
 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>

**Aim:** Write a python program to create, append and remove lists in python.

**IDE:**



A collection of items can be managed and stored in an ordered sequence using a Python list, a flexible and robust data structure. Because lists may hold components of several data types—integers, texts, and even other lists—they are incredibly versatile for various computer applications. You can quickly add, remove, and alter elements from Python lists and carry out operations like sorting and slicing.

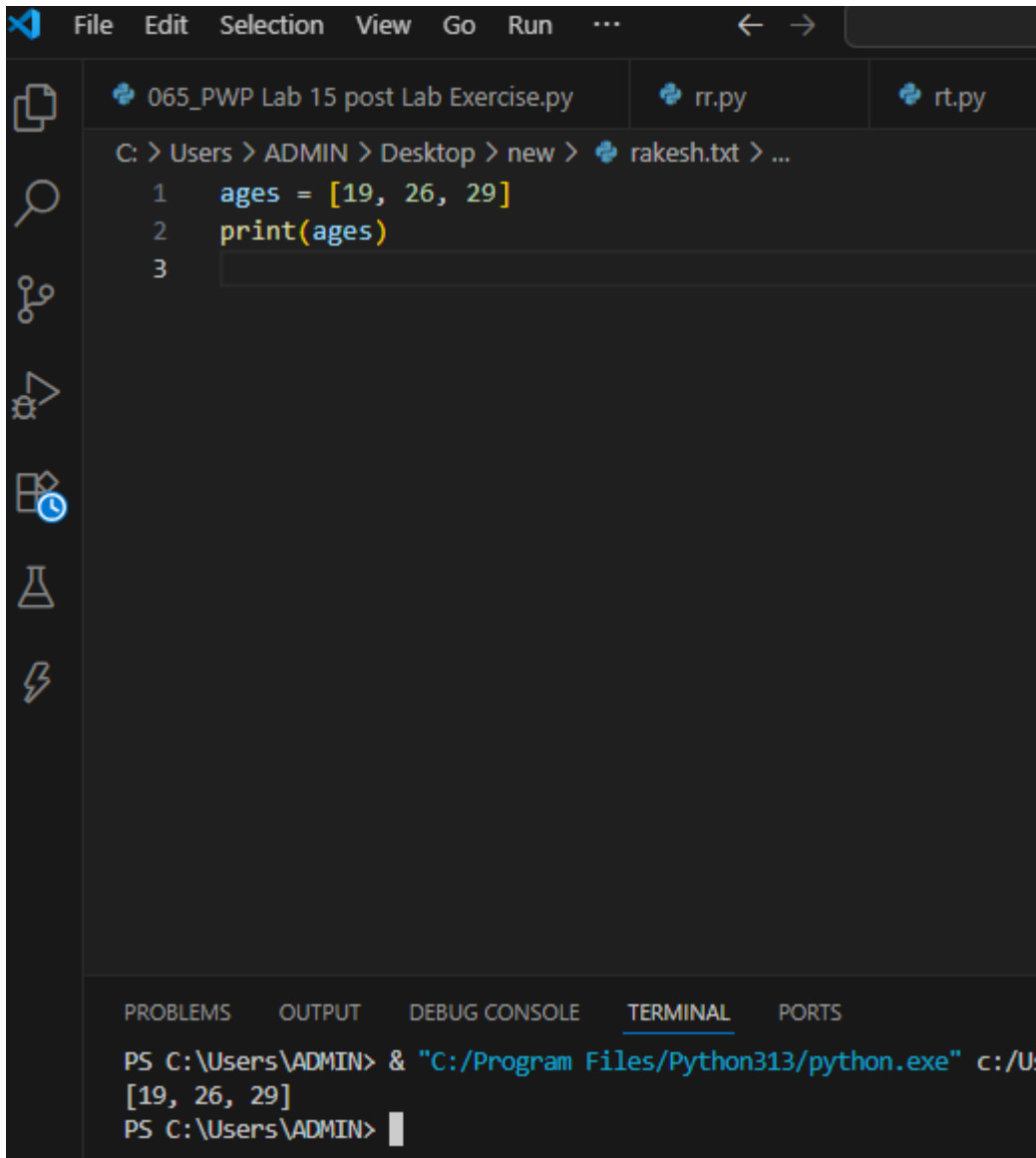
Example of List in Python

```
ages = [19, 26, 29]
```

```
print(ages)
```

Output:

 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a Python IDE with a menu bar (File, Edit, Selection, View, Go, Run, ...), a toolbar, and a file explorer. The main editor window displays the following code:

```

1  ages = [19, 26, 29]
2  print(ages)
3

