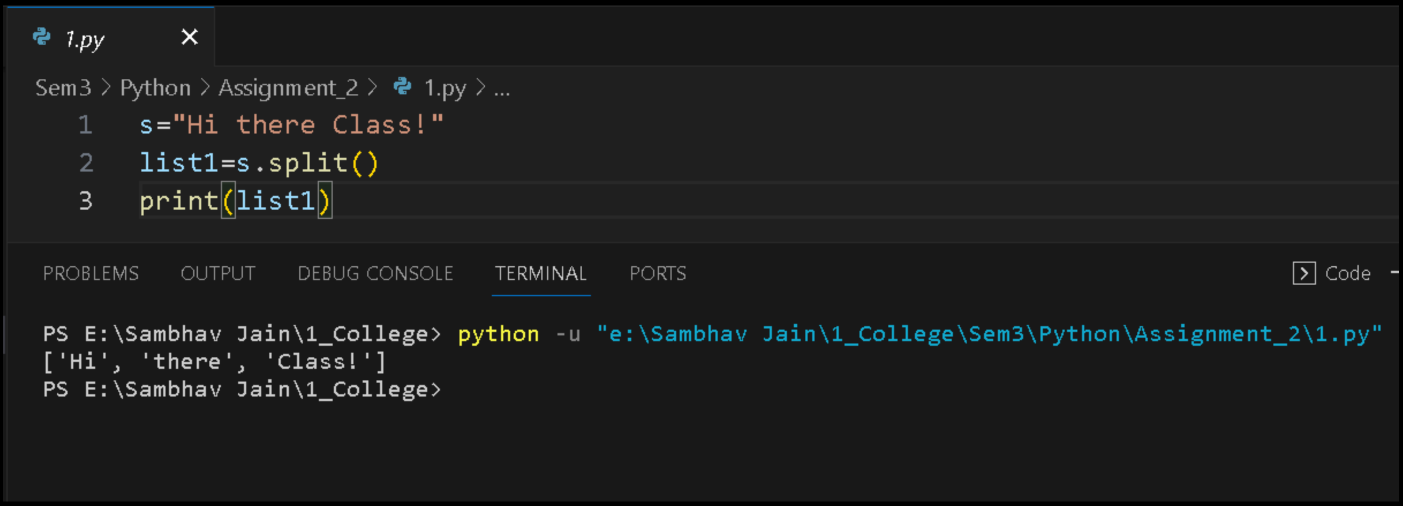
Assignment-2 Sambhav Jain

Q1. Split this string
s = "Hi there Class!"
into a list.

Solution Code:

```
s="Hi there Class!"
list1=s.split()
print(list1)
```

Output:



```
s="Hi there Class!"
list1=s.split()
print(list1)
```

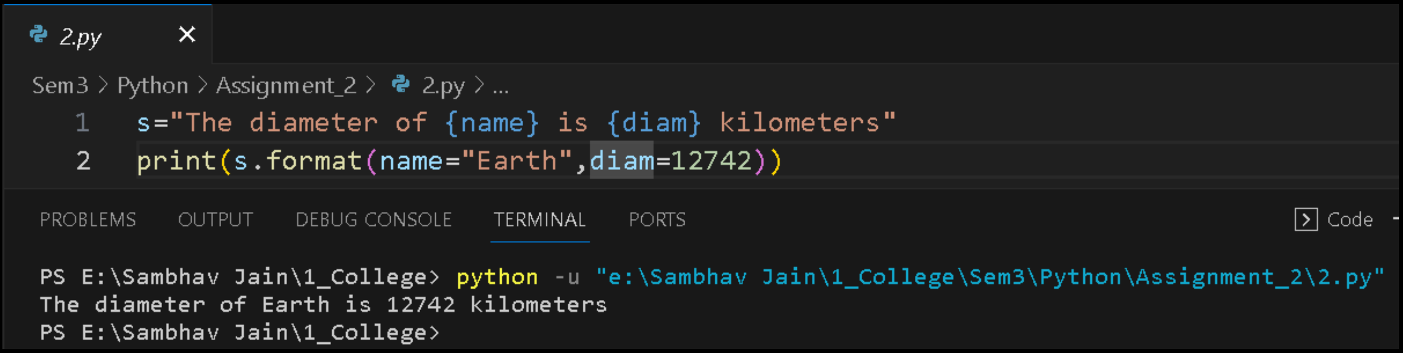
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\1.py"
['Hi', 'there', 'Class!']
PS E:\Sambhav Jain\1_College>
```

```
Q2. Given the variables
planet = "Earth"
diameter = 12742
Use .format() to print the following string:
The diameter of Earth is 12742 kilometers.
```

Solution Code:

```python
s="The diameter of {name} is {diam} kilometers"
print(s.format(name="Earth",diam=12742))
```

Output:



```python
s="The diameter of {name} is {diam} kilometers"
print(s.format(name="Earth",diam=12742))
```

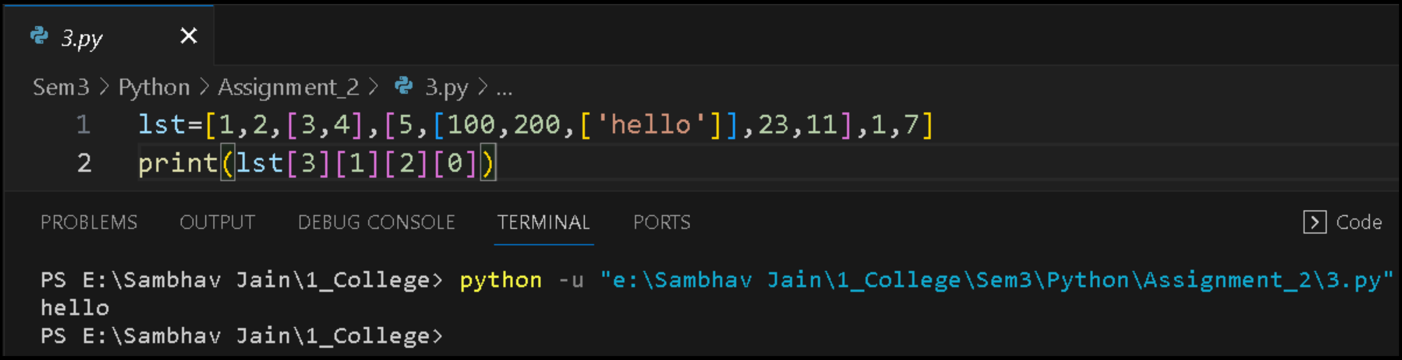
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\2.py"
The diameter of Earth is 12742 kilometers
PS E:\Sambhav Jain\1_College>
```

```
Q3. Given this nested list, use indexing to grab the word "hello"
lst = [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
```

