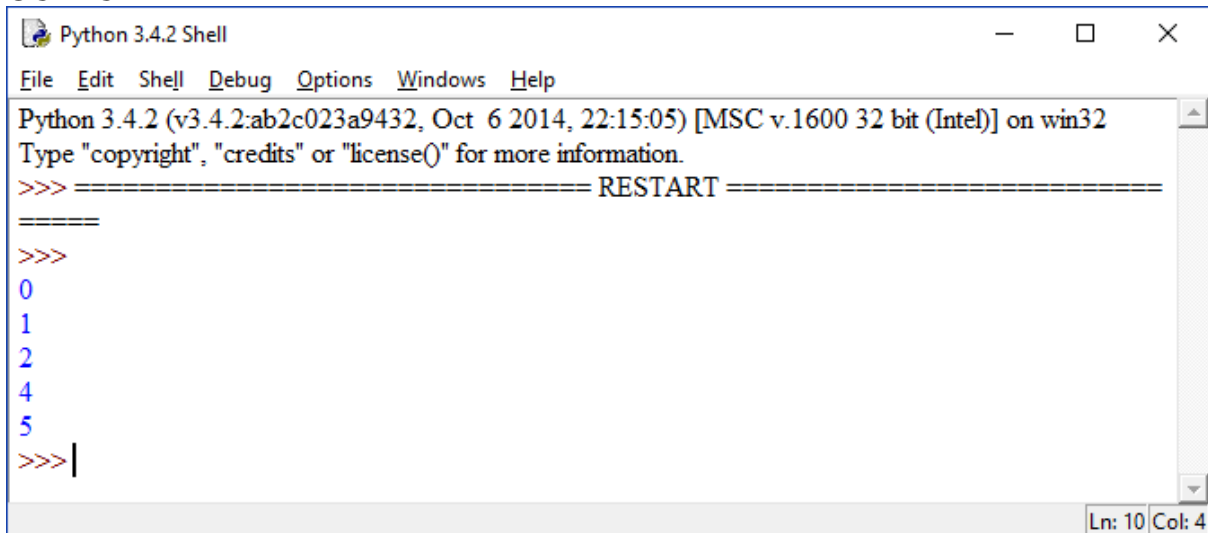
```
n=int(input("Guess A Number: "))
import random
ran_num=random.choice(range(1,10))
while n!=ran_num:
    print("Incorrect ")
    n=int(input("Guess Again: "))
else:
    print("Correct ")
```

**OUTPUT:**


```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
Guess A Number: 5
Incorrect
Guess Again: 6
Incorrect
Guess Again: 4
Incorrect
Guess Again: 3
Correct
>>>
Ln: 11 Col: 0
```

**5.5 Write a Python program that prints all the numbers from 0 to 6 except 3 and 6****CODE:**

```
for i in range(0,7):
    if i==3 or i==6:
        Continue
    print(i)
```

**OUTPUT**


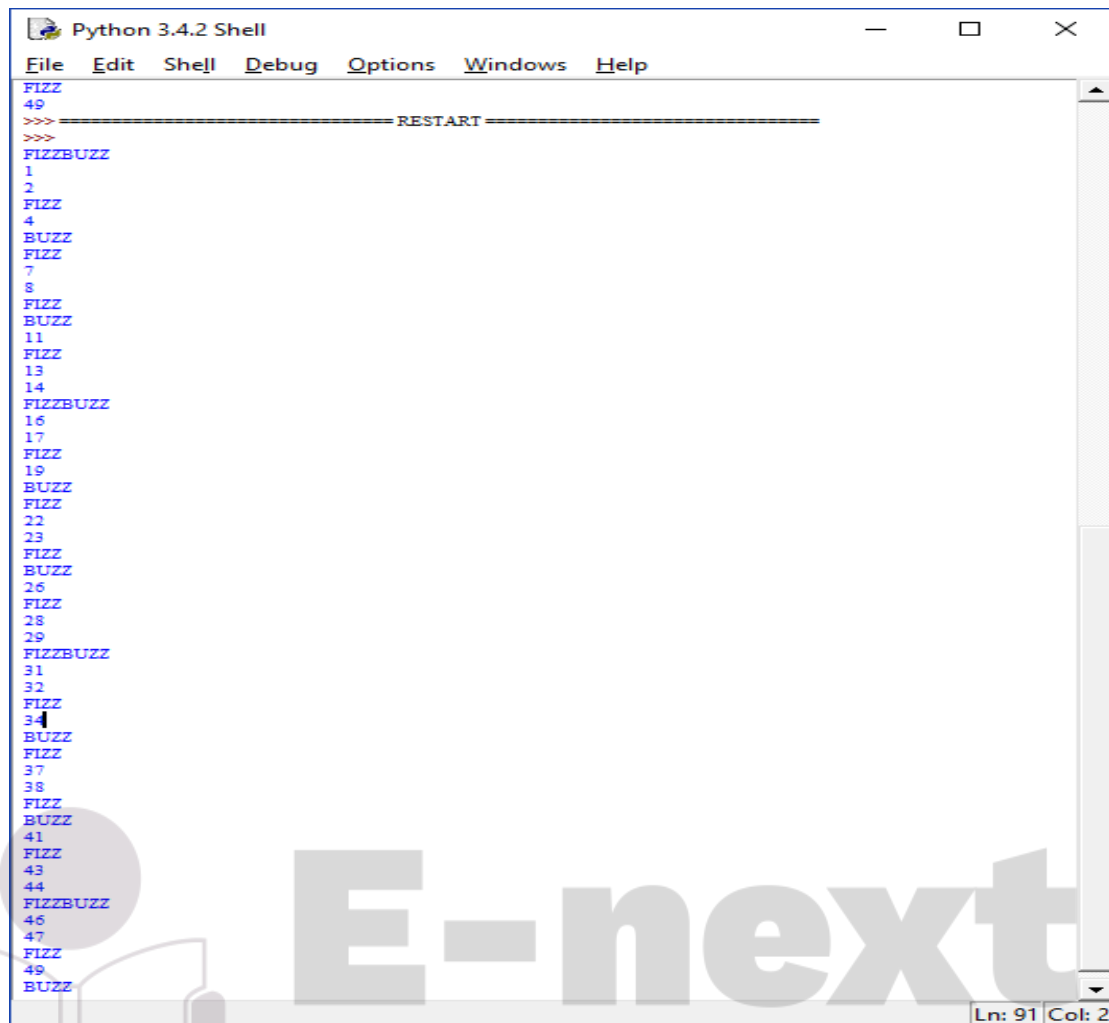
```
Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.2 (v3.4.2:ab2c023a9432, Oct 6 2014, 22:15:05) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
===== RESTART =====
>>>
0
1
2
4
5
>>>|
```

**5.6 Write a Python program which iterates the integers from 1 to 50. For multiples of three print "Fizz" instead of the number and for the multiples of five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".(use for loop)**

**CODE:**

```
for i in range(0,51):
    if (i%3==0) and (i%5==0):
        print("FIZZBUZZ")
    elif (i%3==0):
        print("FIZZ")
    elif (i%5==0):
        print("BUZZ")
    else:
        print(i)
```

**E-next**  
THE NEXT LEVEL OF EDUCATION



```

Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
FIZZ
49
>>> =====RESTART=====
>>>
FIZZBUZZ
1
2
FIZZ
4
BUZZ
FIZZ
7
8
FIZZ
BUZZ
11
FIZZ
13
14
FIZZBUZZ
16
17
FIZZ
19
BUZZ
FIZZ
22
23
FIZZ
BUZZ
26
FIZZ
28
29
FIZZBUZZ
31
32
FIZZ
34
BUZZ
FIZZ
37
38
FIZZ
BUZZ
41
FIZZ
43
44
FIZZBUZZ
46
47
FIZZ
49
BUZZ
Ln: 91 Col: 2

```

OUTPUT:

E-next  
THE NEXT LEVEL OF EDUCATION

**(B) Programs based on Importing and executing built-in functions from the time**

**5.7 Write a python program to display the current system time**

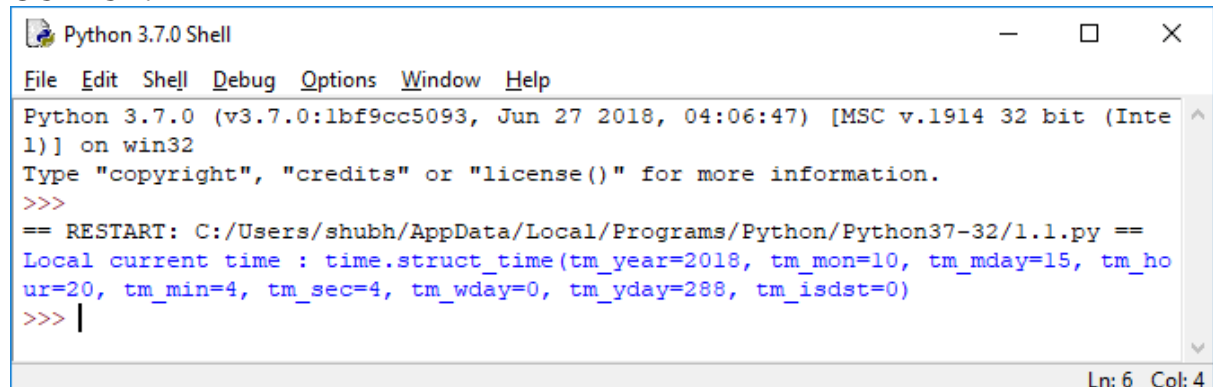
**CODE:**

```
import time
```

```
localtime = time.localtime(time.time())
```

```
print ("Local current time :", localtime)
```

**OUTPUT:**



```

Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
Local current time : time.struct_time(tm_year=2018, tm_mon=10, tm_mday=15, tm_hour=20, tm_min=4, tm_sec=4, tm_wday=0, tm_yday=288, tm_isdst=0)
>>> |
Ln: 6 Col: 4