```

The bottom panel shows the TERMINAL output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Us
[19, 26, 29]
PS C:\Users\ADMIN>



```

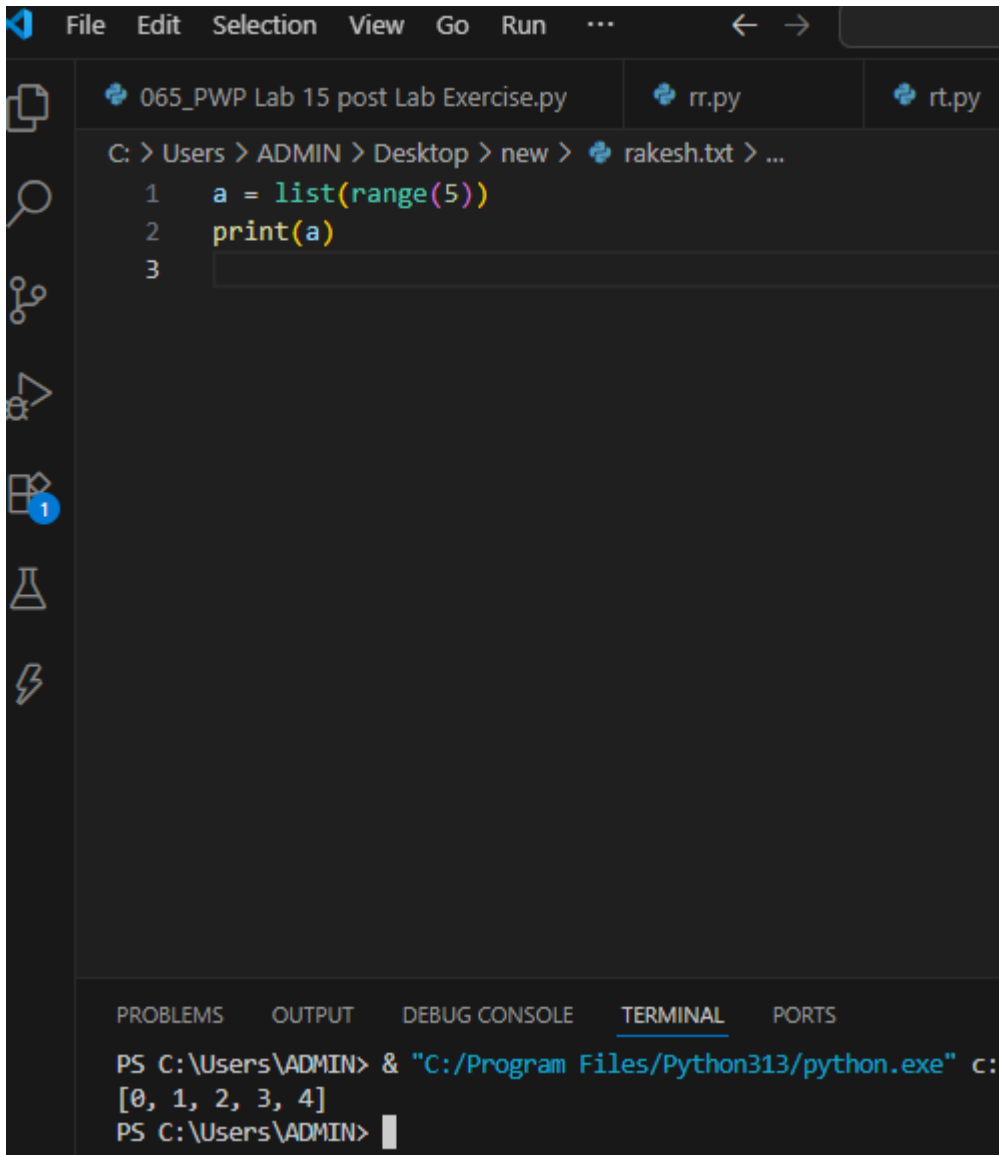
Task:

```
a = list(range(5))
```

```
print(a)
```

Output:

 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
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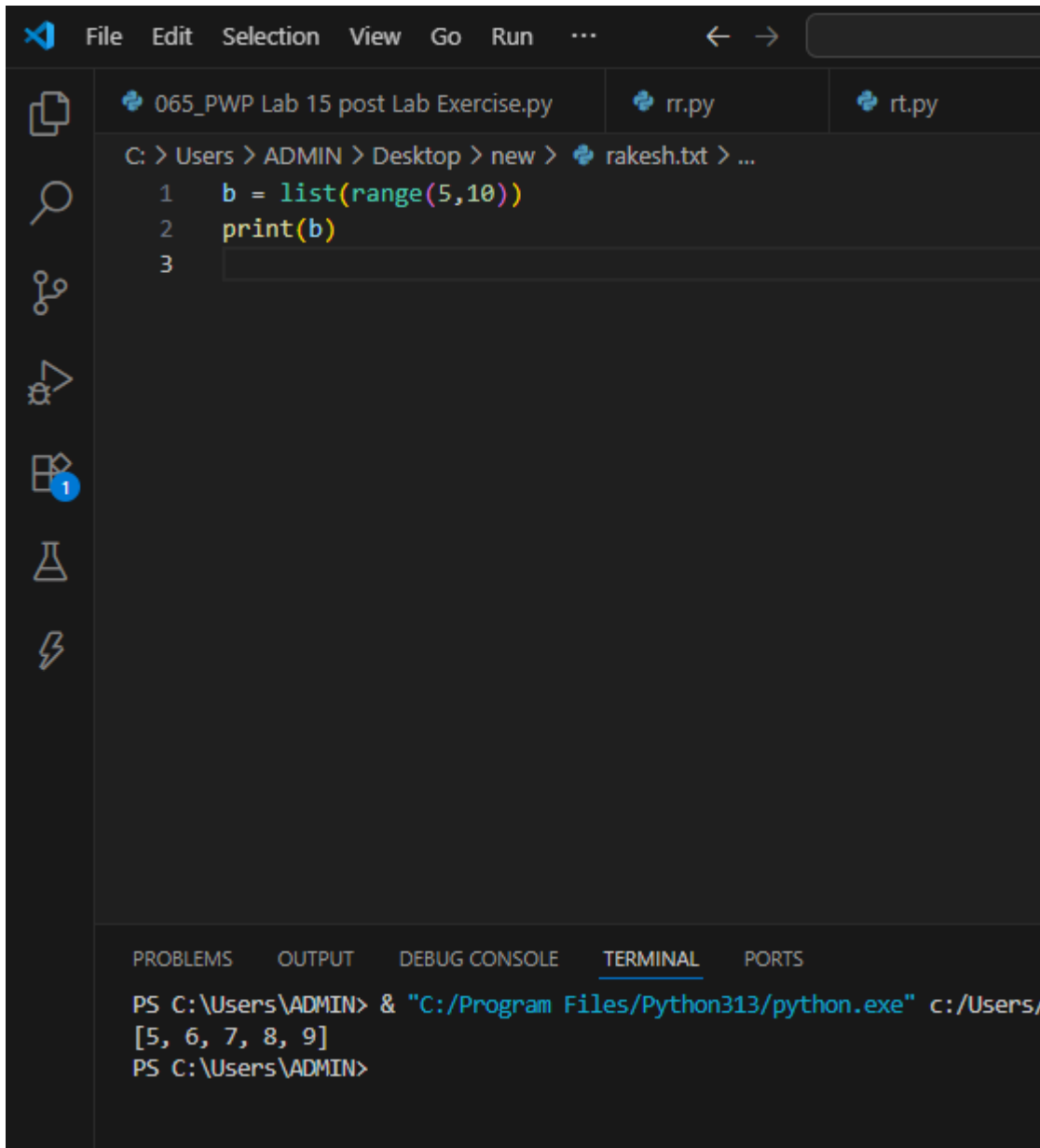
```

