Name – Amit Kumar

Batch No – 7

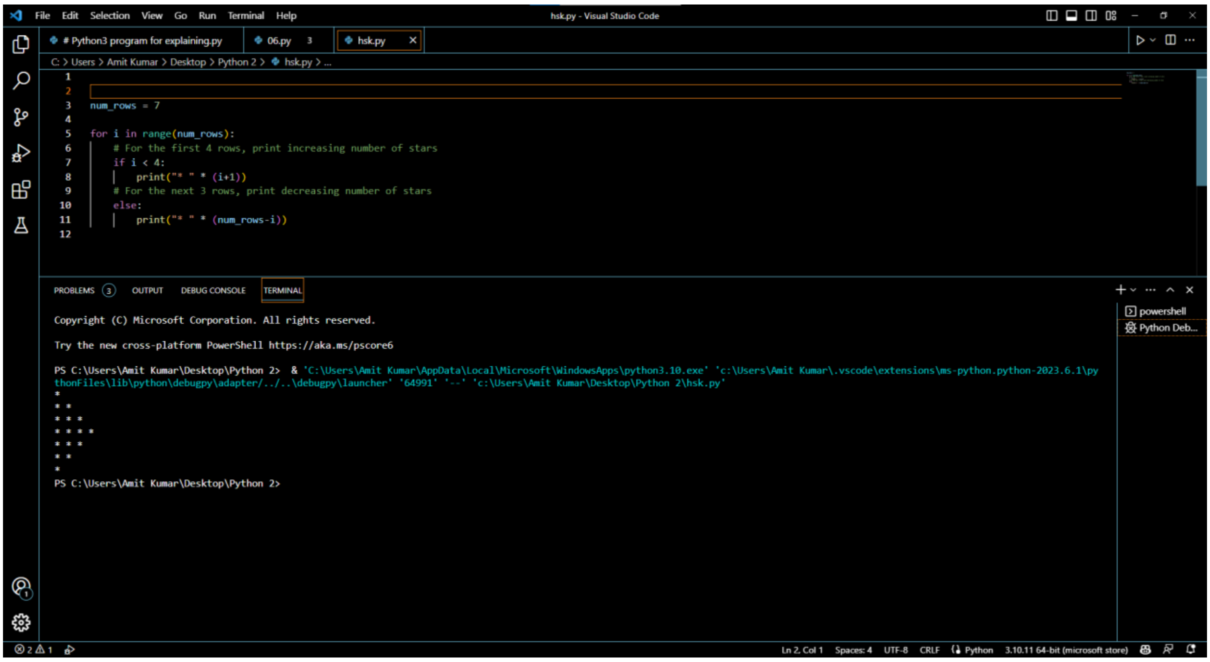
1. Write a program to print the following pattern :

```
*
* *
* * *
* * * *
* * *
* *
*
```

Syntax

```
num_rows = 7

for i in range(num_rows):
    # For the first 4 rows, print increasing number of stars
    if i < 4:
        print("* " * (i+1))
    # For the next 3 rows, print decreasing number of stars
    else:
        print("* " * (num_rows-i))
```



File Edit Selection View Go Run Terminal Help
hsk.py - Visual Studio Code
# Python3 program for explaining.py
06.py 3
hsk.py
C: > Users > Amit Kumar > Desktop > Python 2 > hsk.py > ...
PROBLEMS 3 OUTPUT DEBUG CONSOLE TERMINAL
powershell
Python Deb...
Ln 2, Col 1 Spaces: 4 UTF-8 CRLF Python 3.10.11 64-bit (microsoft store)

```

num_rows = 7

for i in range(num_rows):
    # For the first 4 rows, print increasing number of stars
    if i < 4:
        print("* " * (i+1))
    # For the next 3 rows, print decreasing number of stars
    else:
        print("* " * (num_rows-i))