```

**5.8 write a python program to print the current time of the system in a formatted format**

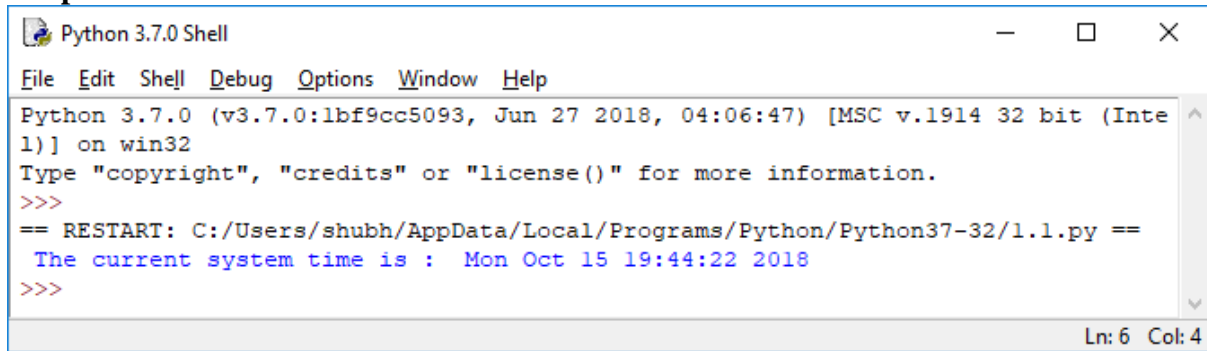
**Code:**

```
import time;
```

```
localtime=time.ctime()
```



```
print(" The current system time is : ",localtime)
```

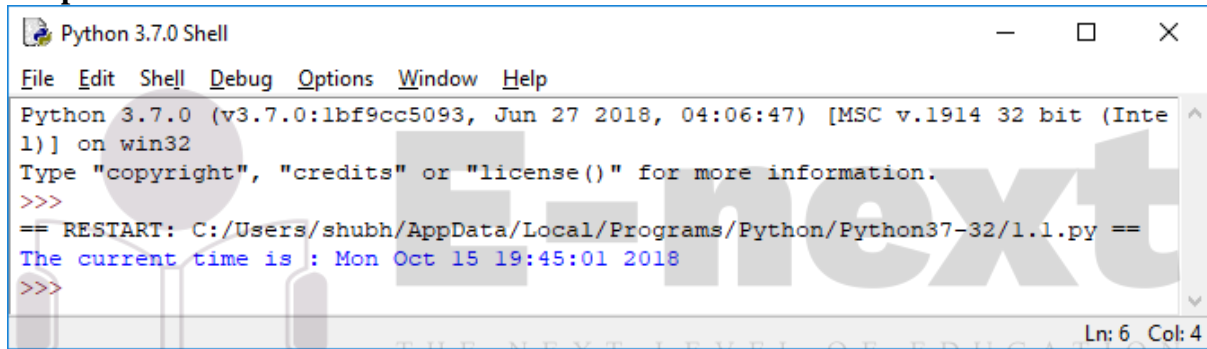
**Output:**


```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
The current system time is : Mon Oct 15 19:44:22 2018
>>>
```

**5.9 write a python program to print the current time of the system in a human readable format****Code:**

```
import time
```

```
print("The current time is :", time.ctime())
```

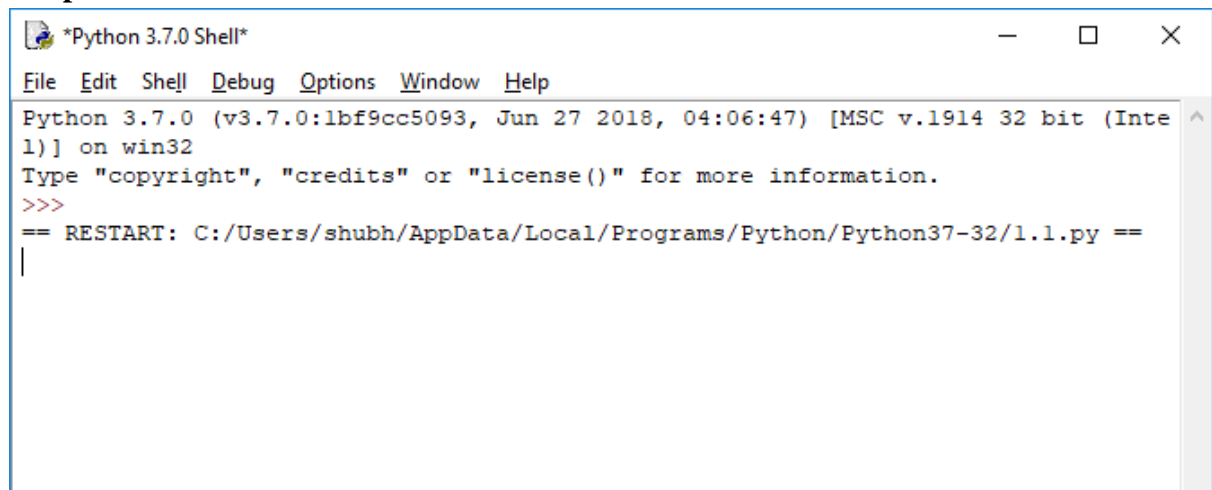
**Output:**


```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
The current time is : Mon Oct 15 19:45:01 2018
>>>
```

**5.10 write a python program to demonstrate the working of sleep.****Code:**

```
Import time
```

```
time.sleep(5)
```

**Output:**


```
*Python 3.7.0 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
|
```

**(c) Programs based on Importing and executing built-in functions from the math and random.**

**5.11 write a python program find square root of a number.**

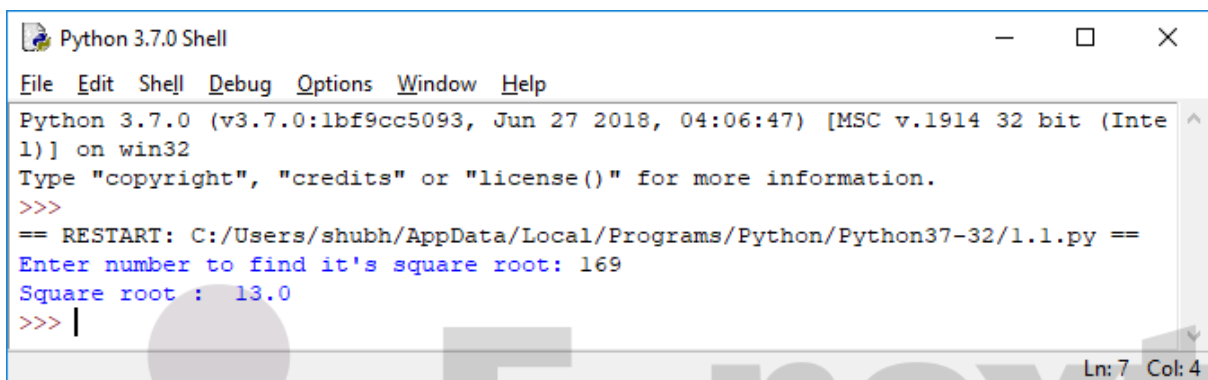
**Code:**

```
import math

n=int(input("Enter number to find it's square root: "))

print("Square root : ",math.sqrt(n))
```

**Output:**



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
Enter number to find it's square root: 169
Square root : 13.0
>>> |
```

Ln: 7 Col: 4

**5.12 write a python program find ceil of a number.**

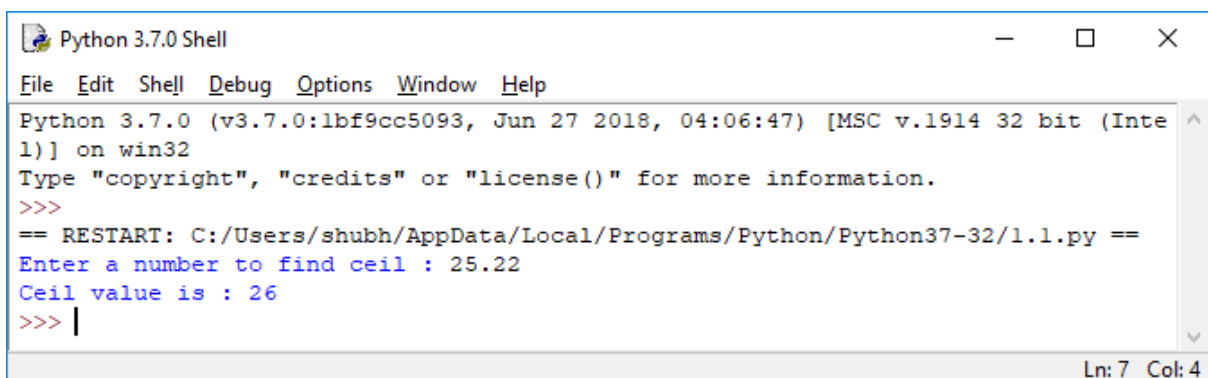
**Code:**

```
import math

n=float(input("Enter a number to find ceil : "))

print("Ceil value is :",math.ceil(n))
```

**Output:**



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
Enter a number to find ceil : 25.22
Ceil value is : 26
>>> |
```

Ln: 7 Col: 4

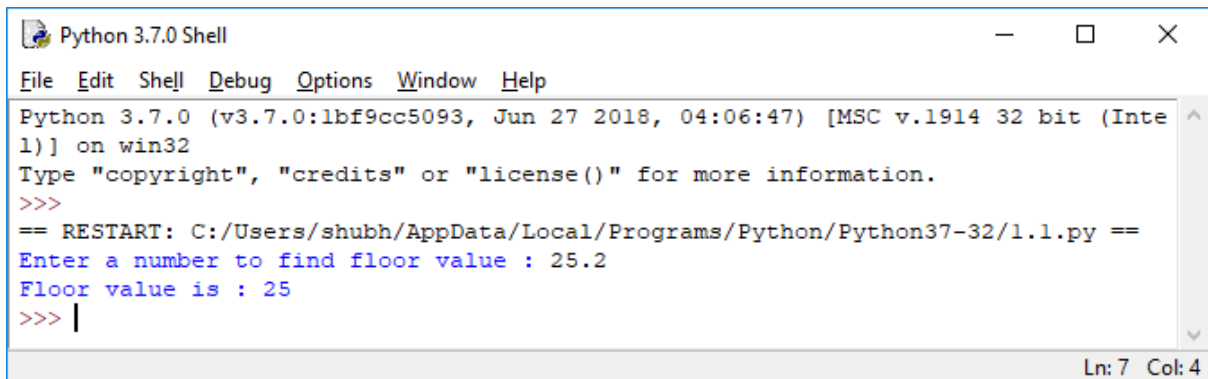
**5.13 write a python program find floor of a number.**