File Edit Selection View Go Run ...
065_PWP Lab 15 post Lab Exercise.py rr.py rt.py
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 a = list(range(5))
2 print(a)
3
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:
[0, 1, 2, 3, 4]
PS C:\Users\ADMIN>

```

b = list(range(5,10))  
print(b)  
Output:

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The screenshot shows a Python IDE with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search icon. The file explorer on the left shows a project named '065\_PWP Lab 15 post Lab Exercise.py' with sub-files 'rr.py' and 'rt.py'. The main editor window displays the following code:

```

1  b = list(range(5,10))
2  print(b)
3

```

The bottom panel shows the 'TERMINAL' tab with the following output:

```



PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/
[5, 6, 7, 8, 9]
PS C:\Users\ADMIN>

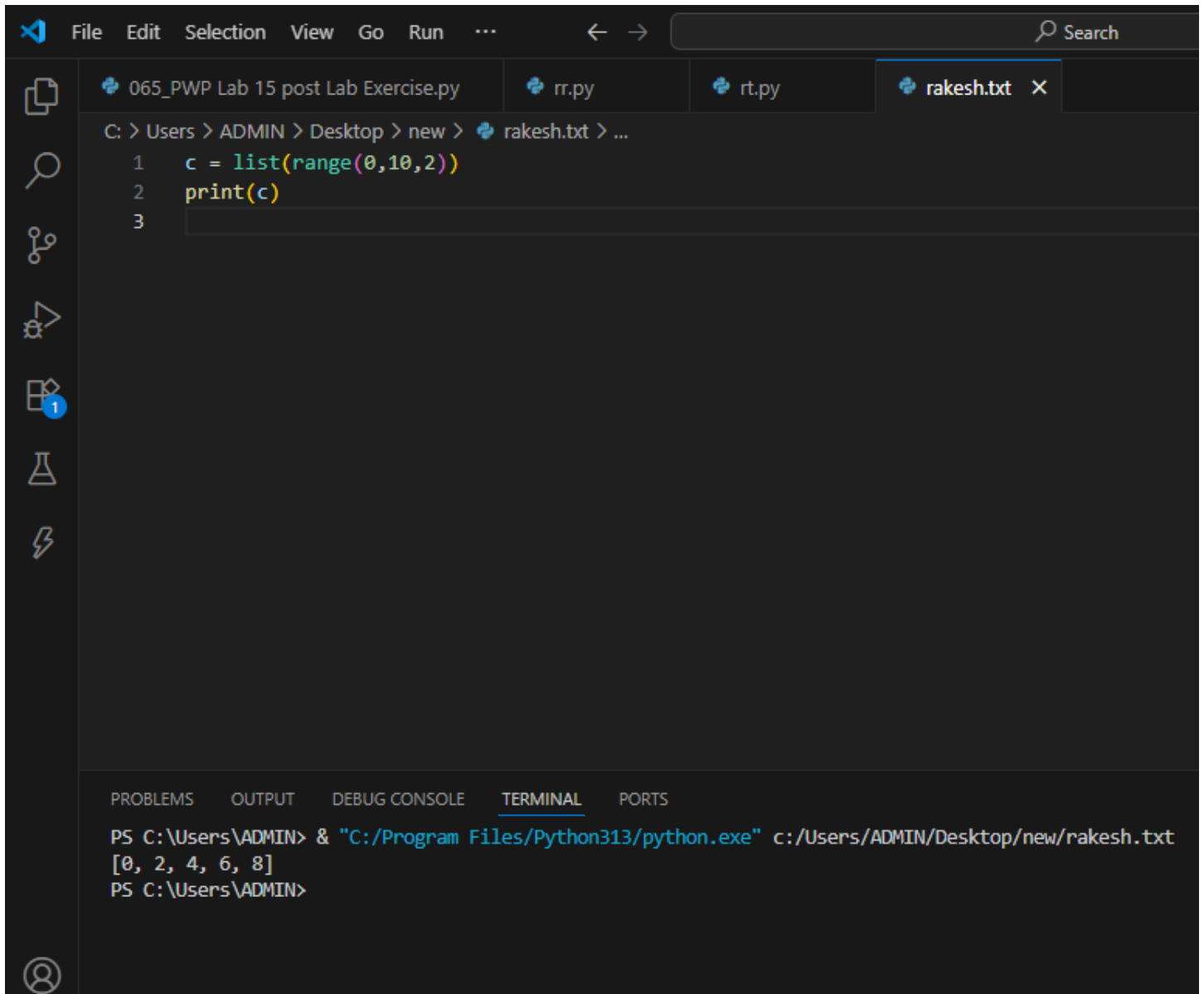
```

```

c = list(range(0,10,2))
print(c)
output:

```

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The screenshot shows a Python IDE with a menu bar (File, Edit, Selection, View, Go, Run, ...), a toolbar, and a search bar. The file explorer on the left shows a project named '065\_PWP Lab 15 post Lab Exercise.py' with sub-files 'rr.py', 'rt.py', and 'rakesh.txt'. The editor window displays the following code in 'rakesh.txt':