```

```
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Amit Kumar\Desktop\Python 2>  & 'C:\Users\Amit Kumar\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Amit Kumar\.vscode\extensions\ms-python.python-2023.6.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '64991' '--' 'c:\Users\Amit Kumar\Desktop\Python 2\hsk.py'
*
* *
* * *
* * * *
* * *
* *
*
PS C:\Users\Amit Kumar\Desktop\Python 2>
```

2.Write a program to accept 5 even and 5 odd numbers from the user and display :

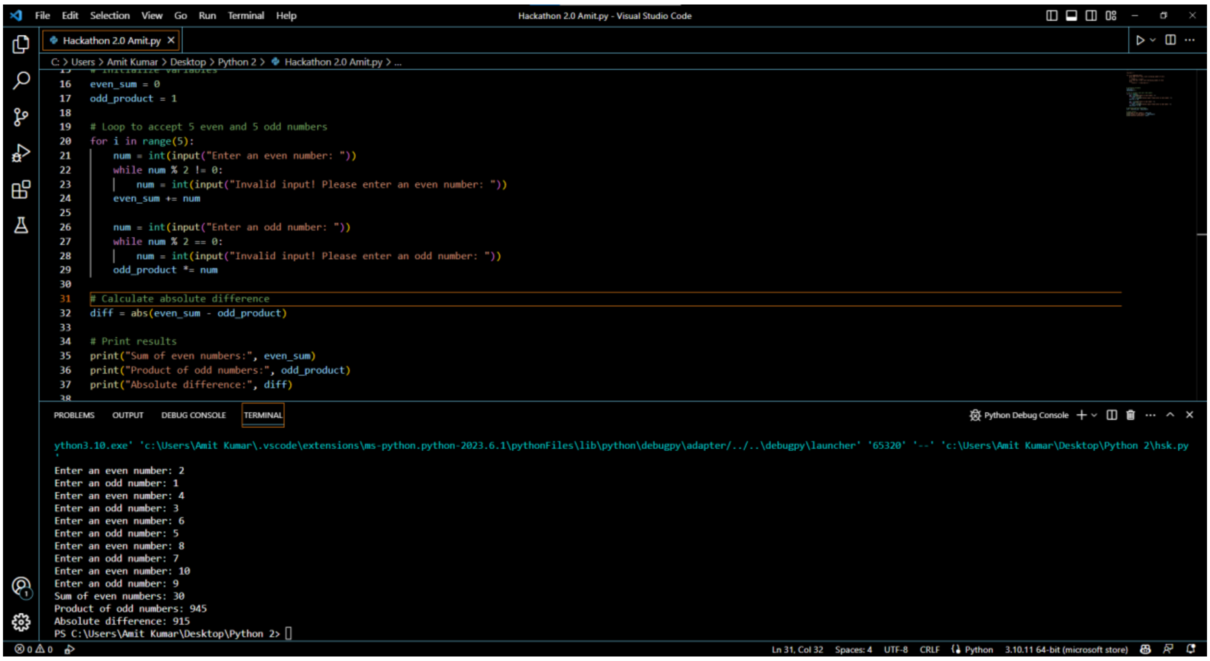
● sum of even numbers,

● product of odd numbers

● absolute dif erence of the sum and product.

Syntax

```
# Initialize variables
even_sum = 0
odd_product = 1

# Loop to accept 5 even and 5 odd numbers
for i in range(5):
    num = int(input("Enter an even number: "))
    while num % 2 != 0:
        num = int(input("Invalid input! Please enter an even number: "))
    even_sum += num

    num = int(input("Enter an odd number: "))
    while num % 2 == 0:
        num = int(input("Invalid input! Please enter an odd number: "))
    odd_product *= num

# Calculate absolute difference
diff = abs(even_sum - odd_product)

# Print results
print("Sum of even numbers:", even_sum)
print("Product of odd numbers:", odd_product)
print("Absolute difference:", diff)
```