**Code:**

```
import math
```

```
n=float(input("Enter a number to find floor value : "))

print("Floor value is :",math.floor(n))
```

**Output:**


```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
Enter a number to find floor value : 25.2
Floor value is : 25
>>> |
```

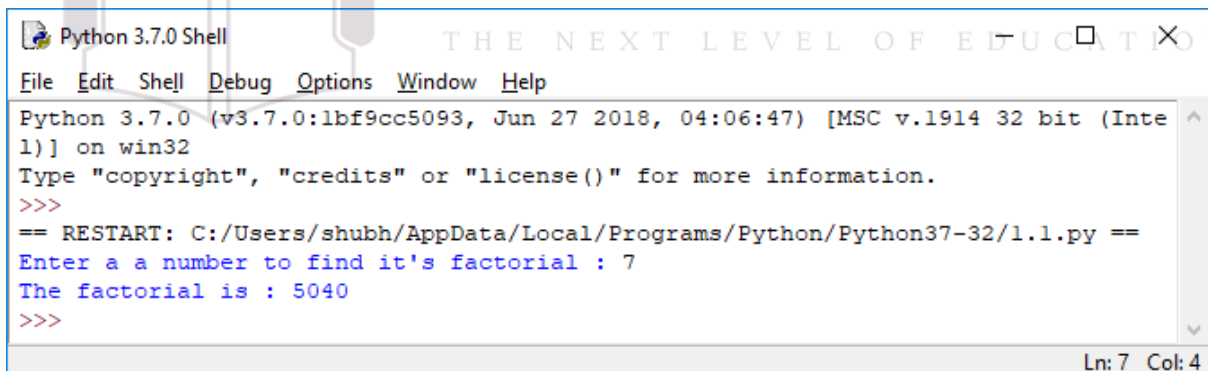
Ln: 7 Col: 4

**5.14 write a python program find factorial of a number.****Code:**

```
import math

n=float(input("Enter a a number to find it's factorial : "))

print("The factorial is :",math.factorial(n))
```

**Output:**


```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
Enter a a number to find it's factorial : 7
The factorial is : 5040
>>>
```

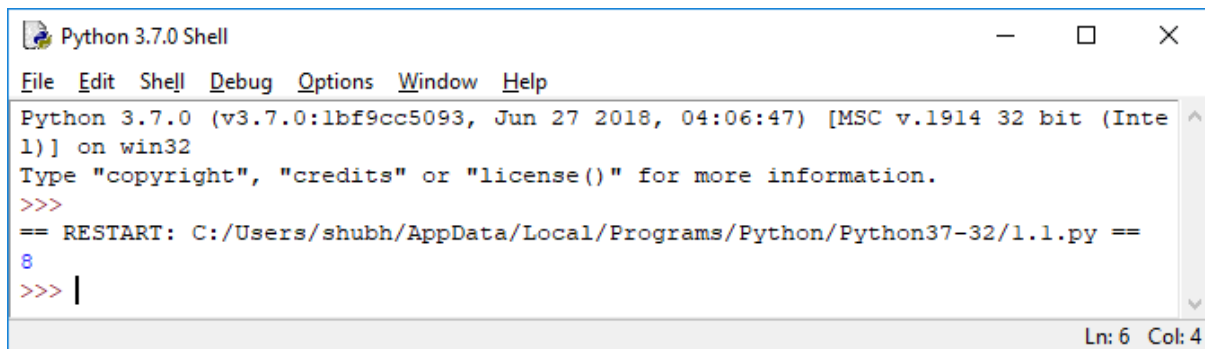
Ln: 7 Col: 4

**5.15 write a python program to print random integer numbers between 1 to 100.****Code:**

```
import random

print(random.randint(1,100))
```

**Output:**



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
8
>>> |
```

Ln: 6 Col: 4

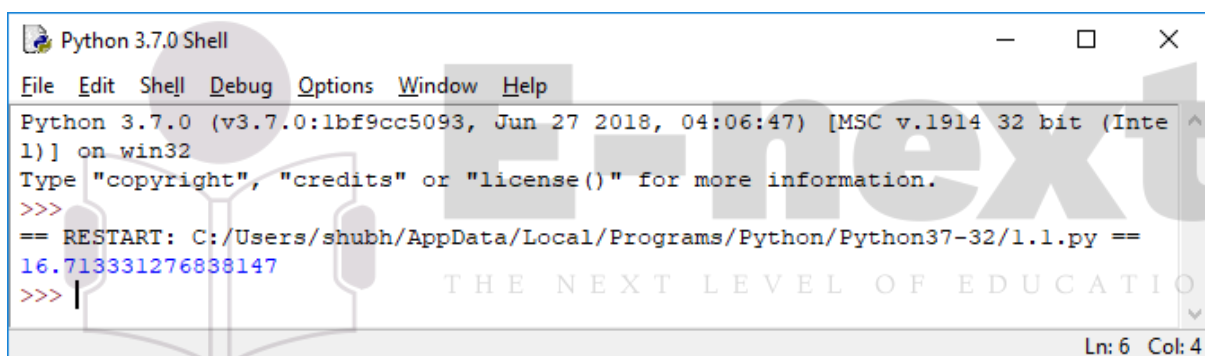
**5.16 write a python program to print random float numbers between 10 to 20.**

**Code:**

```
import random
```

```
print(random.uniform(10,20))
```

**Output:**



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/shubh/AppData/Local/Programs/Python/Python37-32/1.1.py ==
16.713331276838147
>>> |
```

Ln: 6 Col: 4

## Practical 6

**Aim:** Programs using break and continue statements

**6.1 Define a tuple with 10 elements. Find the addition of first 5 elements of the tuple.**

Source code:

```
tup=(1,2,3,4,5,6,7,8,9,10)

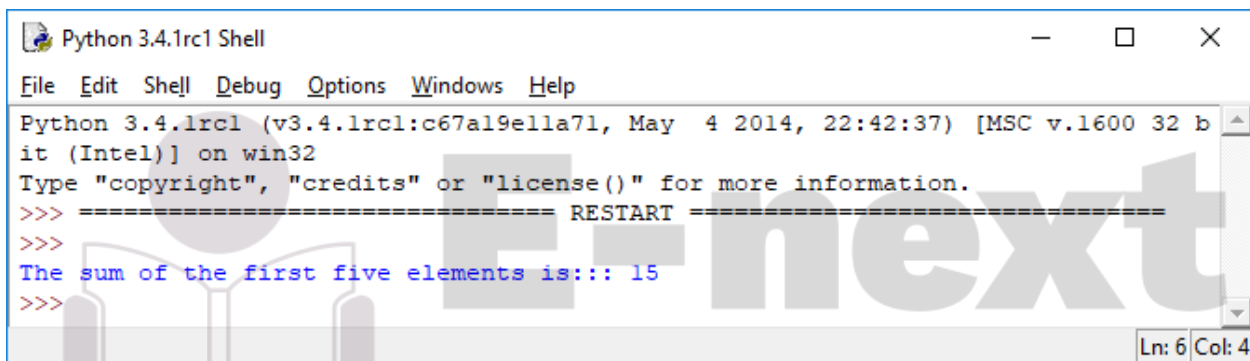
s=0

for i in range(0,5):

    s=s+tup[i]

print("The sum of the first five elements is::",s)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
The sum of the first five elements is:: 15
>>>
```

**6.2 Define a variable of string type. Print all the words in the variable up till the letter “i” occurs.**

Source code:

```
name='chris'

for a in name:

    if a=='i':

        break

    print(a)
```

Output:

```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
c
h
r
>>>
```

**6.3 Define a variable of string type. Print all the words in the variable except the letter “i” occurs.**

Source code:

```
name='chris'
```

```
for a in name:
```

```
    if a=='i':
```

```
        continue
```

```
    print(a)
```

Output:

```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
c
h
r
s
>>>
```

**6.4 write a python program to print multiplication table of a user define number. Print table upto  $n \times 10 = N$  except  $n \times 5 = N$ .**

Source code:

```
a=int(input("Enter the number:"))
```

```
for i in range(1,11):
```

```

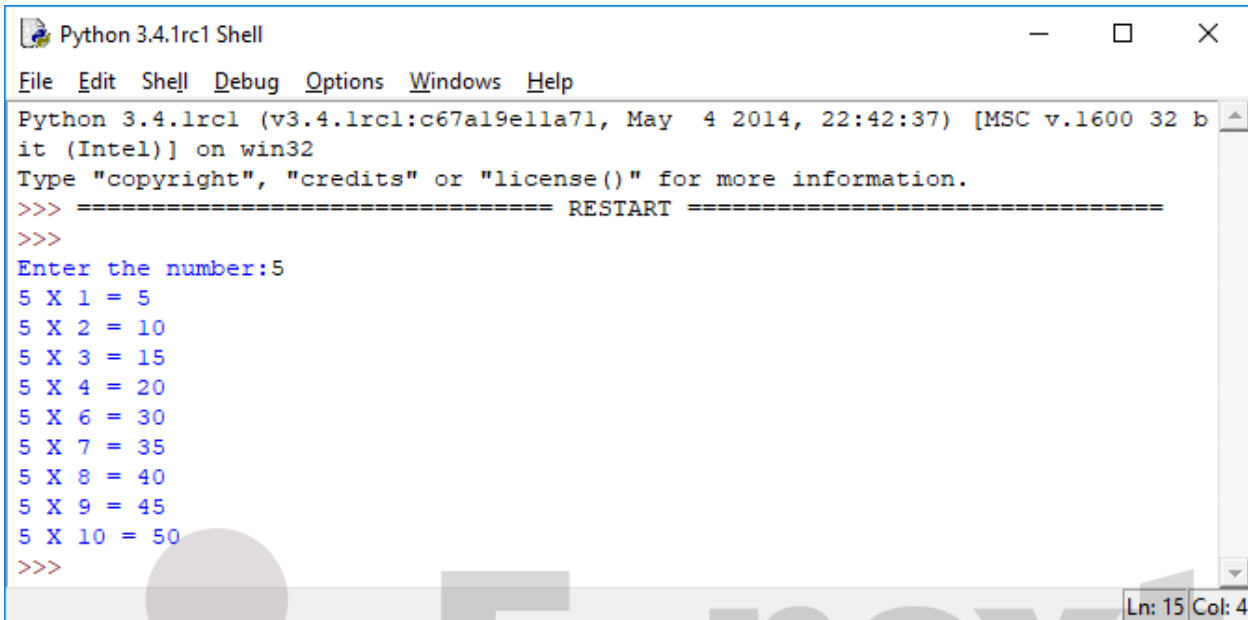
if i==5:

    continue

print(a,'X',i,'=',a*i)

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:5
5 X 1 = 5
5 X 2 = 10
5 X 3 = 15
5 X 4 = 20
5 X 6 = 30
5 X 7 = 35
5 X 8 = 40
5 X 9 = 45
5 X 10 = 50
>>>
Ln: 15 Col: 4