```

1  c = list(range(0,10,2))
2  print(c)
3

```

The terminal at the bottom shows the command to run the script and its output:

```



PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
[0, 2, 4, 6, 8]
PS C:\Users\ADMIN>

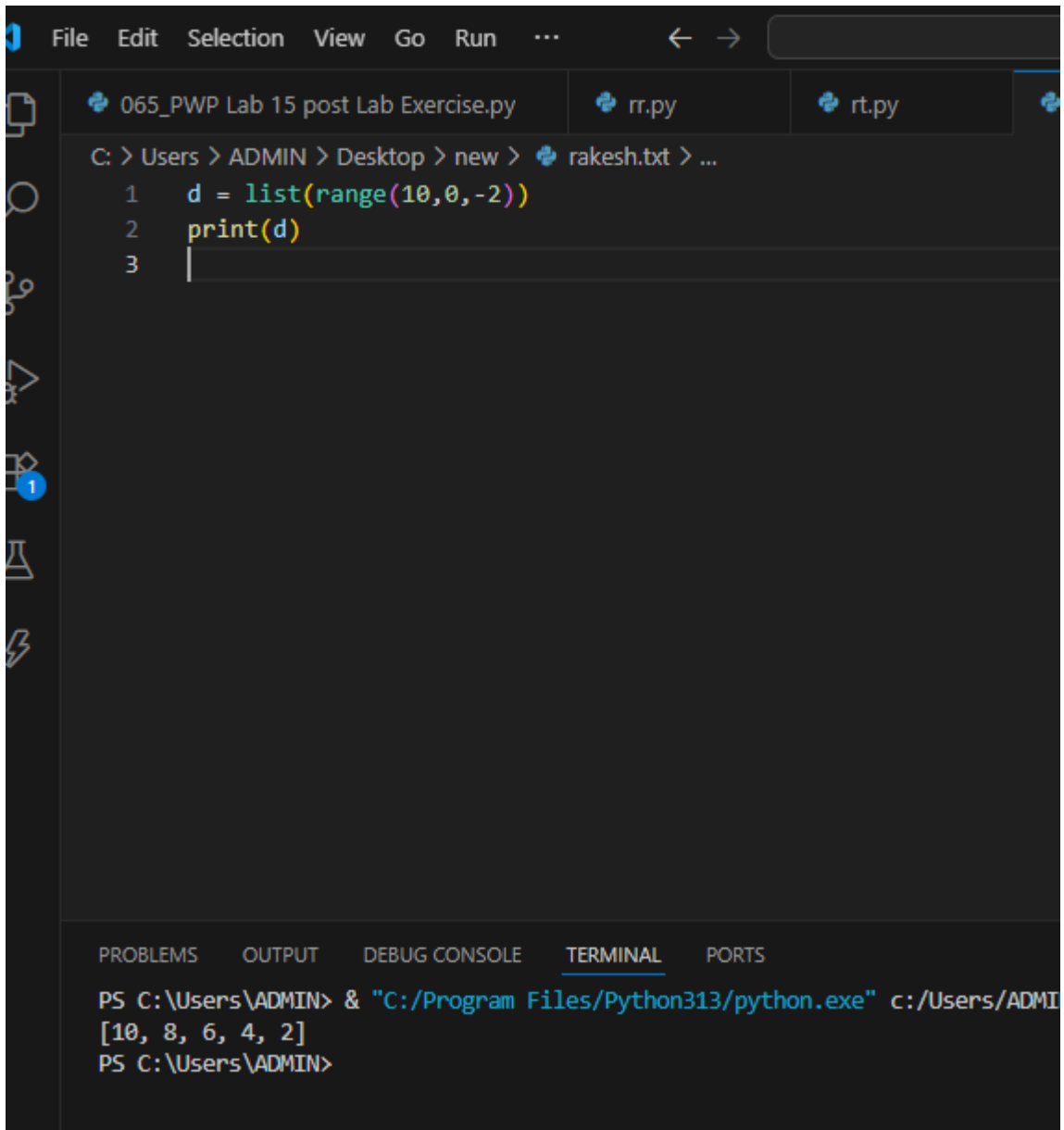
```

```

d = list(range(10,0,-2))
print(d)
output:

```

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The screenshot shows a Python IDE with a menu bar (File, Edit, Selection, View, Go, Run, ...), a toolbar with navigation icons, and a file explorer on the left. The main editor window displays a Python script in a file named 'rakesh.txt' located at 'C:\Users\ADMIN\Desktop>new>rakesh.txt'. The script contains the following code:


```
1 d = list(range(10,0,-2))
2 print(d)
3
```

The bottom panel of the IDE shows the 'TERMINAL' tab with the following output:

```
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/rakesh.txt
[10, 8, 6, 4, 2]
PS C:\Users\ADMIN>
```

Add Elements to a Python List

### 1. Python append() Method

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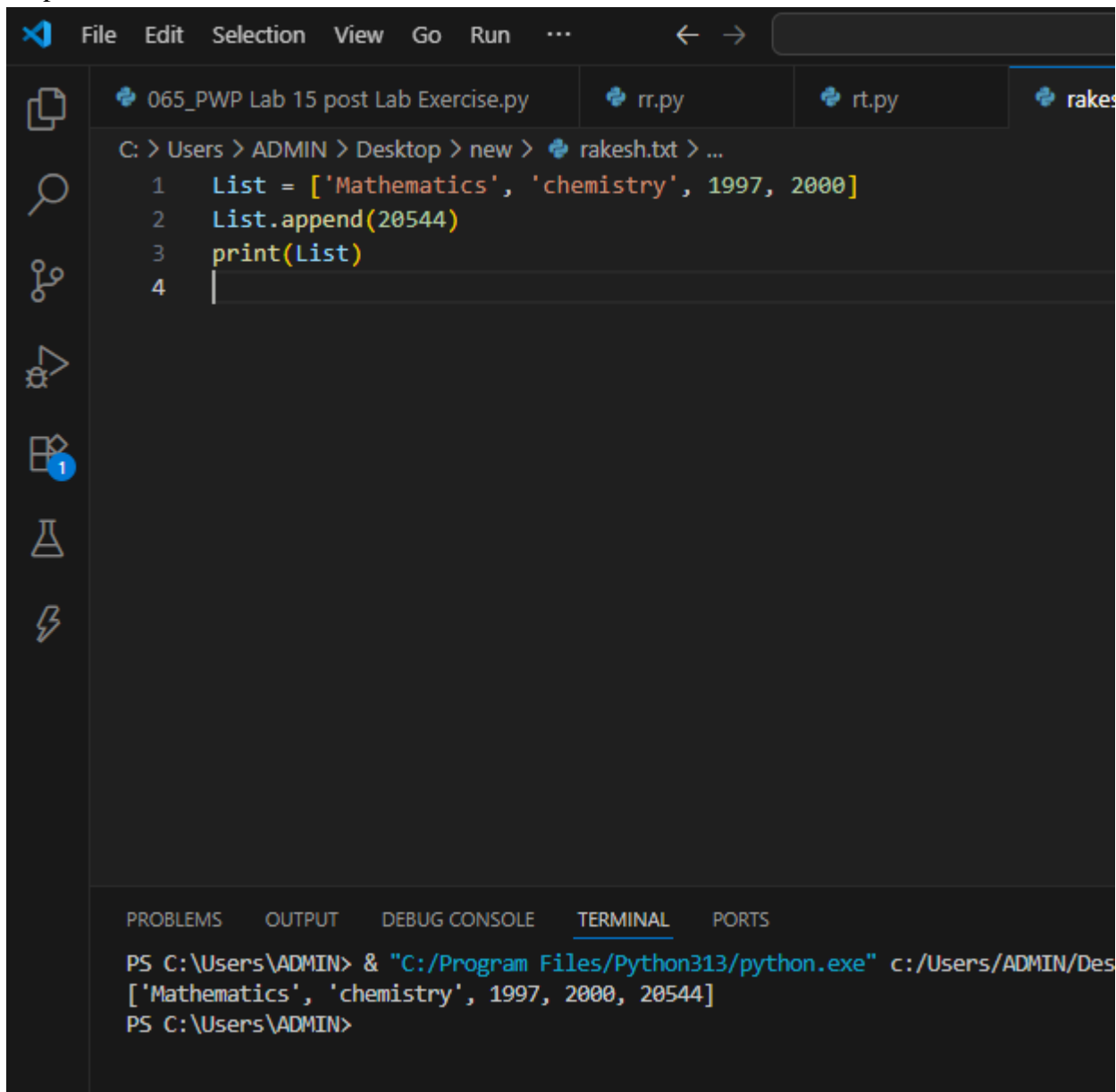
Adds element to the end of a list.

```
List = ['Mathematics', 'chemistry', 1997, 2000]
```

```
List.append(20544)
```

```
print(List)
```

output





The screenshot shows a Python IDE with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search icon. Below the menu bar, there are tabs for '065\_PWP Lab 15 post Lab Exercise.py', 'rr.py', 'rt.py', and 'rakesh.txt'. The main editor area shows the following code:

```
1 List = ['Mathematics', 'chemistry', 1997, 2000]
2 List.append(20544)
3 print(List)
4
```

At the bottom of the IDE, there is a terminal window with the following output:

```
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Des
['Mathematics', 'chemistry', 1997, 2000, 20544]
PS C:\Users\ADMIN>
```

## 2. Python insert() Method

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>

Inserts an element at the specified position.

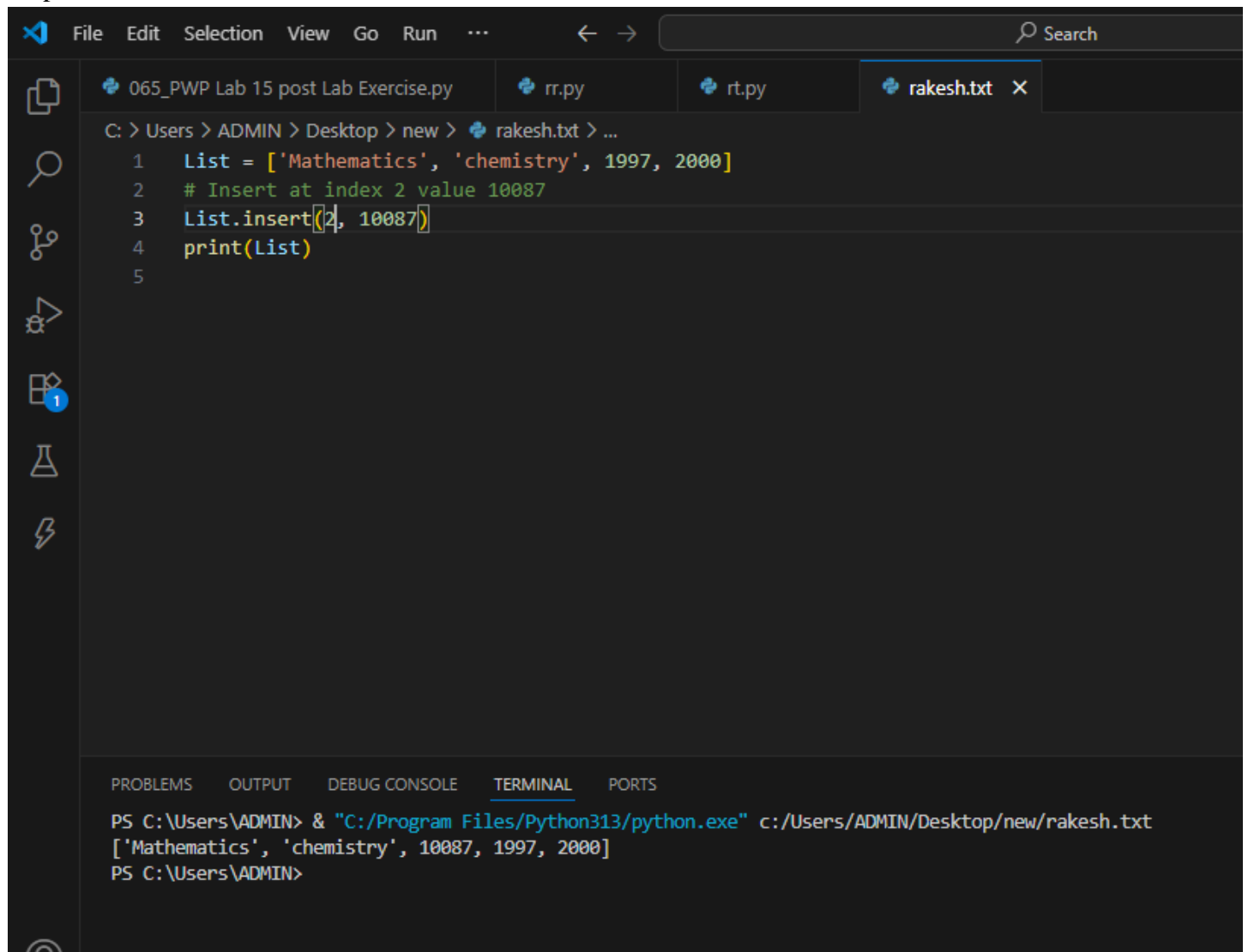
```
List = ['Mathematics', 'chemistry', 1997, 2000]
```

```
# Insert at index 2 value 10087
```

```
List.insert(2, 10087)
```

```
print(List)
```

output



```



File Edit Selection View Go Run ... Search
065_PWP Lab 15 post Lab Exercise.py rr.py rt.py rakesh.txt X
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 List = ['Mathematics', 'chemistry', 1997, 2000]
2 # Insert at index 2 value 10087
3 List.insert(2, 10087)
4 print(List)
5

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
['Mathematics', 'chemistry', 10087, 1997, 2000]
PS C:\Users\ADMIN>

```

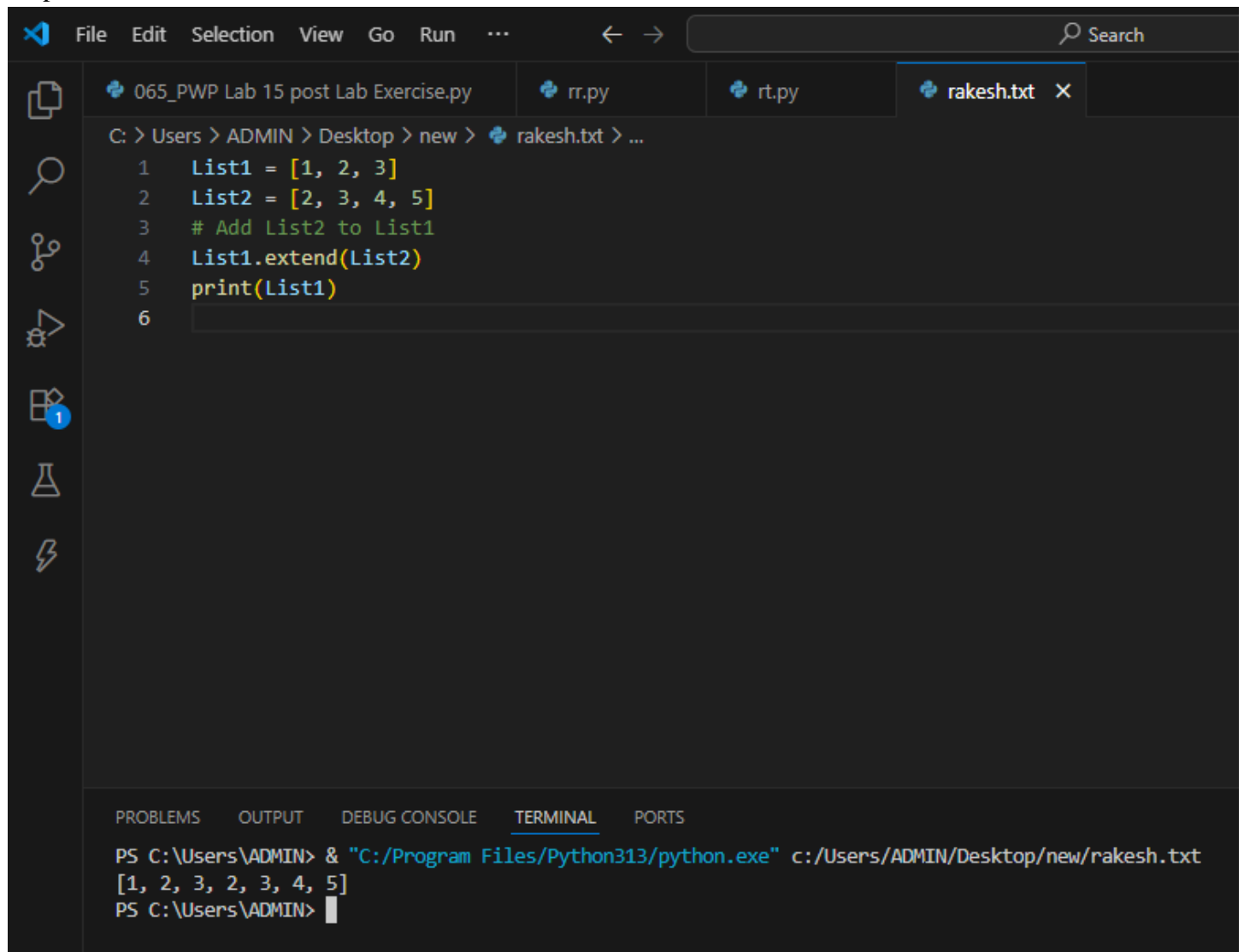
### 3. Python extend() Method



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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>

Adds items of an iterable(list.) to the end of a list.