File Edit Selection View Go Run Terminal Help
Hackathon 2.0 Amit.py - Visual Studio Code
Hackathon 2.0 Amit.py
C: > Users > Amit Kumar > Desktop > Python 2 > Hackathon 2.0 Amit.py > ...
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console
Ln 31, Col 32 Spaces: 4 UTF-8 CRLF Python 3.10.11 64-bit (microsoft store)

```
even_sum = 0
odd_product = 1

# Loop to accept 5 even and 5 odd numbers
for i in range(5):
    num = int(input("Enter an even number: "))
    while num % 2 != 0:
        num = int(input("Invalid input! Please enter an even number: "))
    even_sum += num

    num = int(input("Enter an odd number: "))
    while num % 2 == 0:
        num = int(input("Invalid input! Please enter an odd number: "))
    odd_product *= num

# Calculate absolute difference
diff = abs(even_sum - odd_product)

# Print results
print("Sum of even numbers:", even_sum)
print("Product of odd numbers:", odd_product)
print("Absolute difference:", diff)
```

```
ython3.10.exe' 'c:\Users\Amit Kumar\.vscode\extensions\ms-python.python-2023.6.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '65320' '--' 'c:\Users\Amit Kumar\Desktop\Python 2\hsk.py
'
Enter an even number: 2
Enter an odd number: 1
Enter an even number: 4
Enter an odd number: 3
Enter an even number: 6
Enter an odd number: 5
Enter an even number: 8
Enter an odd number: 7
Enter an even number: 10
Enter an odd number: 9
Sum of even numbers: 30
Product of odd numbers: 945
Absolute difference: 915
PS C:\Users\Amit Kumar\Desktop\Python 2> 
```

3. Create a class named Item that holds data about an item in a retail store. The class should have the following three properties:

● name: the name property is a String object that holds the name of the item.

● price: the price property is a double variable that holds the item's retail price

● quantity: the quantity property is an int variable that holds the number of units currently in inventory

Write the following four methods to retrieve the values from the three fields and their current inventory value

● getName( ) returns the item name of type String

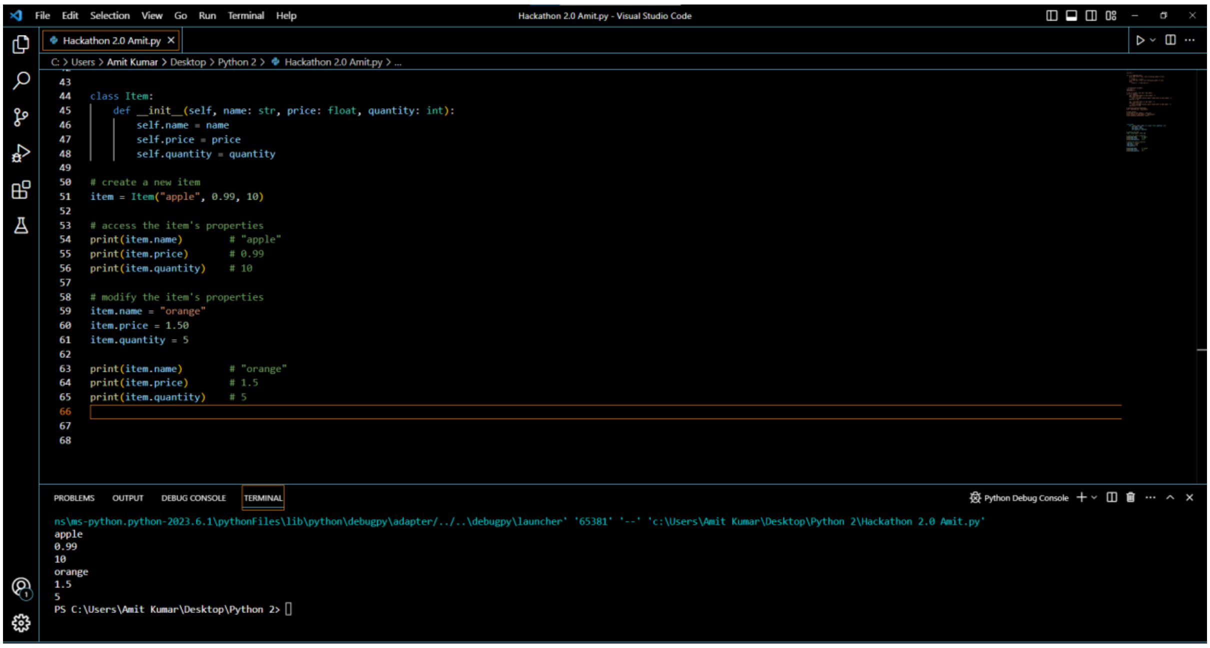
● getPrice( ) returns the price of the item of type double