```

**6.5 Define a list with 20 elements into it. Display the addition of First 5 elements, then display the addition of next 10 elements later all the 20 elements .**

Source code:

```

a=[]

sum=0

for i in range(1,21):

    a.append(i)

print(a)

for i in range(0,len(a)):

    if i==5:

        break

    sum=sum+a[i]

print("the sum of first 5 elements is ",sum)

sum=0

```

```

for i in range (0,len(a)):

    if i==10:

        break

    sum=sum+a[i]

print("the sum of first 10 elements is ",sum)

sum=0

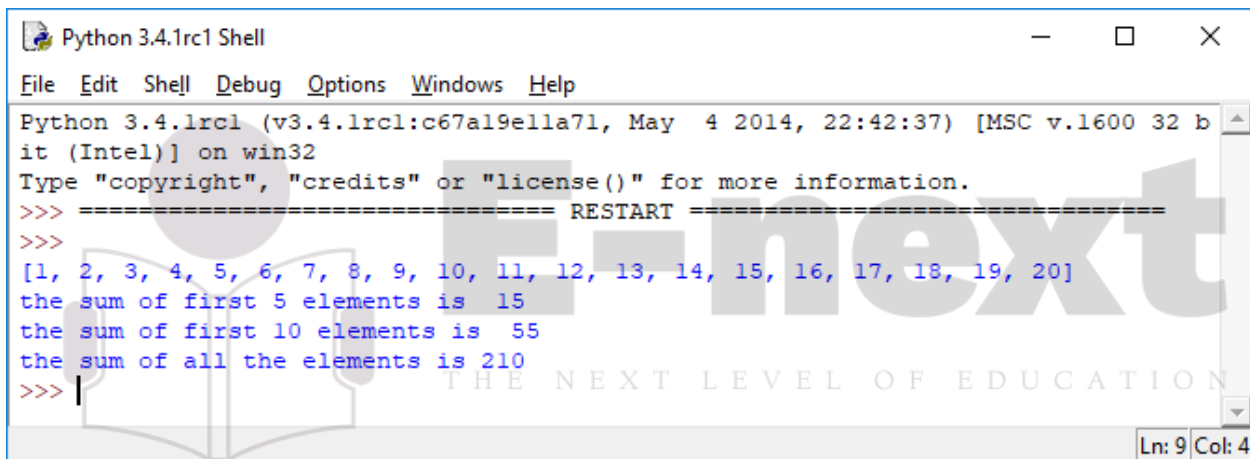
for i in range (0,20):

    sum=sum+a[i]

print("the sum of all the elements is",sum)

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20]
the sum of first 5 elements is  15
the sum of first 10 elements is  55
the sum of all the elements is 210
>>>

```

**6.6 Write a python program to take a string input from the user and decide whether the character ‘p’ is present in the string. Print all the characters until ‘p’ and come out of the loop as and when ‘p’ is found.**

Source code:

```

a=str(input("Enter a string value:"))

for i in a:

    if i=="p":

        print("p is present in the string")

for i in a:

    if i=="p":

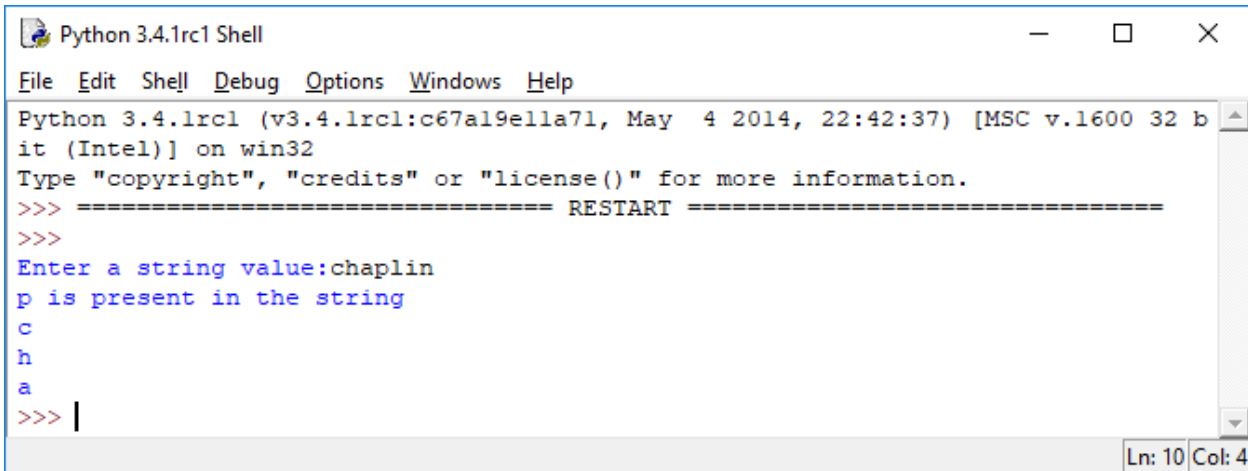
        break

```



```
print(i)
```

Output:



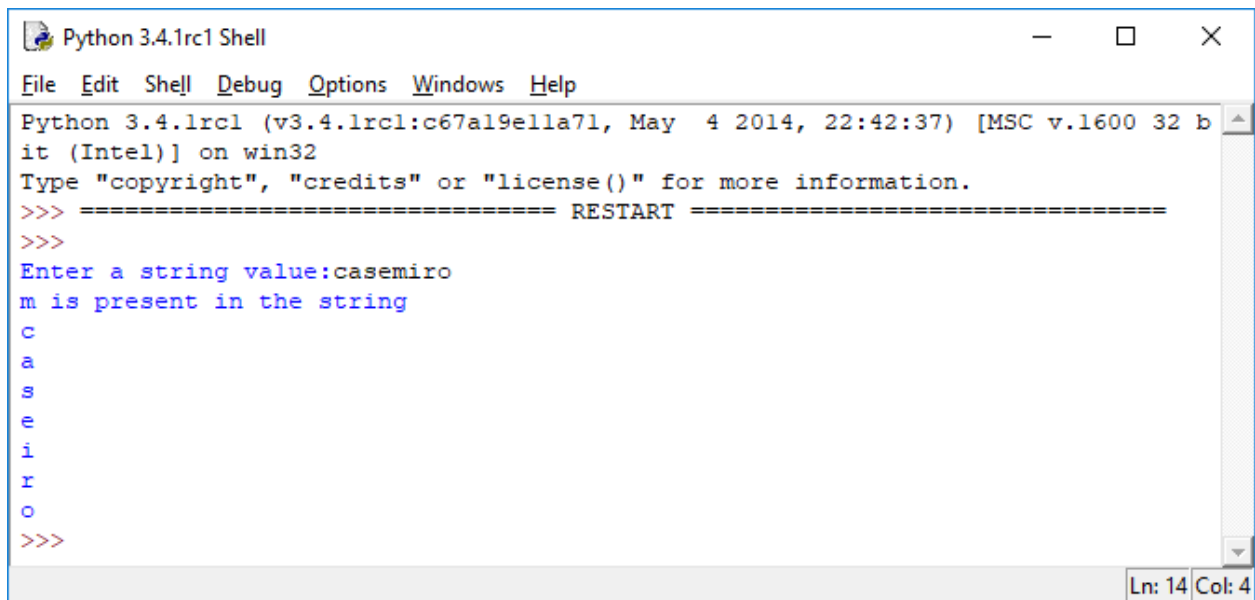
```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter a string value:chaplin
p is present in the string
c
h
a
>>> |
```

**6.7 Write a python program to read a user defined string. Start reading each character of the string, identify the letter 'm', skip the letter and print the remaining string.**

Source code:

```
a=str(input("Enter a string value:"))
for i in a:
    if i=="m":
        print("m is present in the string")
for i in a:
    if i=="m":
        continue
    print(i)
```

Output:

A screenshot of a Python 3.4.1rc1 Shell window. The window has a title bar with the text 'Python 3.4.1rc1 Shell' and standard window controls (minimize, maximize, close). Below the title bar is a menu bar with 'File', 'Edit', 'Shell', 'Debug', 'Options', 'Windows', and 'Help'. The main text area shows the following content:

```
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter a string value:casemiro
m is present in the string
c
a
s
e
i
r
o
>>>
```

The status bar at the bottom right indicates 'Ln: 14 Col: 4'.

# E-next

THE NEXT LEVEL OF EDUCATION

## Practical 7

**Aim: Programs related to dictionaries.**

A college has 20 students for a particular course:

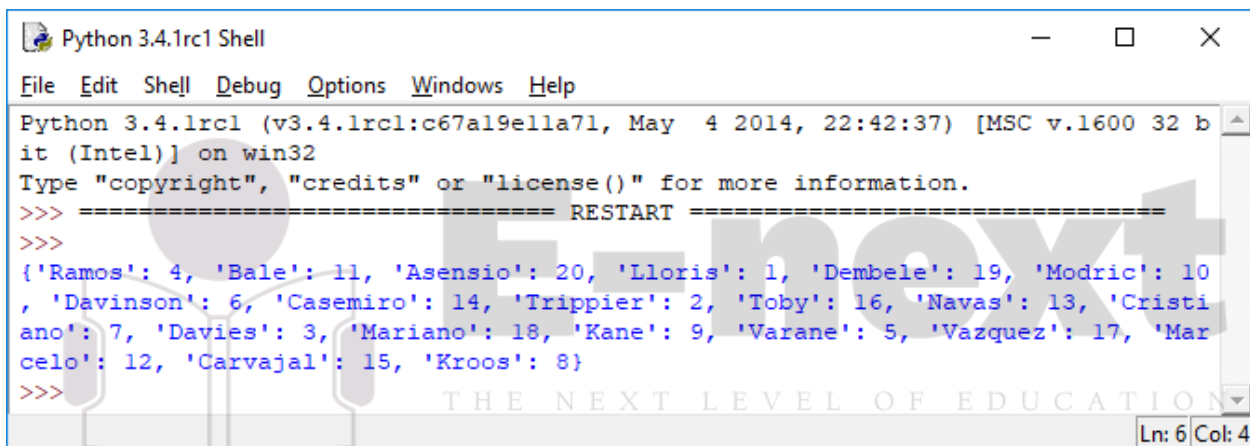
### 7.1 Create a dictionary which contains the roll number & the name of the student.