```
List1 = [1, 2, 3]
List2 = [2, 3, 4, 5]
# Add List2 to List1
List1.extend(List2)
print(List1)
output:
```





The screenshot shows the Visual Studio Code (VS Code) editor interface. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search bar. The Explorer sidebar on the left shows a file named 'rakesh.txt' selected. The main editor area displays the following Python code:

```
1 List1 = [1, 2, 3]
2 List2 = [2, 3, 4, 5]
3 # Add List2 to List1
4 List1.extend(List2)
5 print(List1)
6
```

Below the editor, the TERMINAL panel is active, showing the command prompt output:

```
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
[1, 2, 3, 2, 3, 4, 5]
PS C:\Users\ADMIN>
```

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### Important Functions of the Python List



#### 1. Python sum() Method

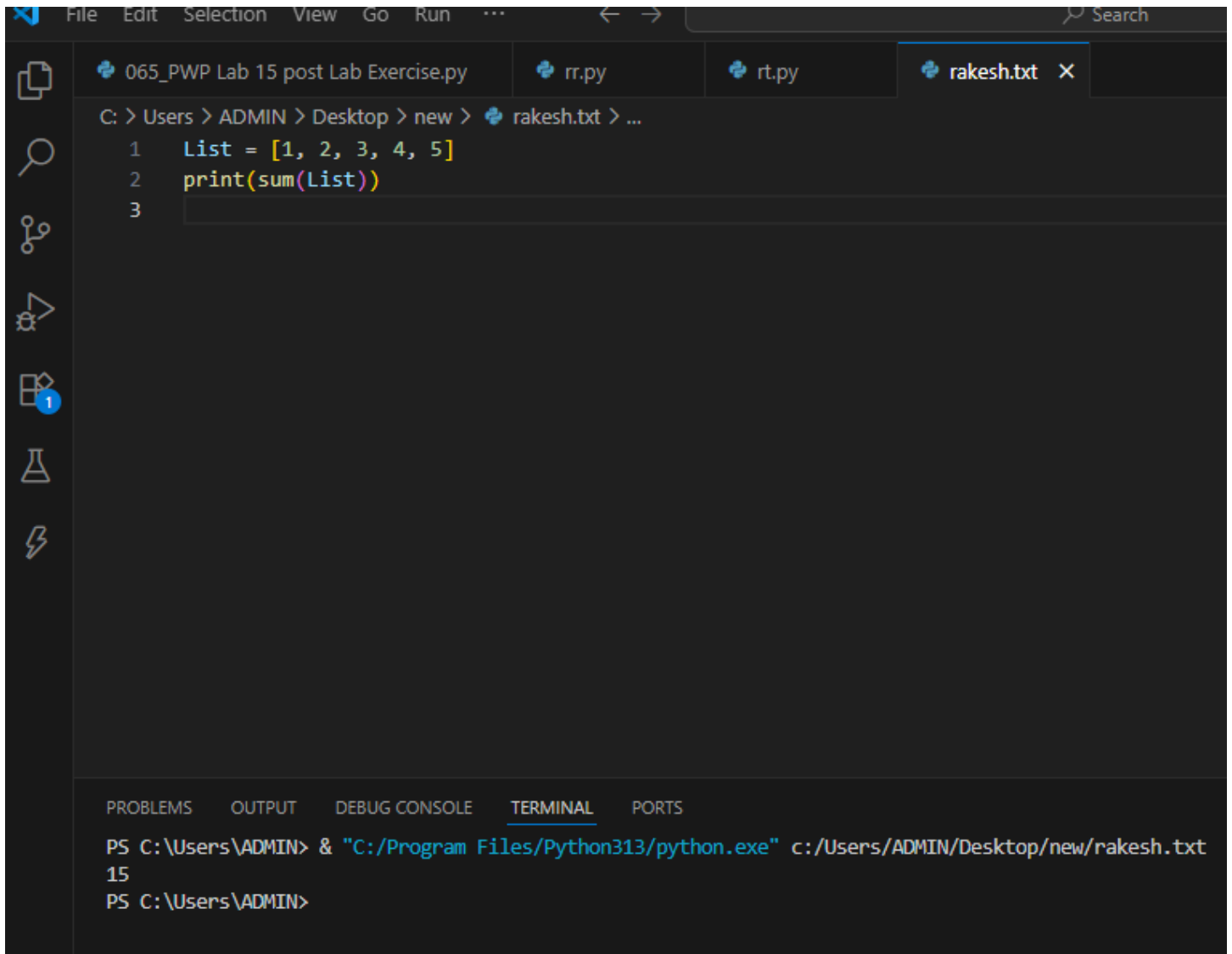
Calculates the sum of all the elements of the List.