Solution Code:

```python
lst=[1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
print(lst[3][1][2][0])
```

Output:



```python
lst=[1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
print(lst[3][1][2][0])
```

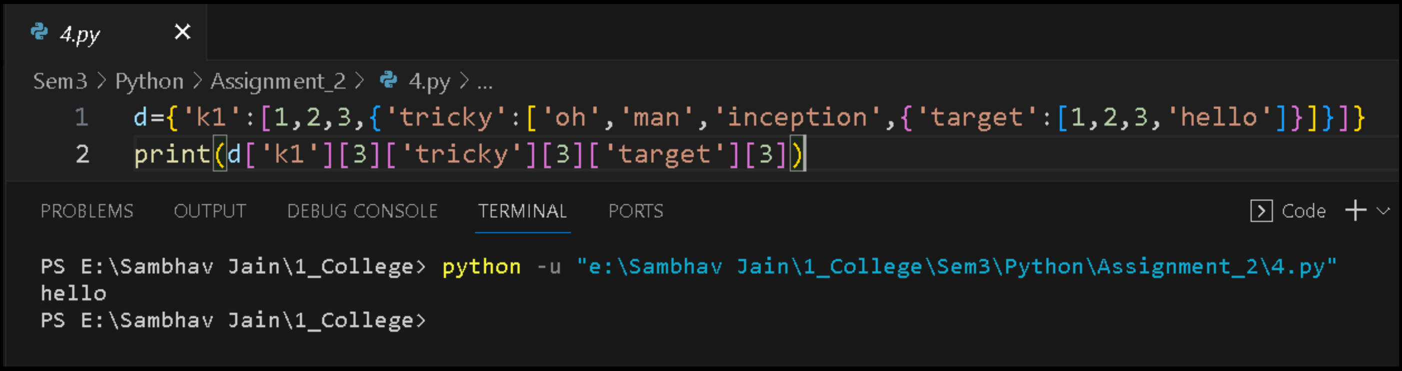
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\3.py"
hello
PS E:\Sambhav Jain\1_College>
```

```
Q4. Given this nested dictionary grab the word "hello".
d =
{'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'he
llo']}]}]}
```

Solution Code:

```
d={'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]
}]}
print(d['k1'][3]['tricky'][3]['target'][3])
```

Output:



```
d={'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
print(d['k1'][3]['tricky'][3]['target'][3])
```

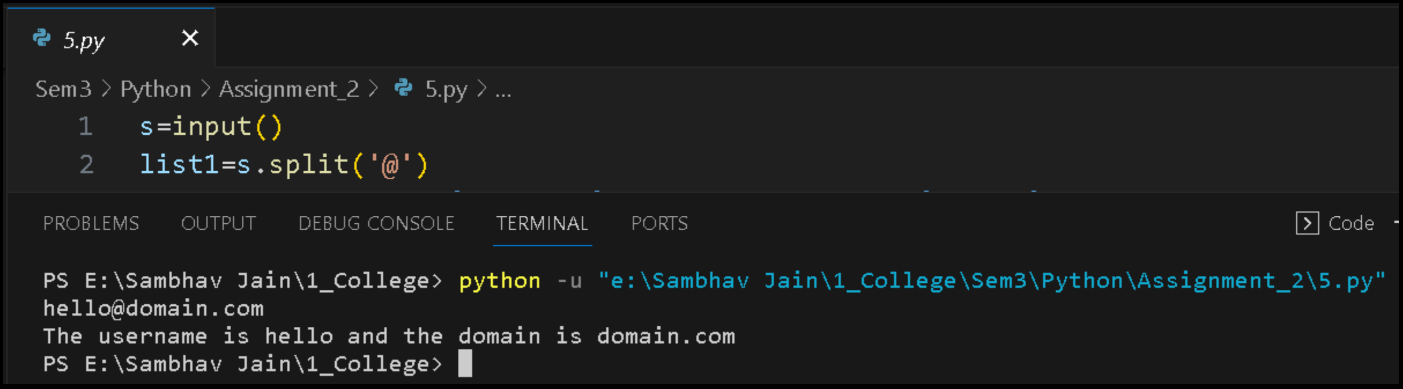
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\4.py"
hello
PS E:\Sambhav Jain\1_College>
```

Q5. Create a function that grabs the email website domain from a string in the form:
user@domain.com

Solution Code:

```
s=input()
list1=s.split('@')
s="The username is {username} and the domain is {domain}"
print(s.format(username=list1[0],domain=list1[1]))
```