Source code:

```
course={'Lloris':1,'Trippier':2,'Davies':3,'Ramos':4,'Varane':5,'Davinson':6,'Cristiano':7,'Kroos':8,'Kane':9,'Modric':10,'Bale':11,'Marcelo':12,'Navas':13,'Casemiro':14,'Carvajal':15,'Toby':16,'Vazquez':17,'Mariano':18,'Dembele':19,'Asensio':20}
```

```
print(course)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
{'Ramos': 4, 'Bale': 11, 'Asensio': 20, 'Lloris': 1, 'Dembele': 19, 'Modric': 10
, 'Davinson': 6, 'Casemiro': 14, 'Trippier': 2, 'Toby': 16, 'Navas': 13, 'Cristi
ano': 7, 'Davies': 3, 'Mariano': 18, 'Kane': 9, 'Varane': 5, 'Vazquez': 17, 'Mar
celo': 12, 'Carvajal': 15, 'Kroos': 8}
>>> THE NEXT LEVEL OF EDUCATION
Ln: 6 Col: 4
```

### 7.2 After 10 days, 5 more students apply for the same course, update the dictionary by adding them.

Source code:

#Before Update

```
print('Before Update:')
```

```
course={'Lloris':1,'Trippier':2,'Davies':3,'Ramos':4,'Varane':5,'Davinson':6,'Cristiano':7,'Kroos':8,'Kane':9,'Modric':10,'Bale':11,'Marcelo':12,'Navas':13,'Casemiro':14,'Carvajal':15,'Toby':16,'Vazquez':17,'Mariano':18,'Dembele':19,'Asensio':20}
```

```
print(course)
```

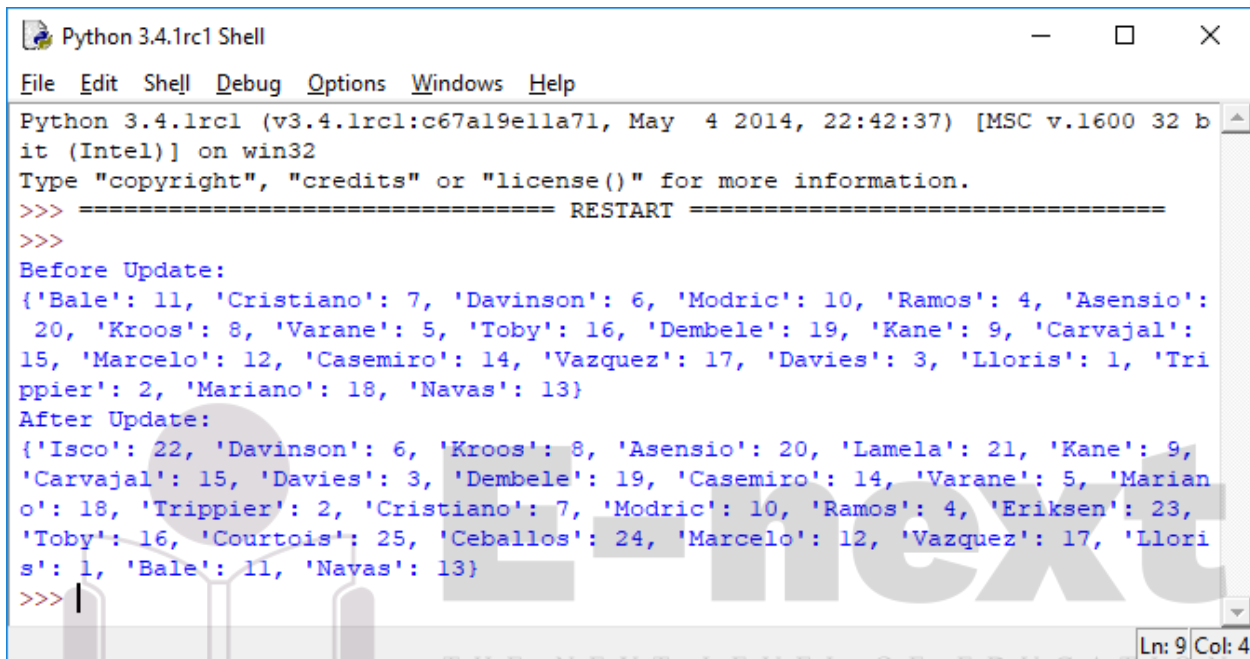
#After Update

```
print('After Update:')
```

```
course={'Lloris':1,'Trippier':2,'Davies':3,'Ramos':4,'Varane':5,'Davinson':6,'Cristiano':7,'Kroos':8,'Kane':9,'Modric':10,'Bale':11,'Marcelo':12,'Navas':13,'Casemiro':14,'Carvajal':15,'Toby':16,'Vazquez':17,'Mariano':18,'Dembele':19,'Asensio':20,'Lamela':21,'Isco':22,'Eriksen':23,'Ceballos':24,'Courtois':25 }
```

```
print(course)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Before Update:
{'Bale': 11, 'Cristiano': 7, 'Davinson': 6, 'Modric': 10, 'Ramos': 4, 'Asensio': 20, 'Kroos': 8, 'Varane': 5, 'Toby': 16, 'Dembele': 19, 'Kane': 9, 'Carvajal': 15, 'Marcelo': 12, 'Casemiro': 14, 'Vazquez': 17, 'Davies': 3, 'Lloris': 1, 'Trippier': 2, 'Mariano': 18, 'Navas': 13}
After Update:
{'Isco': 22, 'Davinson': 6, 'Kroos': 8, 'Asensio': 20, 'Lamela': 21, 'Kane': 9, 'Carvajal': 15, 'Davies': 3, 'Dembele': 19, 'Casemiro': 14, 'Varane': 5, 'Mariano': 18, 'Trippier': 2, 'Cristiano': 7, 'Modric': 10, 'Ramos': 4, 'Eriksen': 23, 'Toby': 16, 'Courtois': 25, 'Ceballos': 24, 'Marcelo': 12, 'Vazquez': 17, 'Lloris': 1, 'Bale': 11, 'Navas': 13}
>>>
```

**7.3 The same roll number of the student will be carried for the next class. At the end of the year, 3 students fail. Hence, remove them from the list.**

Source code:

```
course={'Lloris':1,'Trippier':2,'Davies':3,'Ramos':4,'Varane':5,'Davinson':6,'Cristiano':7,'Kroos':8,'Kane':9,'Modric':10,'Bale':11,'Marcelo':12,'Navas':13,'Casemiro':14,'Carvajal':15,'Toby':16,'Vazquez':17,'Mariano':18,'Dembele':19,'Asensio':20,'Lamela':21,'Isco':22,'Eriksen':23,'Ceballos':24,'Courtois':25 }
```

```
#Before Removing
```

```
print("Before Removing")
```

```
print(course)
```

```
del course['Ceballos']
```

```
del course['Vazquez']
```

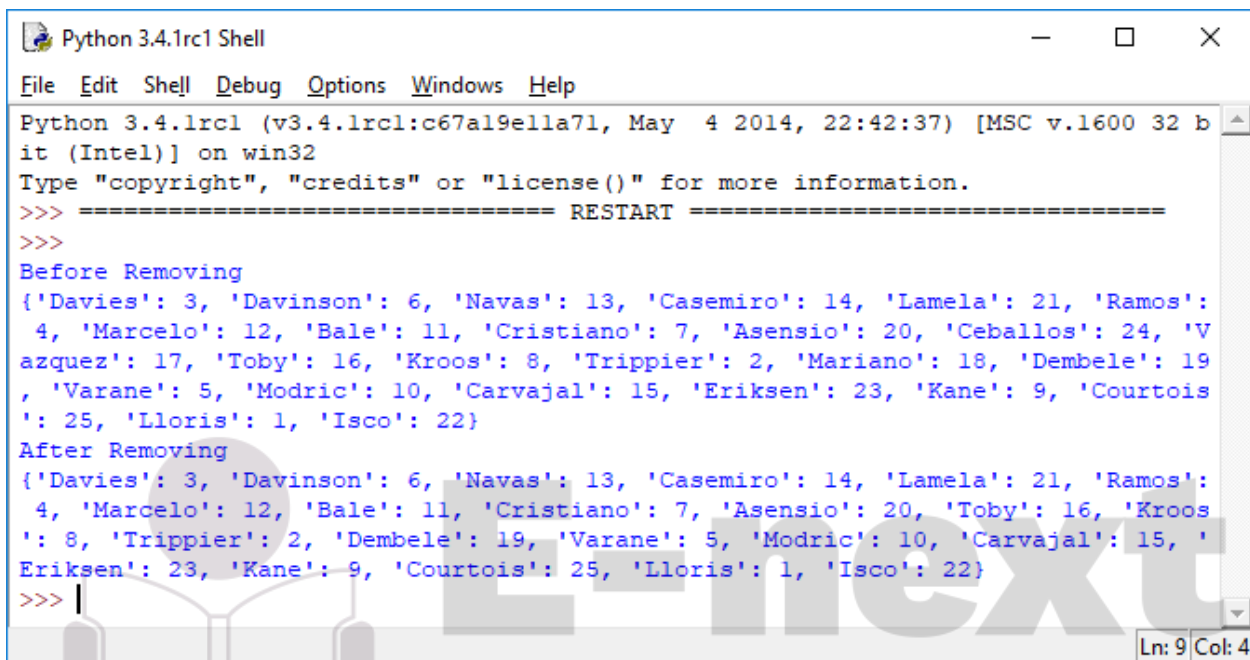
```
del course['Mariano']

#After removing

print("After Removing")

print(course)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Before Removing
{'Davies': 3, 'Davinson': 6, 'Navas': 13, 'Casemiro': 14, 'Lamela': 21, 'Ramos':
4, 'Marcelo': 12, 'Bale': 11, 'Cristiano': 7, 'Asensio': 20, 'Ceballos': 24, 'V
azquez': 17, 'Toby': 16, 'Kroos': 8, 'Trippier': 2, 'Mariano': 18, 'Dembele': 19
, 'Varane': 5, 'Modric': 10, 'Carvajal': 15, 'Eriksen': 23, 'Kane': 9, 'Courtois
': 25, 'Lloris': 1, 'Isco': 22}
After Removing
{'Davies': 3, 'Davinson': 6, 'Navas': 13, 'Casemiro': 14, 'Lamela': 21, 'Ramos':
4, 'Marcelo': 12, 'Bale': 11, 'Cristiano': 7, 'Asensio': 20, 'Toby': 16, 'Kroos
': 8, 'Trippier': 2, 'Dembele': 19, 'Varane': 5, 'Modric': 10, 'Carvajal': 15, '
Eriksen': 23, 'Kane': 9, 'Courtois': 25, 'Lloris': 1, 'Isco': 22}
>>> |
```