- getQuantity( ) returns the number of quantities of type int
- getValue( ) that returns the current inventory value (quantity * price) of type double

Syntax.

```
class Item:
  def __init__(self, name: str, price: float, quantity: int):
    self.name = name
    self.price = price
    self.quantity = quantity

# create a new item
item = Item("apple", 0.99, 10)

# access the item's properties
print(item.name)      # "apple"
print(item.price)      # 0.99
print(item.quantity)   # 10

# modify the item's properties
item.name = "orange"
item.price = 1.50
item.quantity = 5
```

```
print(item.name)       # "orange"

print(item.price)      # 1.5

print(item.quantity)    # 5
```


File
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Terminal
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Hackathon 2.0 Amit.py - Visual Studio Code
Hackathon 2.0 Amit.py
C: > Users > Amit Kumar > Desktop > Python 2 > Hackathon 2.0 Amit.py > ...
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
Python Debug Console

```

class Item:
    def __init__(self, name: str, price: float, quantity: int):
        self.name = name
        self.price = price
        self.quantity = quantity

# create a new item
item = Item("apple", 0.99, 10)

# access the item's properties
print(item.name)        # "apple"
print(item.price)       # 0.99
print(item.quantity)    # 10

# modify the item's properties
item.name = "orange"
item.price = 1.50
item.quantity = 5

print(item.name)        # "orange"
print(item.price)       # 1.5
print(item.quantity)    # 5



```

```
ns\ms-python.python-2023.6.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '65381' '--' 'c:\Users\Amit Kumar\Desktop\Python 2\Hackathon 2.0 Amit.py'
apple
0.99
10
orange
1.5
5
PS C:\Users\Amit Kumar\Desktop\Python 2> []
```

Major Question 2

1. Ask the user number of rows to be generated of a series. Suppose user enters no. of rows = 5 then the series shall be :