Output:



```
s=input()
list1=s.split('@')
```

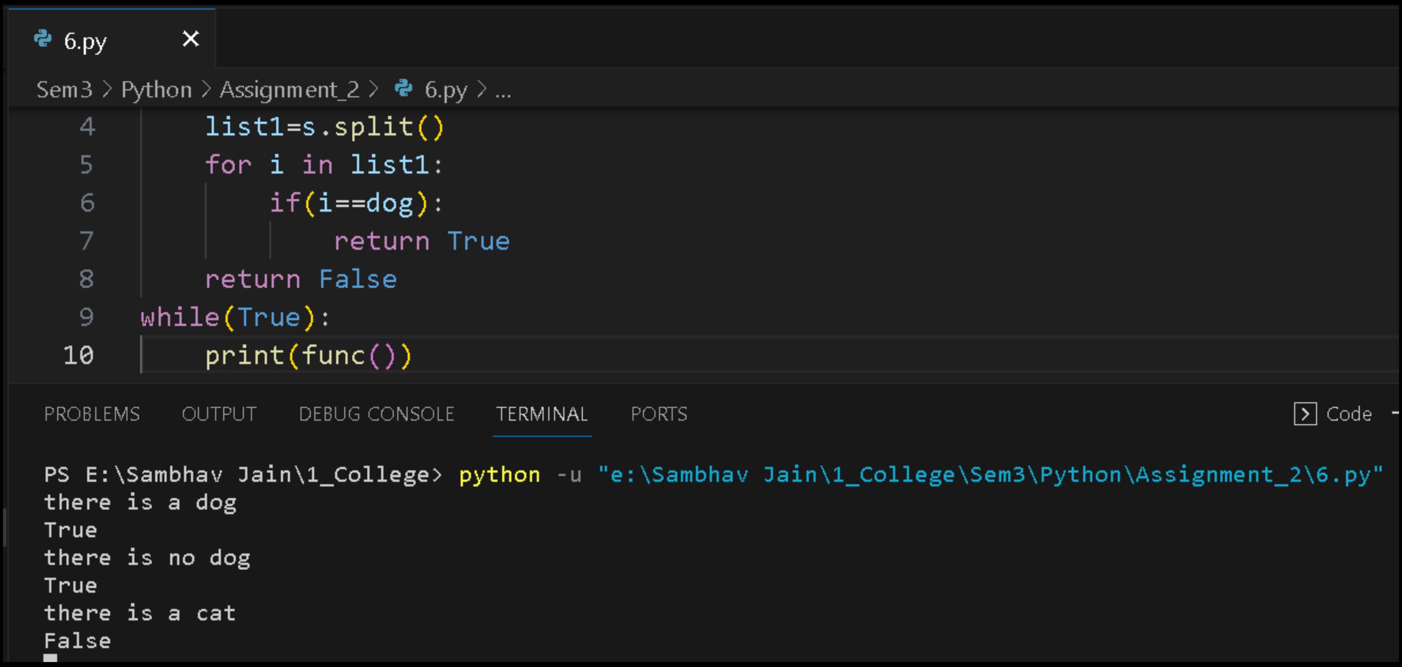
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\5.py"
hello@domain.com
The username is hello and the domain is domain.com
PS E:\Sambhav Jain\1_College> 
```

Q6. Create a basic function that returns True if the word 'dog' is contained in the input string.

Solution Code:

```
def func():
    s=input()
    dog='dog'
    list1=s.split()
    for i in list1:
        if(i==dog):
            return True
    return False
while(True):
    print(func())
```

Output:



```
    list1=s.split()
    for i in list1:
        if(i==dog):
            return True
    return False
while(True):
    print(func())
```

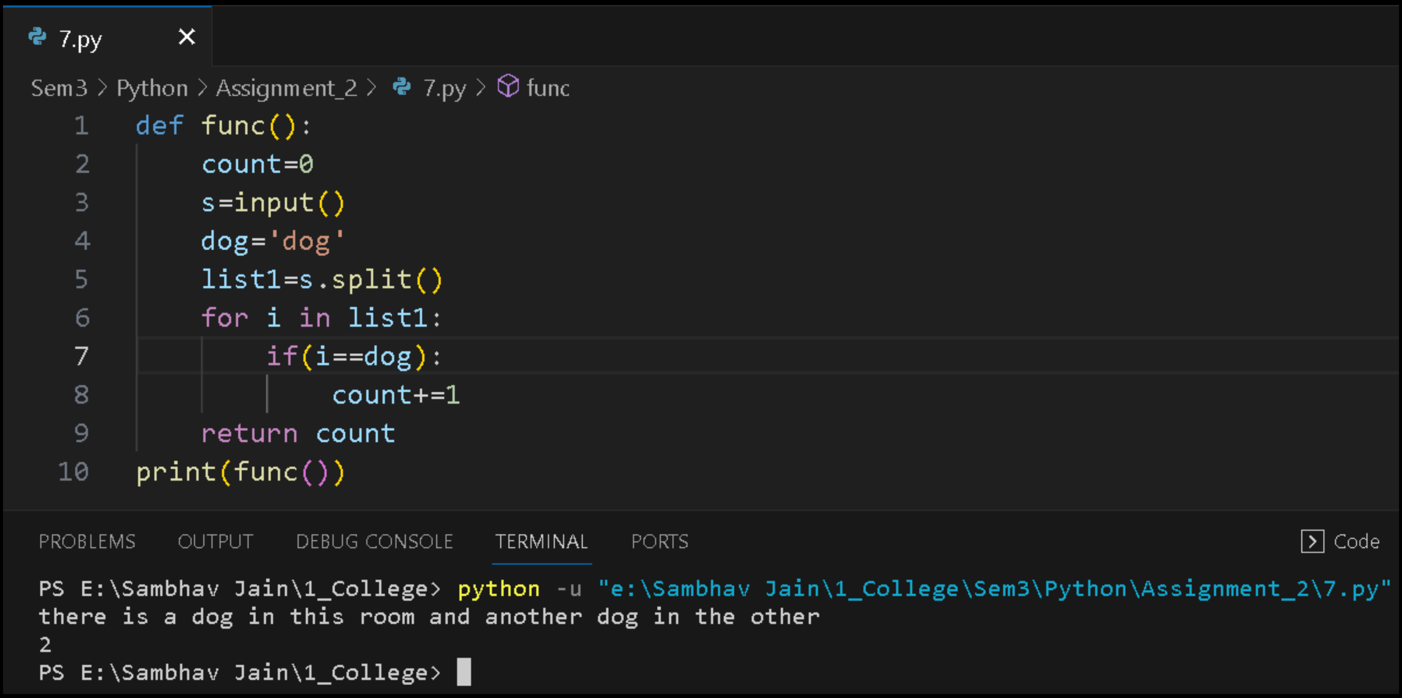
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\6.py"
there is a dog
True
there is no dog
True
there is a cat
False
```

Q7. Create a function that counts the number of times the word "dog" occurs in a string.