**7.4 Hence, list the final dictionary which contains the roll number & the names of the student.**

Source code:

```
course={'Lloris':1,'Trippier':2,'Davies':3,'Ramos':4,'Varane':5,'Davinson':6,'Cristiano':7,'Kroos':8,'Ka
ne':9,'Modric':10,'Bale':11,'Marcelo':12,'Navas':13,'Casemiro':14,'Carvajal':15,'Toby':16,'Vazquez':1
7,'Mariano':18,'Dembele':19,'Asensio':20,'Lamela':21,'Isco':22,'Eriksen':23,'Ceballos':24,'Courtois':2
5 }
```

```
del course['Ceballos']
```

```
del course['Vazquez']
```

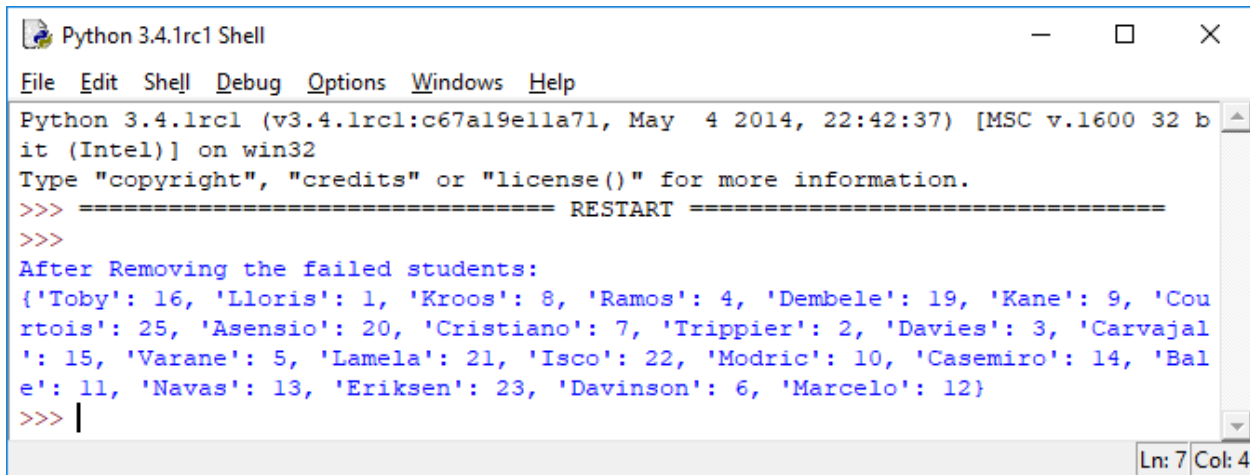
```
del course['Mariano']
```

```
#After removing
```

```
print("After Removing the failed students:")
```

```
print(course)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
After Removing the failed students:
{'Toby': 16, 'Lloris': 1, 'Kroos': 8, 'Ramos': 4, 'Dembele': 19, 'Kane': 9, 'Courtois': 25, 'Asensio': 20, 'Cristiano': 7, 'Trippier': 2, 'Davies': 3, 'Carvajal': 15, 'Varane': 5, 'Lamela': 21, 'Isco': 22, 'Modric': 10, 'Casemiro': 14, 'Bale': 11, 'Navas': 13, 'Eriksen': 23, 'Davinson': 6, 'Marcelo': 12}
>>> |
```

**7.5 In the 2<sup>nd</sup> year, few students had changed their subjects, hence, their roll number also**

**Changes. Update the dictionary with new roll numbers.**

Source code:

```
course={'Isco': 22, 'Marcelo': 12, 'Lamela': 21, 'Modric': 10, 'Courtois': 25, 'Lloris': 1, 'Kroos': 8,
'Trippier': 2, 'Navas': 13, 'Davinson': 6, 'Ramos': 4, 'Asensio': 20, 'Bale': 11, 'Varane': 5, 'Kane': 9,
'Eriksen': 23, 'Dembele': 19, 'Toby': 16, 'Davies': 3, 'Casemiro': 14, 'Cristiano': 7, 'Carvajal': 15}
```

```
course['Isco']=29
```

```
course['Davies']=33
```

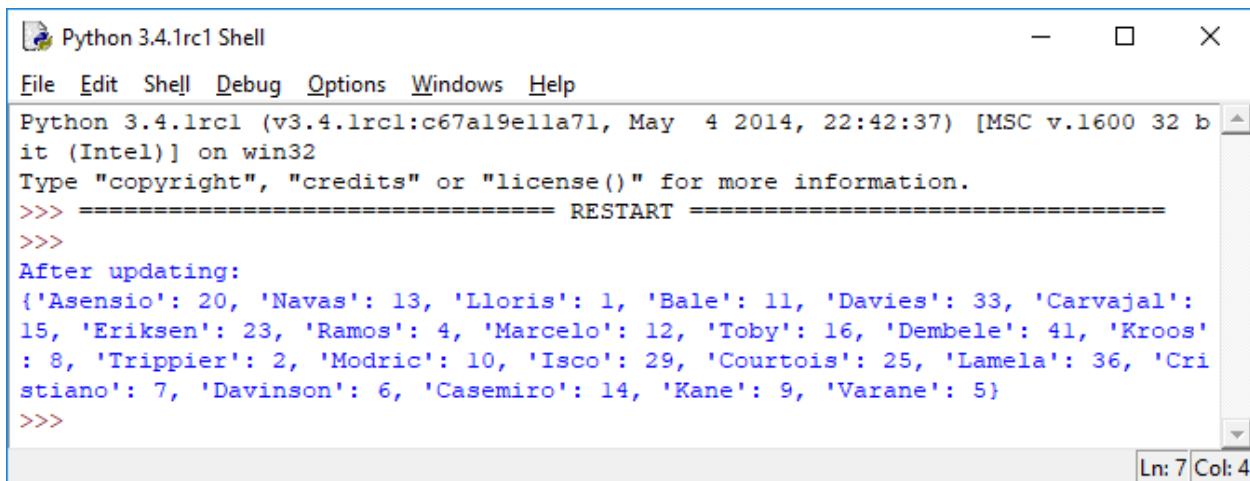
```
course['Lamela']=36
```

```
course['Dembele']=41
```

```
print("After updating:")
```

```
print(course)
```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
After updating:
{'Asensio': 20, 'Navas': 13, 'Lloris': 1, 'Bale': 11, 'Davies': 33, 'Carvajal':
15, 'Eriksen': 23, 'Ramos': 4, 'Marcelo': 12, 'Toby': 16, 'Dembele': 41, 'Kroos'
: 8, 'Trippier': 2, 'Modric': 10, 'Isco': 29, 'Courtois': 25, 'Lamela': 36, 'Cri
stiano': 7, 'Davinson': 6, 'Casemiro': 14, 'Kane': 9, 'Varane': 5}
>>>
Ln: 7 Col: 4

```

## 7.6 Perform a search operation through roll number & find the name of the student.

### Source code:

```

course={'Isco': 22, 'Marcelo': 12, 'Lamela': 36, 'Modric': 10, 'Courtois': 25, 'Lloris': 1, 'Kroos': 8,
'Trippier': 2, 'Navas': 13, 'Davinson': 6, 'Ramos': 4, 'Asensio': 20, 'Bale': 11, 'Varane': 5, 'Kane': 9,
'Eriksen': 23, 'Dembele': 41, 'Toby': 16, 'Davies': 33, 'Casemiro': 14, 'Cristiano': 7, 'Carvajal': 15}

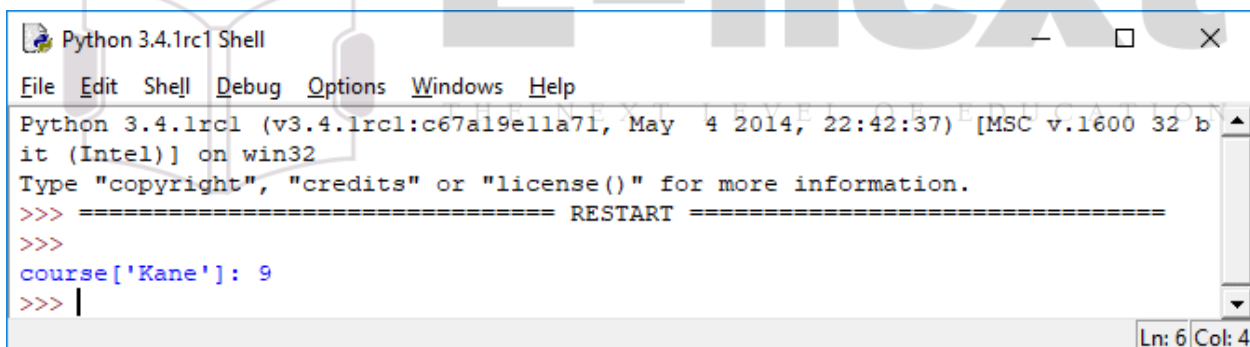
```

```

print("course['Kane']:",course['Kane'])

```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
course['Kane']: 9
>>> |
Ln: 6 Col: 4