9

99

999

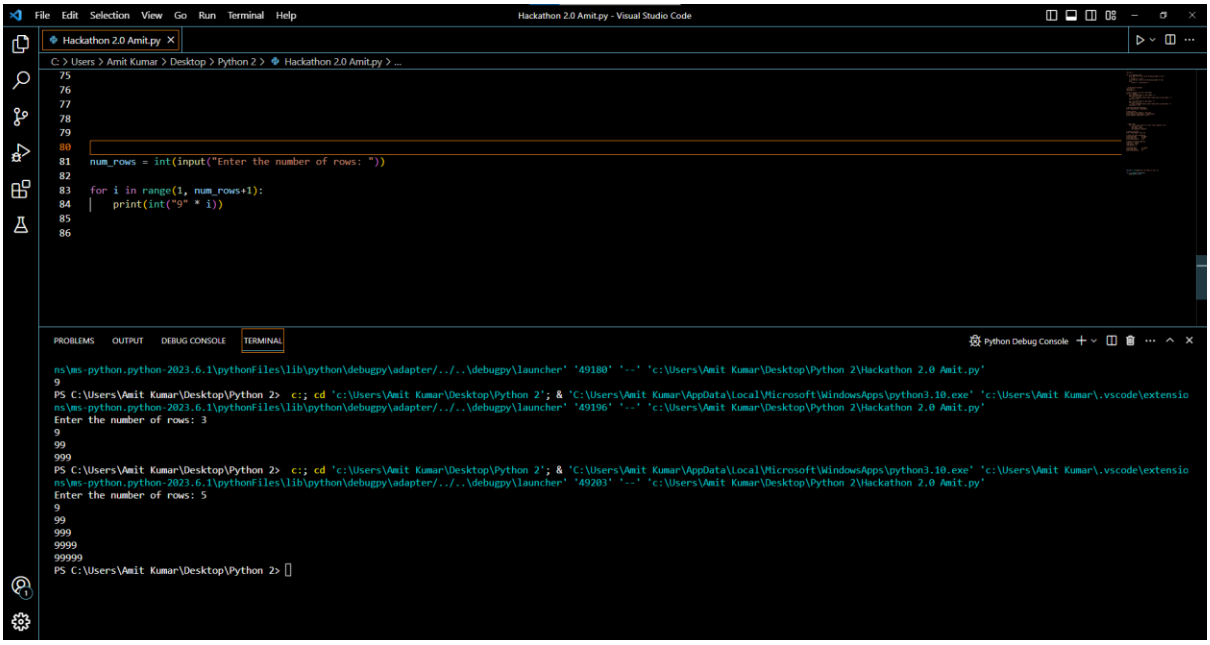
9999

99999

Syntax

```
num_rows = int(input("Enter the number of rows: "))


for i in range(1, num_rows+1):
    print(int("9" * i))
```


File Edit Selection View Go Run Terminal Help
Hackathon 2.0 Amit.py - Visual Studio Code
Hackathon 2.0 Amit.py
C: > Users > Amit Kumar > Desktop > Python 2 > Hackathon 2.0 Amit.py > ...
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console

```
num_rows = int(input("Enter the number of rows: "))

for i in range(1, num_rows+1):
    print(int("9" * i))
```

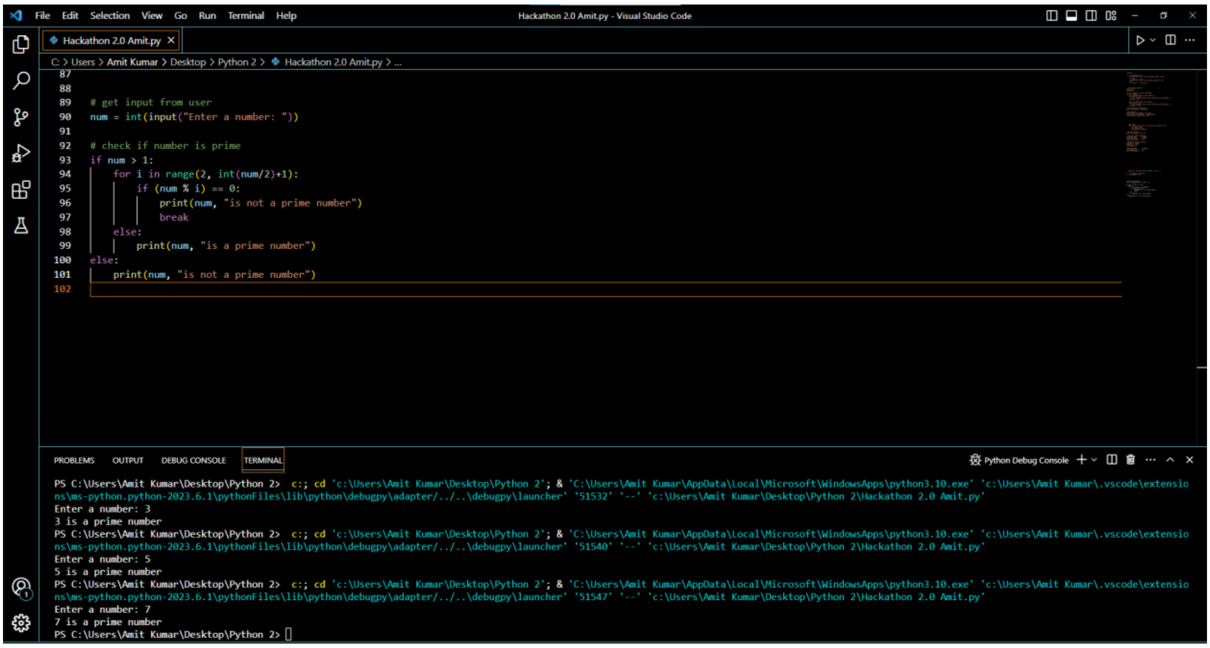
```
ns\ms-python.python-2023.6.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '49180' '--' 'c:\Users\Amit Kumar\Desktop\Python 2\Hackathon 2.0 Amit.py'
9
PS C:\Users\Amit Kumar\Desktop\Python 2>  c:; cd 'c:\Users\Amit Kumar\Desktop\Python 2'; & 'C:\Users\Amit Kumar\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Amit Kumar\.vscode\extensio
ns\ms-python.python-2023.6.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '49196' '--' 'c:\Users\Amit Kumar\Desktop\Python 2\Hackathon 2.0 Amit.py'
Enter the number of rows: 3
9
99
999
PS C:\Users\Amit Kumar\Desktop\Python 2>  c:; cd 'c:\Users\Amit Kumar\Desktop\Python 2'; & 'C:\Users\Amit Kumar\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Amit Kumar\.vscode\extensio
ns\ms-python.python-2023.6.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '49203' '--' 'c:\Users\Amit Kumar\Desktop\Python 2\Hackathon 2.0 Amit.py'
Enter the number of rows: 5
9
99
999
9999
99999
PS C:\Users\Amit Kumar\Desktop\Python 2> 
```