Solution Code:

```
def func():
    count=0
    s=input()
    dog='dog'
    list1=s.split()
    for i in list1:
        if(i==dog):
            count+=1
    return count
print(func())
```

Output:



```
def func():
    count=0
    s=input()
    dog='dog'
    list1=s.split()
    for i in list1:
        if(i==dog):
            count+=1
    return count
print(func())
```

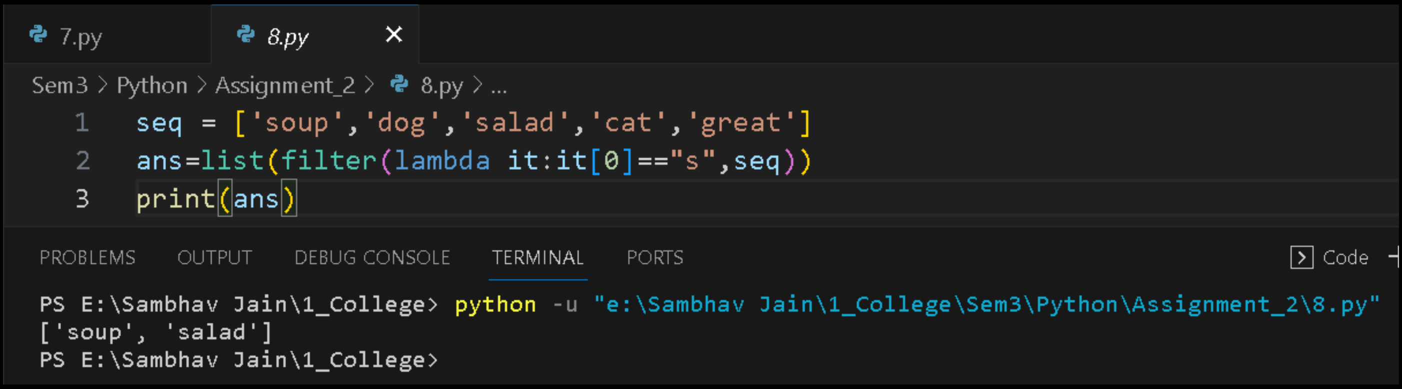
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\7.py"
there is a dog in this room and another dog in the other
2
PS E:\Sambhav Jain\1_College> 
```

Q8. Use lambda expressions and the filter() function to filter out words from a list that don't start with the letter 's'.
For example: seq = ['soup','dog','salad','cat','great']

SolutIon Code:

```
seq = ['soup','dog','salad','cat','great']
ans=list(filter(lambda it:it[0]=="s",seq))
print(ans)
```

Output:



```
seq = ['soup','dog','salad','cat','great']
ans=list(filter(lambda it:it[0]=="s",seq))
print(ans)
```

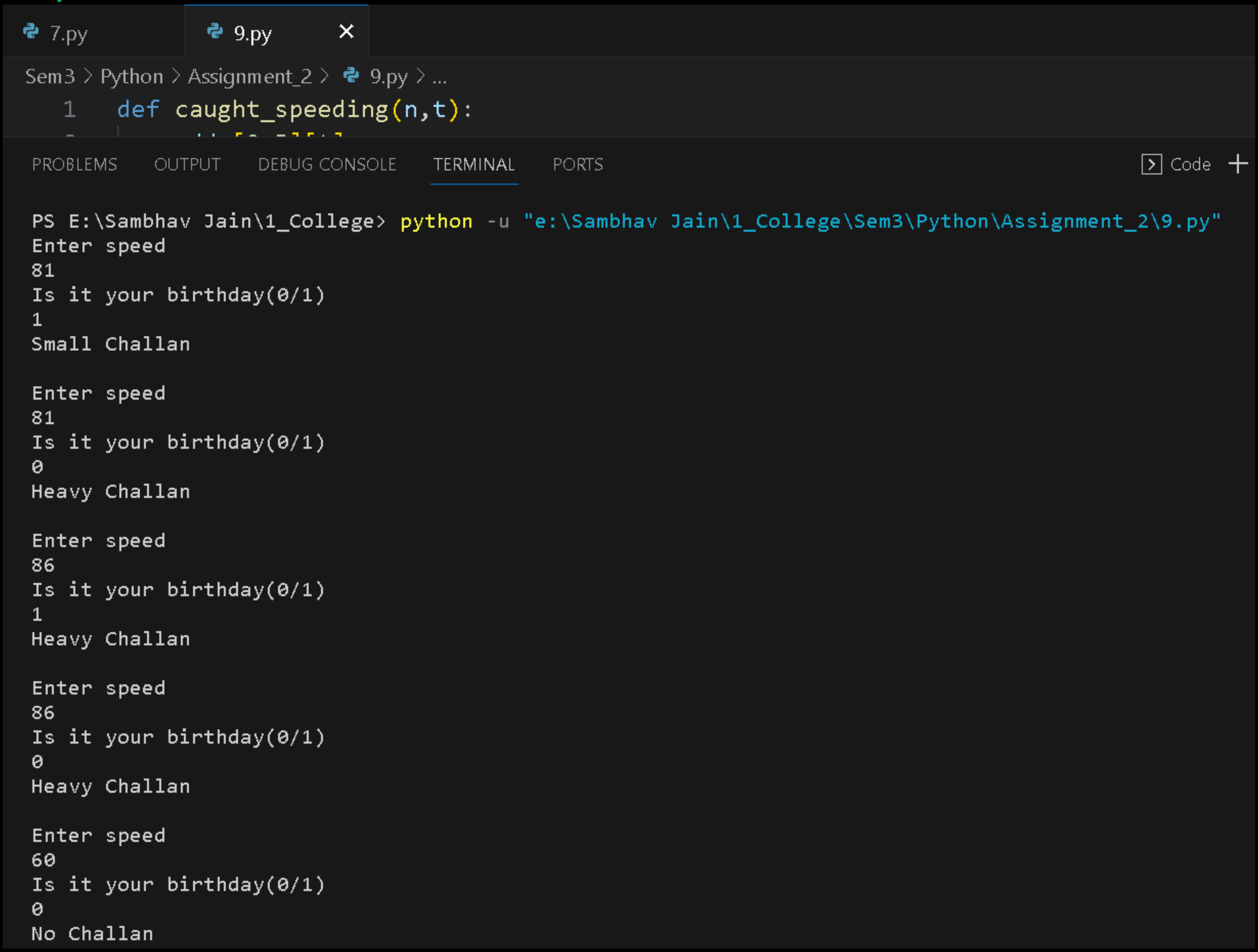
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\8.py"
['soup', 'salad']
PS E:\Sambhav Jain\1_College>
```