```

## Practical 8

**Aim: Programs using list comprehensions and anonymous functions.**

### List Comprehension

**8.1 write a python program to generate a new list containing the square of all the elements in the old list (use list comprehension).**

Source code:

```
m=[0,1,2,3,4,5,6,7,8,9,10]
```

```
print("Old list:",m)
```

```
n=[(i**2) for i in m]
```

```
print("New list:",n)
```

Output:

```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Old list: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
New list: [0, 1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
>>> |
```

**8.2 write a python program to generate a new list containing the character of the name stored in a use defined variable (use list comprehension).**

Source code:

```
name="Kane"
```

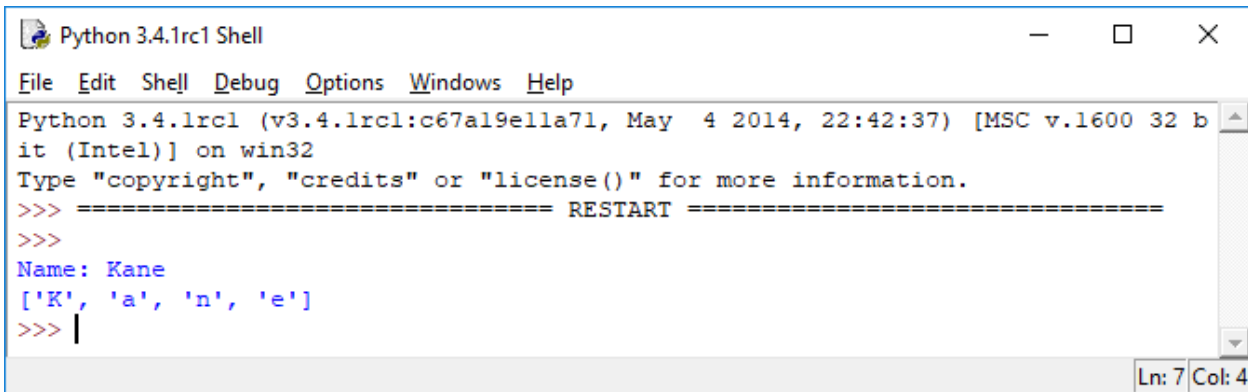
```
print("Name:",name)
```

```
m=[i for i in(name)]
```

```
print(m)
```

Output:





```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Name: Kane
['K', 'a', 'n', 'e']
>>> |
```

**8.3 write a python program to generate a new list containing the cube of the numbers stored in an old list (use list comprehension).**

Source code:

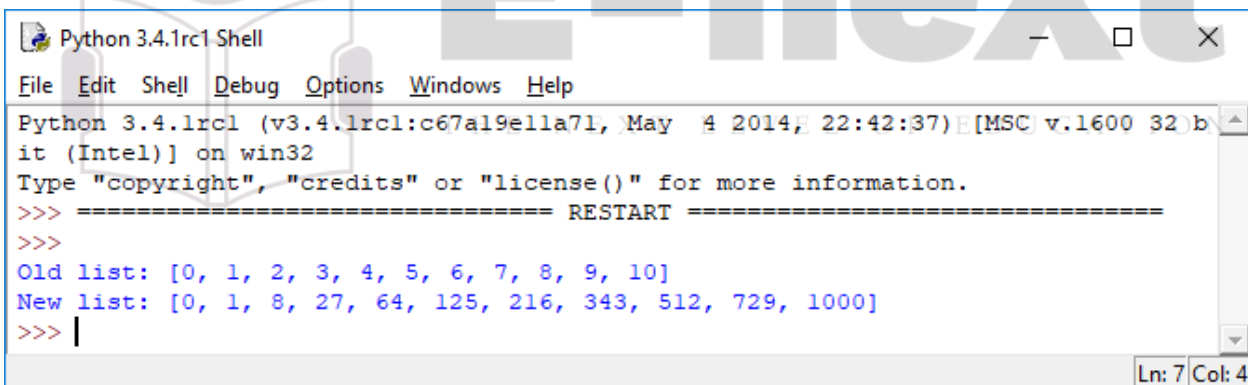
```
m=[0,1,2,3,4,5,6,7,8,9,10]
```

```
print("Old list:",m)
```

```
n=[(i**3) for i in m]
```

```
print("New list:",n)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Old list: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
New list: [0, 1, 8, 27, 64, 125, 216, 343, 512, 729, 1000]
>>> |
```

**8.4 write a python program to generate a new list containing the even numbers between 1-100. (use list comprehension).**

Source code:

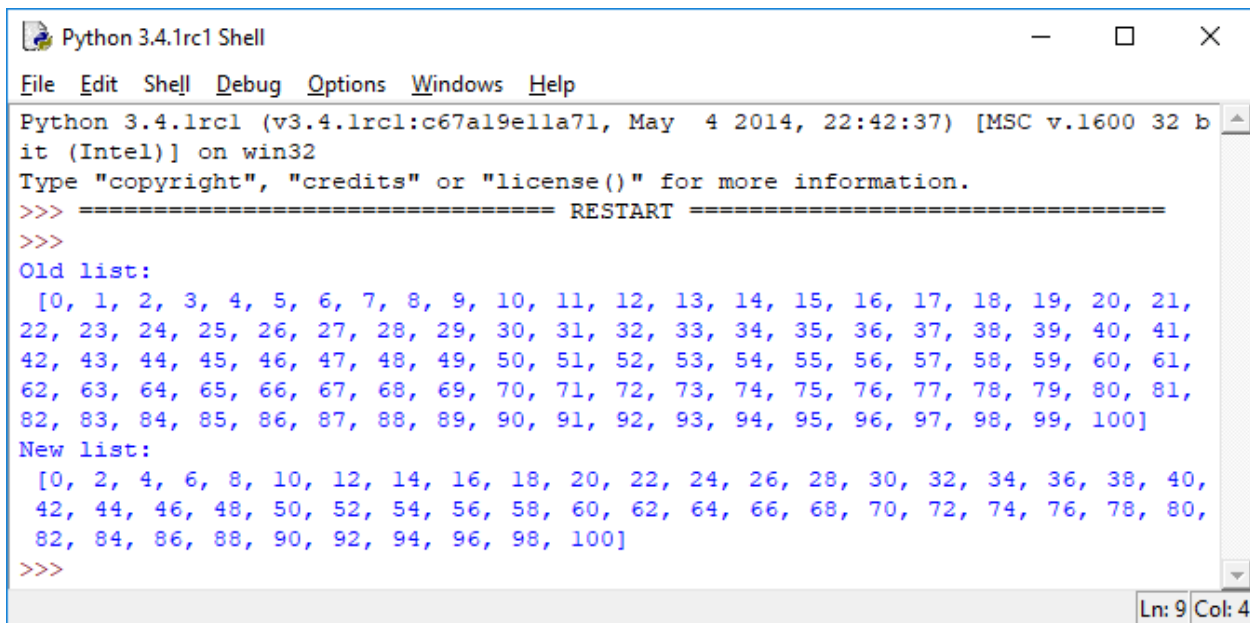
```
m=[i for i in range(0,101)]
```

```
print("Old list: \n",m)
```

```
n=[i for i in range(0,101,2)]
```

```
print("New list: \n",n)
```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Old list:
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21,
22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41,
42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61,
62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81,
82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100]
New list:
[0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40,
42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80,
82, 84, 86, 88, 90, 92, 94, 96, 98, 100]
>>>
Ln: 9 Col: 4

```

### Anonymous function

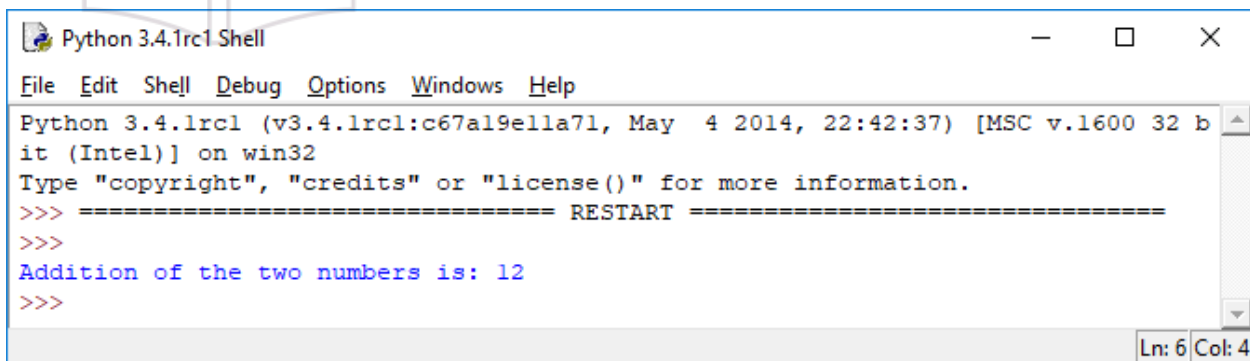
**8.5 write a python program to create an anonymous function to find addition of two user define numbers.**

Source code:

```
add=lambda a,b:(a+b)
```

```
print("Addition of the two numbers is:",add(5,7))
```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Addition of the two numbers is: 12
>>>
Ln: 6 Col: 4

```

**8.6 write a python program to create an anonymous function to check whether a number entered by the user is even or odd.**