2. Write a program to accept a number from the user and check whether the number entered is prime or not

Syntax

```
# get input from user
num = int(input("Enter a number: "))

# check if number is prime
if num > 1:
    for i in range(2, int(num/2)+1):
        if (num % i) == 0:
            print(num, "is not a prime number")
            break
    else:
        print(num, "is a prime number")
else:
    print(num, "is not a prime number")
```



File Edit Selection View Go Run Terminal Help
Hackathon 2.0 Amit.py - Visual Studio Code
Hackathon 2.0 Amit.py
C: > Users > Amit Kumar > Desktop > Python 2 > Hackathon 2.0 Amit.py > ...
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console

```
# get input from user
num = int(input("Enter a number: "))

# check if number is prime
if num > 1:
    for i in range(2, int(num/2)+1):
        if (num % i) == 0:
            print(num, "is not a prime number")
            break
    else:
        print(num, "is a prime number")
else:
    print(num, "is not a prime number")
```

```
PS C:\Users\Amit Kumar\Desktop\Python 2>  c:; cd 'c:\Users\Amit Kumar\Desktop\Python 2'; & 'C:\Users\Amit Kumar\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Amit Kumar\.vscode\extensio
ns\ms-python.python-2023.6.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '51532' '--' 'c:\Users\Amit Kumar\Desktop\Python 2\Hackathon 2.0 Amit.py'
Enter a number: 3
3 is a prime number
PS C:\Users\Amit Kumar\Desktop\Python 2>  c:; cd 'c:\Users\Amit Kumar\Desktop\Python 2'; & 'C:\Users\Amit Kumar\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Amit Kumar\.vscode\extensio
ns\ms-python.python-2023.6.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '51540' '--' 'c:\Users\Amit Kumar\Desktop\Python 2\Hackathon 2.0 Amit.py'
Enter a number: 5
5 is a prime number
PS C:\Users\Amit Kumar\Desktop\Python 2>  c:; cd 'c:\Users\Amit Kumar\Desktop\Python 2'; & 'C:\Users\Amit Kumar\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Amit Kumar\.vscode\extensio
ns\ms-python.python-2023.6.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '51547' '--' 'c:\Users\Amit Kumar\Desktop\Python 2\Hackathon 2.0 Amit.py'
Enter a number: 7
7 is a prime number
PS C:\Users\Amit Kumar\Desktop\Python 2> 
```