Q9. You are driving a little too fast, and a police officer stops you. Write a function to return one of 3 possible results: "No Challan", "Small Challan", or "Heavy Challan". If your speed is 60 or less, the result is "No Challan". If speed is between 61 and 80 inclusive, the result is "Small Challan". If speed is 81 or more, the result is "Heavy Challan". Unless it is your birthday (encoded as a Boolean value in the parameters of the function) -- on your birthday, your speed can be 5 higher in all cases.
caught_speeding(81,True)
caught_speeding(81,False)

Solution Code:

```
def caught_speeding(n,t):
    add=[0,5][t]
    if(n<=60+add):
        return "No Challan"
    if(n<=80+add):
        return "Small Challan"
    return "Heavy Challan"
while(True):
    n=int(input("Enter speed\n"))
    t=int(input("Is it your birthday(0/1)\n"))
    print(caught_speeding(n,t)+"\n")
```

Output:



```
def caught_speeding(n,t):
```

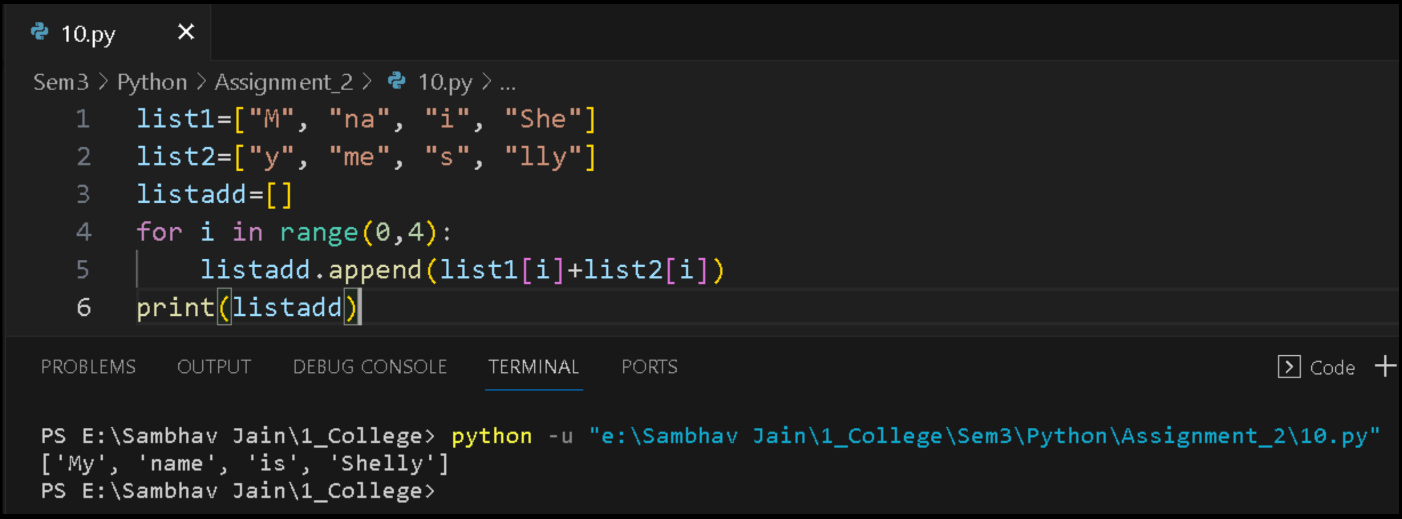
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\9.py"
Enter speed
81
Is it your birthday(0/1)
1
Small Challan

Enter speed
81
Is it your birthday(0/1)
0
Heavy Challan

Enter speed
86
Is it your birthday(0/1)
1
Heavy Challan

Enter speed
86
Is it your birthday(0/1)
0
Heavy Challan

Enter speed
60
Is it your birthday(0/1)
0
No Challan
```

```
Q10. Concatenate two lists index-wise
list1 = ["M", "na", "i", "She"]
list2 = ["y", "me", "s", "lly"]
Expected Outcome: ['My', 'name', 'is', 'Shelly']
```

Solution Code:

```
list1=["M", "na", "i", "She"]
list2=["y", "me", "s", "lly"]
listadd=[]
for i in range(0,4):
    listadd.append(list1[i]+list2[i])
print(listadd)
```

Output:



```
list1=["M", "na", "i", "She"]
list2=["y", "me", "s", "lly"]
listadd=[]
for i in range(0,4):
    listadd.append(list1[i]+list2[i])
print(listadd)
```

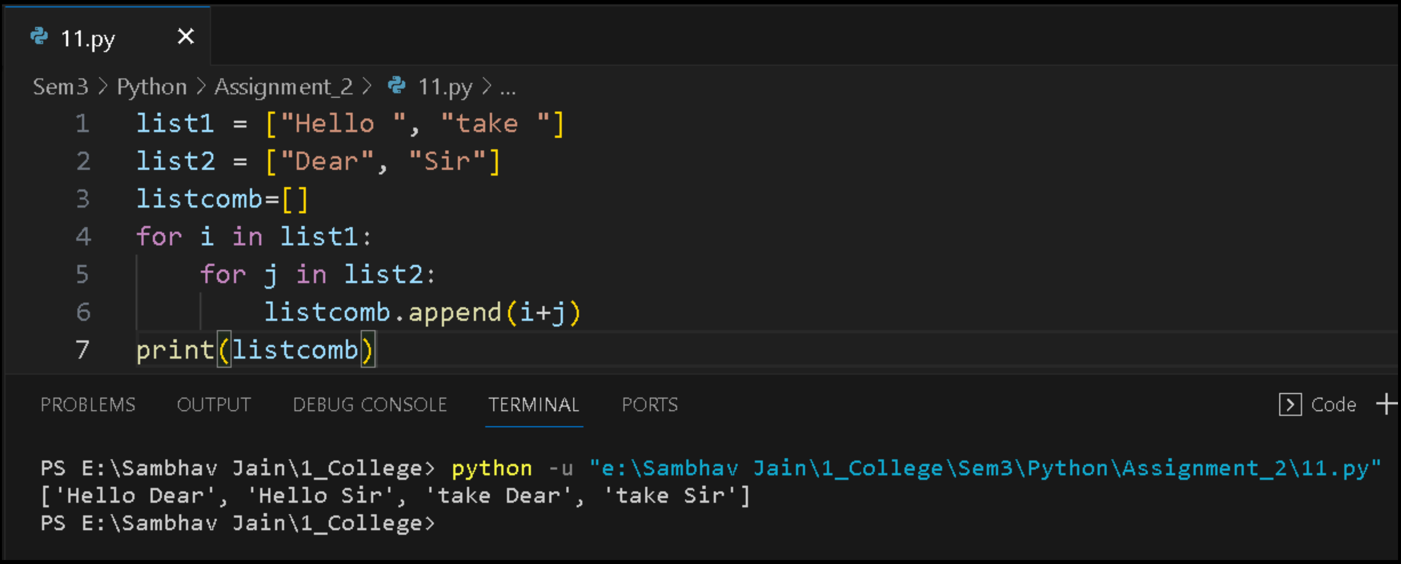
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\10.py"
['My', 'name', 'is', 'Shelly']
PS E:\Sambhav Jain\1_College>
```

```
Q11. Concatenate two lists in the following order
list1 = ["Hello ", "take "]
list2 = ["Dear", "Sir"]
Expected Output: ['Hello Dear', 'Hello Sir', 'take Dear', 'take
Sir']
```

Solution Code:

```python
list1 = ["Hello ", "take "]
list2 = ["Dear", "Sir"]
listcomb=[]
for i in list1:
    for j in list2:
        listcomb.append(i+j)
print(listcomb)
```

Output:



```python
list1 = ["Hello ", "take "]
list2 = ["Dear", "Sir"]
listcomb=[]
for i in list1:
    for j in list2:
        listcomb.append(i+j)
print(listcomb)
```

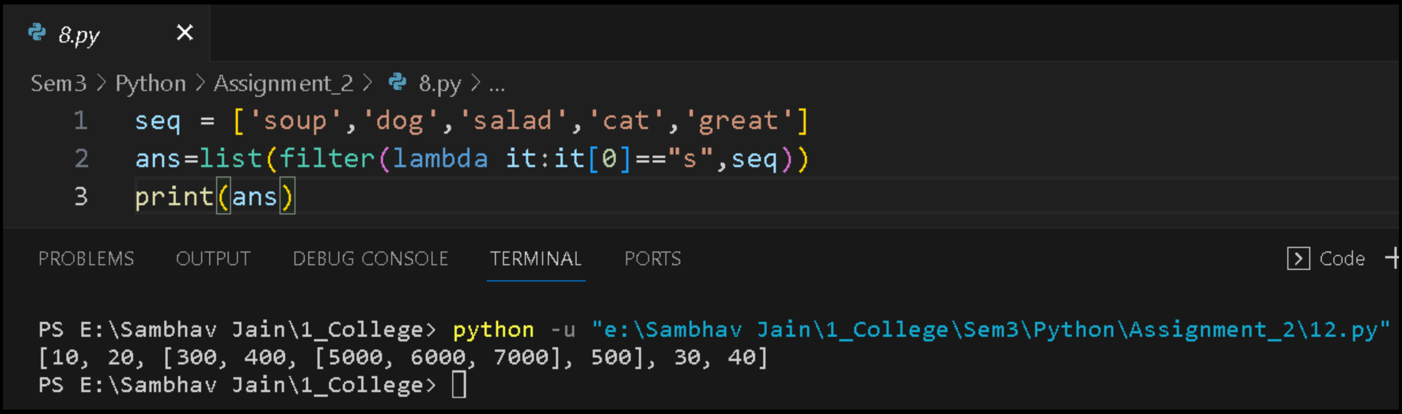
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\11.py"
['Hello Dear', 'Hello Sir', 'take Dear', 'take Sir']
PS E:\Sambhav Jain\1_College>
```

Q12. Add item 7000 after 6000 in the following Python List
list1 = [10, 20, [300, 400, [5000, 6000], 500], 30, 40]

Solution Code:

```
list1 = [10, 20, [300, 400, [5000, 6000], 500], 30, 40]
list1[2][2].append(7000)
print(list1)
```

Output:



```
seq = ['soup','dog','salad','cat','great']
ans=list(filter(lambda it:it[0]=="s",seq))
print(ans)
```

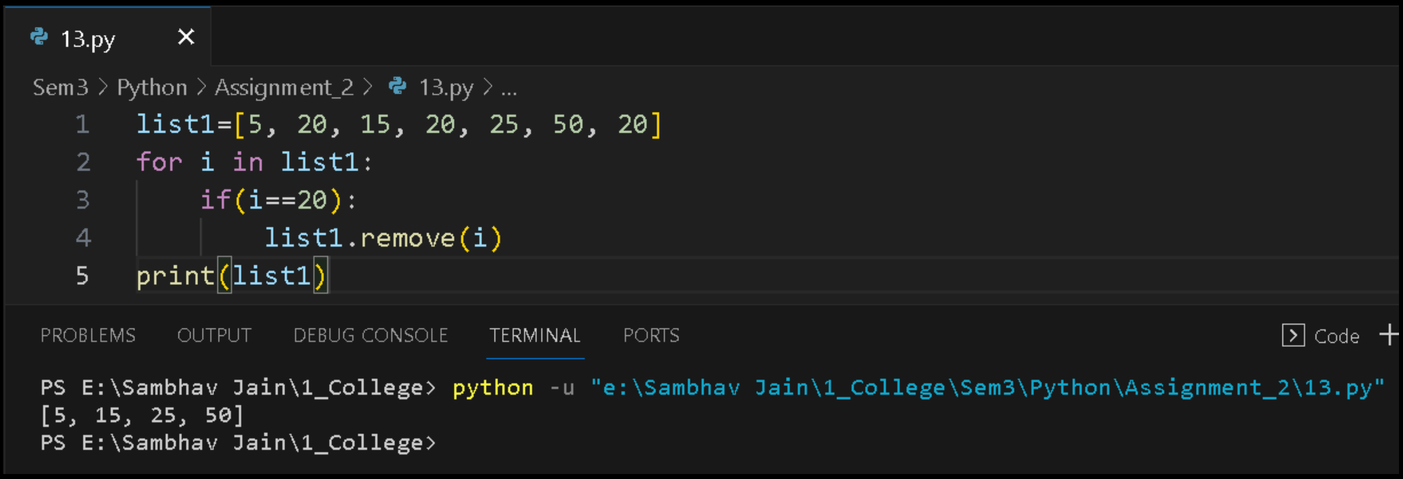
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\12.py"
[10, 20, [300, 400, [5000, 6000, 7000], 500], 30, 40]
PS E:\Sambhav Jain\1_College> 
```

Q13. Given a Python list, remove all occurrence of 20 from the list
list1 = [5, 20, 15, 20, 25, 50, 20]

Solution Code:

```
list1=[5, 20, 15, 20, 25, 50, 20]
for i in list1:
    if(i==20):
        list1.remove(i)
print(list1)
```

Output:



```
list1=[5, 20, 15, 20, 25, 50, 20]
for i in list1:
    if(i==20):
        list1.remove(i)
print(list1)
```

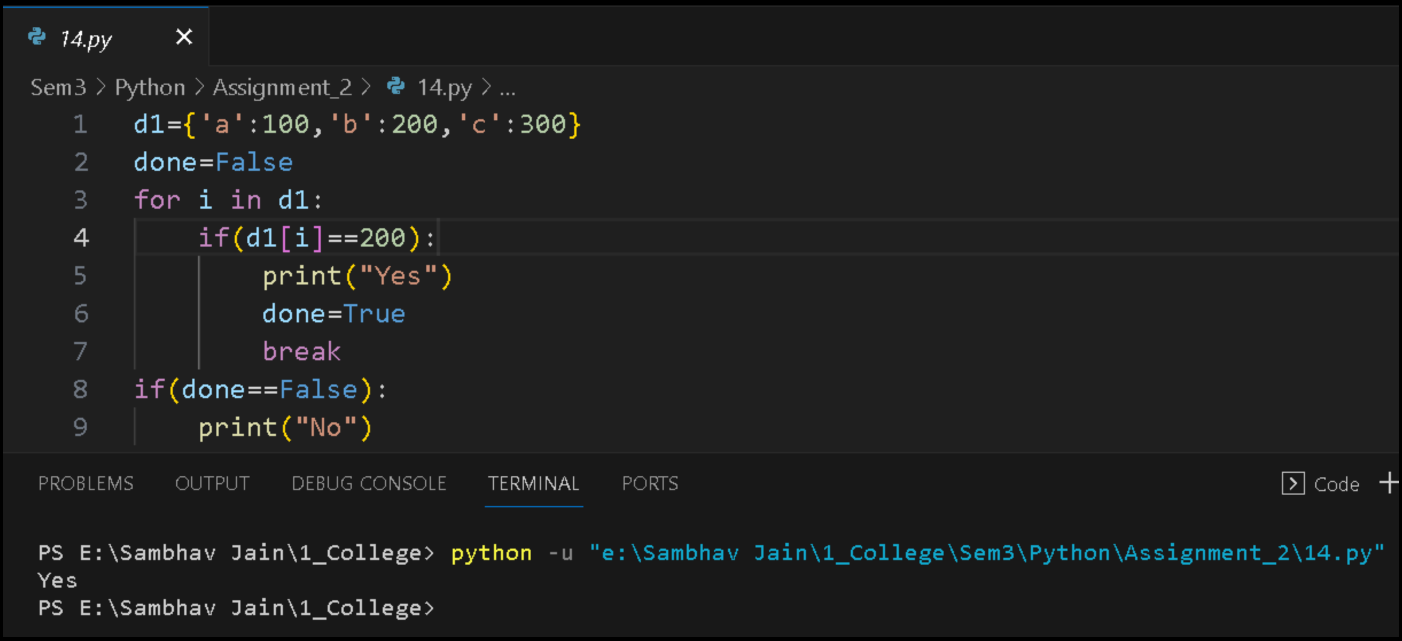
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\13.py"
[5, 15, 25, 50]
PS E:\Sambhav Jain\1_College>
```

Q14. Check if a value 200 exists in a dictionary
d1 = {'a': 100, 'b': 200, 'c': 300}

Solution Code:

```
d1={'a':100,'b':200,'c':300}
done=False
for i in d1:
    if(d1[i]==200):
        print("Yes")
        done=True
        break
if(done==False):
    print("No")
```

Output:



```
d1={'a':100,'b':200,'c':300}
done=False
for i in d1:
    if(d1[i]==200):
        print("Yes")
        done=True
        break
if(done==False):
    print("No")
```

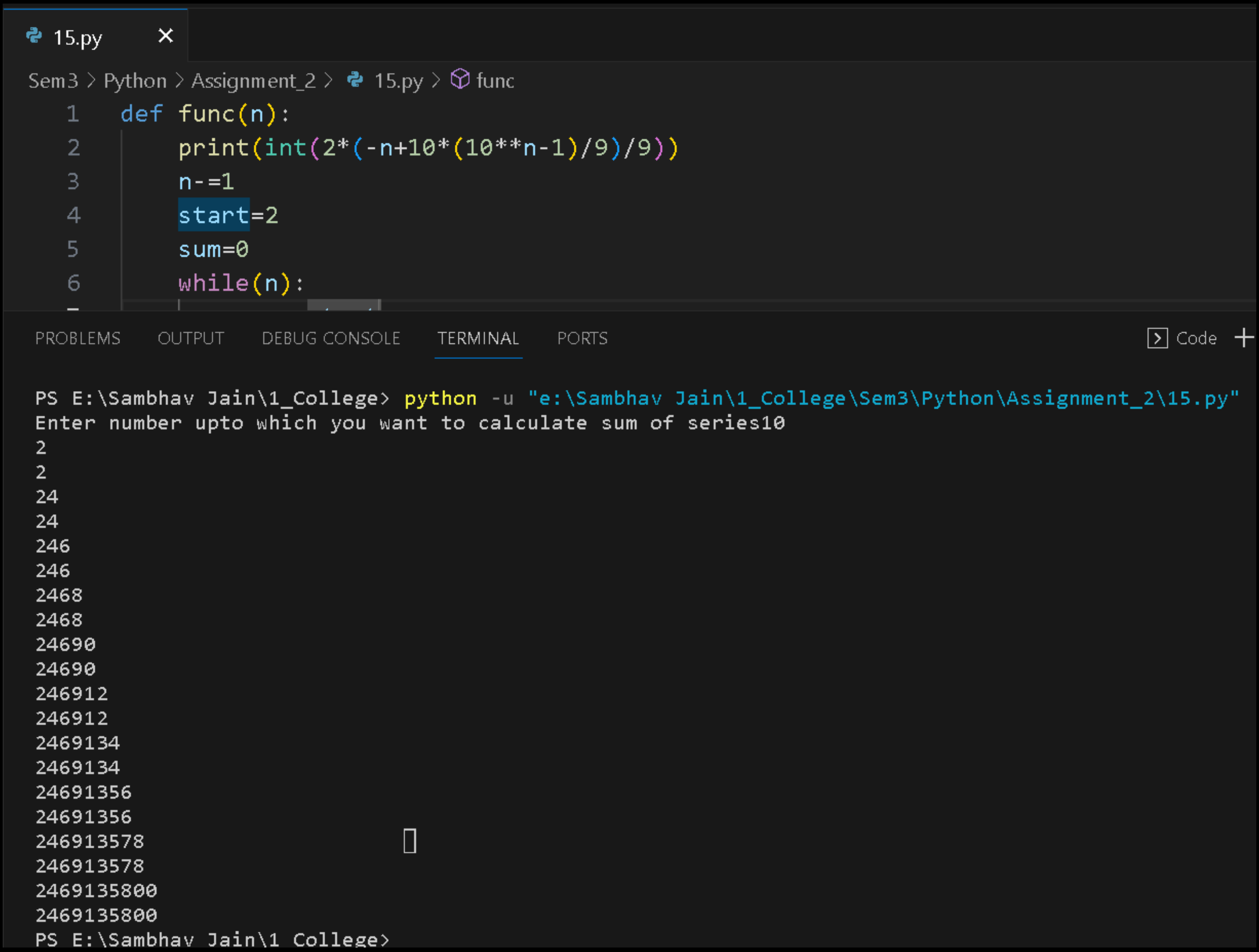
```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\14.py"
Yes
PS E:\Sambhav Jain\1_College>
```

Q15. Find the sum of the series 2 +22 + 222 + 2222 + .. n terms

Solution Code:

```
def func(n):
    print(int(2*(-n+10*(10**n-1)/9)/9))
    n-=1
    start=2
    sum=0
    while(n):
        sum+=start
        start=start*10+2
        n-=1
    sum+=start
    print(sum)
n=int(input("Enter number upto which you want to calculate sum of series"))
for i in range(1,n+1):
    func(i)
# 2+22+222...=2/9(10-1 +100-1+1000-i)
#2/9(-n+)
# s*10=s-10+pow(10,n+1)
# 9*s=10**(n+1)-10
#2*(-n+(10**(n+1)-10)/9)/9
```

Output:



```python
def func(n):
    print(int(2*(-n+10*(10**n-1)/9)/9))
    n-=1
    start=2
    sum=0
    while(n):
```

```
PS E:\Sambhav Jain\1_College> python -u "e:\Sambhav Jain\1_College\Sem3\Python\Assignment_2\15.py"
Enter number upto which you want to calculate sum of series10
2
2
24
24
246
246
2468
2468
24690
24690
246912
246912
2469134
2469134
24691356
24691356
246913578
246913578
2469135800
2469135800
PS E:\Sambhav Jain\1_College>
```