Source code:

```
m=lambda a: (n)
```

```
n=int(input("Enter the number:"))
```

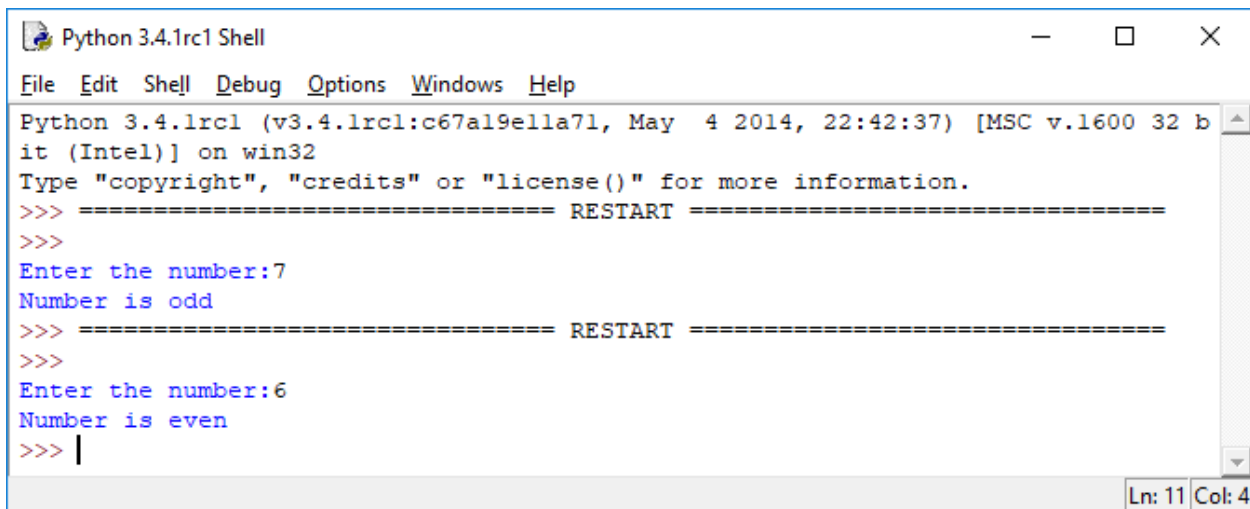
```
if n%2==0:
```

```
print("Number is even")
```

else:

```
print("Number is odd")
```

Output:



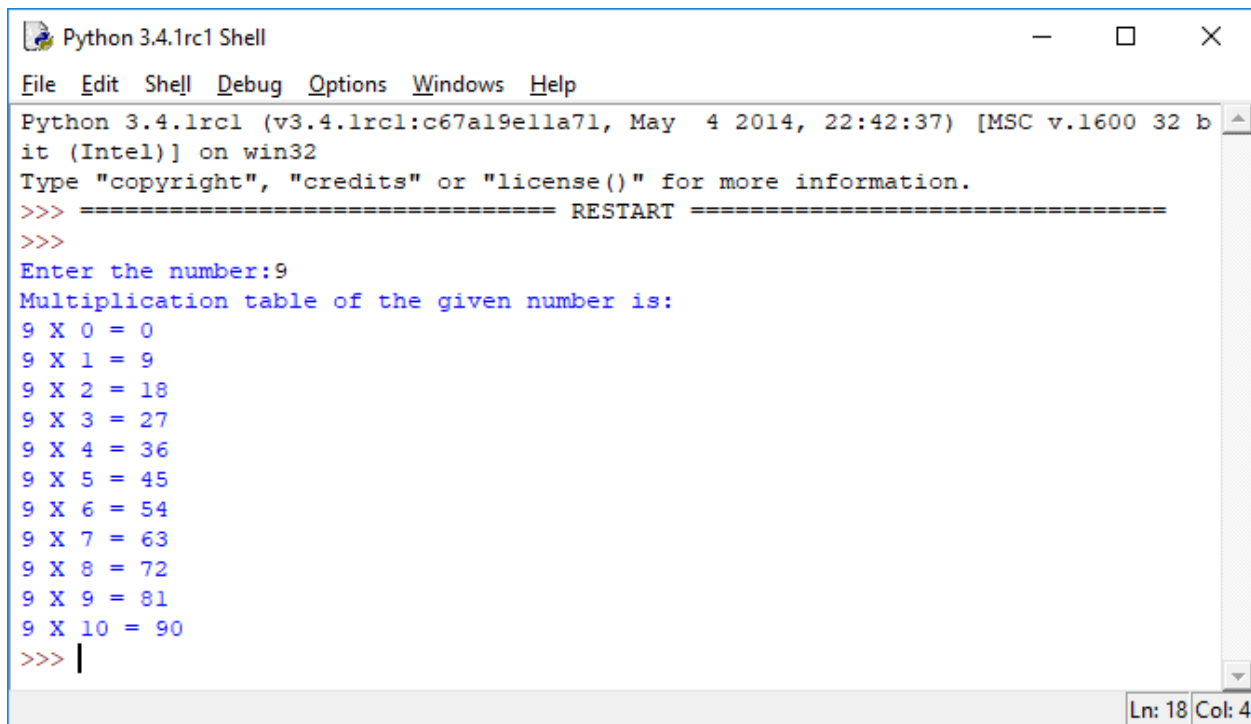
```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:7
Number is odd
>>> ===== RESTART =====
>>>
Enter the number:6
Number is even
>>> |
```

**8.7 write a python program to create an anonymous function and print multiplication table of user defined number.**

Source code:

```
m=lambda a: (n)
n=int(input("Enter the number:"))
print("Multiplication table of the given number is:")
for i in range(0,11):
    mul=i*n
    print(n,"X",i,"=",mul)
```

Output:



```

Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19e11a71, May  4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:9
Multiplication table of the given number is:
9 X 0 = 0
9 X 1 = 9
9 X 2 = 18
9 X 3 = 27
9 X 4 = 36
9 X 5 = 45
9 X 6 = 54
9 X 7 = 63
9 X 8 = 72
9 X 9 = 81
9 X 10 = 90
>>> |
Ln: 18 Col: 4

```

**8.8 write a python program to create an anonymous function and print all the numbers starting from 0 and going upto the user defiend number(hint use range()).**

Source code:

```
m=lambda a: (n)
```

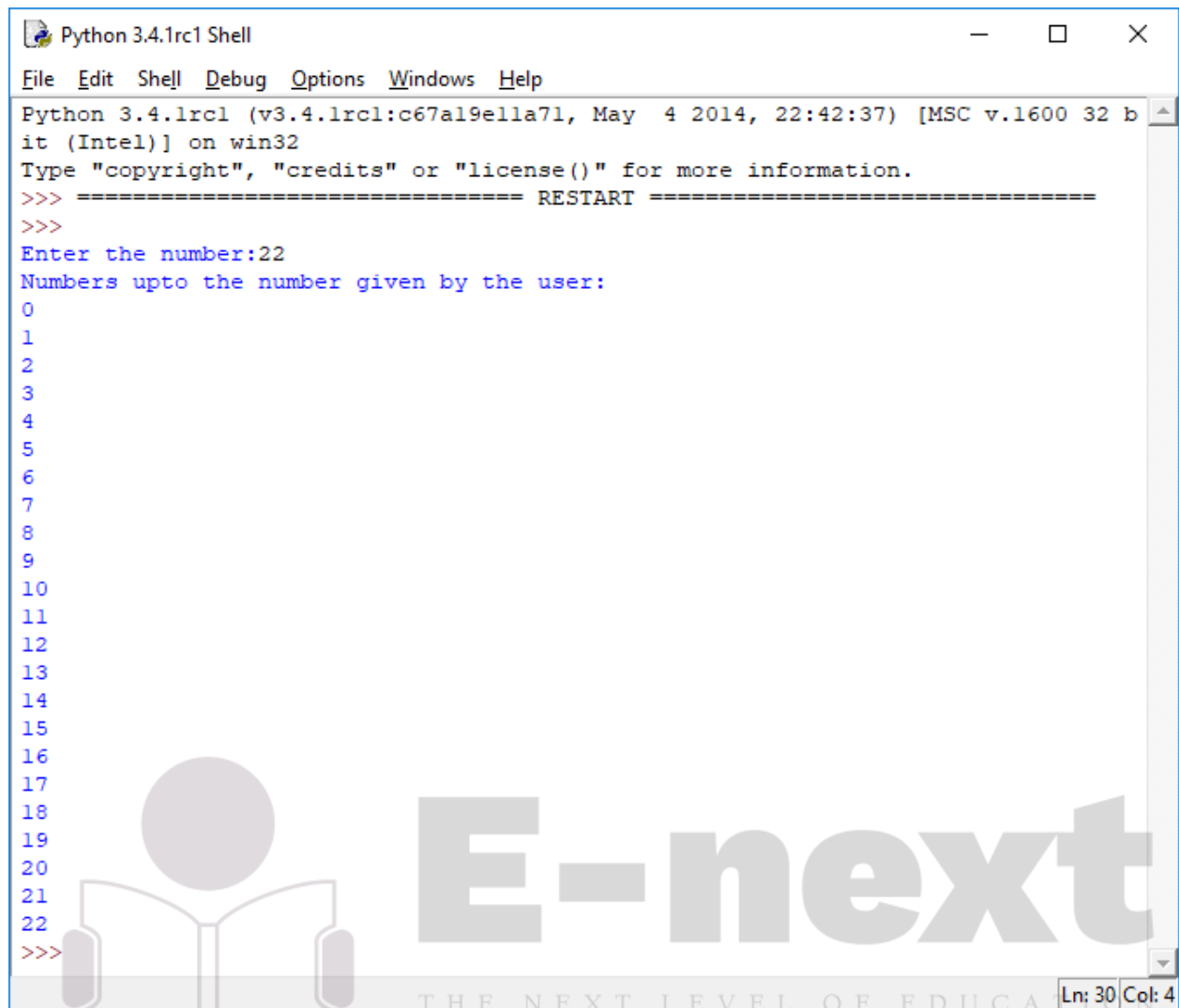
```
n=int(input("Enter the number:"))
```

```
print("Numbers upto the number given by the user:")
```

```
for i in range(0,n+1):
```

```
    print(i)
```

Output:



```
Python 3.4.1rc1 Shell
File Edit Shell Debug Options Windows Help
Python 3.4.1rc1 (v3.4.1rc1:c67a19ella71, May 4 2014, 22:42:37) [MSC v.1600 32 b
it (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
Enter the number:22
Numbers upto the number given by the user:
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
>>>
```

The image shows a screenshot of a Python 3.4.1rc1 Shell window. The window title is "Python 3.4.1rc1 Shell". The menu bar includes "File", "Edit", "Shell", "Debug", "Options", "Windows", and "Help". The main text area shows the Python interpreter's startup message, followed by a prompt for user input. The user has entered "22". The program then prints "Numbers upto the number given by the user:" followed by a list of numbers from 0 to 22, each on a new line. The status bar at the bottom right shows "Ln: 30 Col: 4".