```
List = [1, 2, 3, 4, 5]
```

```
print(sum(List))
```

output

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a Python IDE with a file named 'rakesh.txt' open. The code in the file is as follows:

```

1 List = [1, 2, 3, 4, 5]
2 print(sum(List))
3

```

The IDE's terminal window at the bottom shows the command to run the program and the output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
15
PS C:\Users\ADMIN>



```

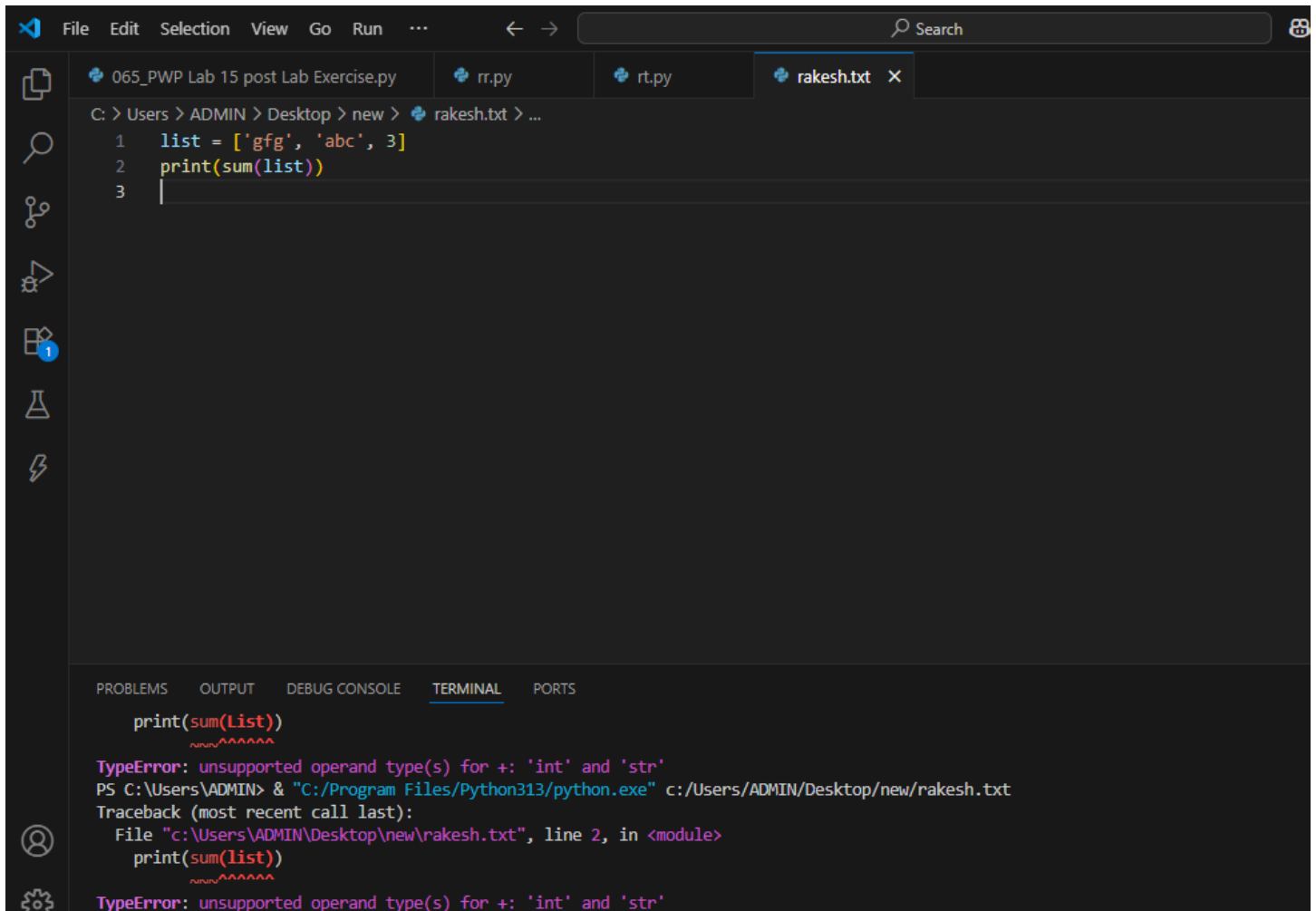
Task:

List = ['gfg', 'abc', 3]

print(sum(List))

output

 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



```

File Edit Selection View Go Run ... Search
065_PWP Lab 15 post Lab Exercise.py rr.py rt.py rakesh.txt X
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 list = ['gfg', 'abc', 3]
2 print(sum(list))
3

```

```



PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
print(sum(List))
TypeError: unsupported operand type(s) for +: 'int' and 'str'
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
Traceback (most recent call last):
  File "c:\Users\ADMIN\Desktop\new\rakesh.txt", line 2, in <module>
    print(sum(list))
TypeError: unsupported operand type(s) for +: 'int' and 'str'

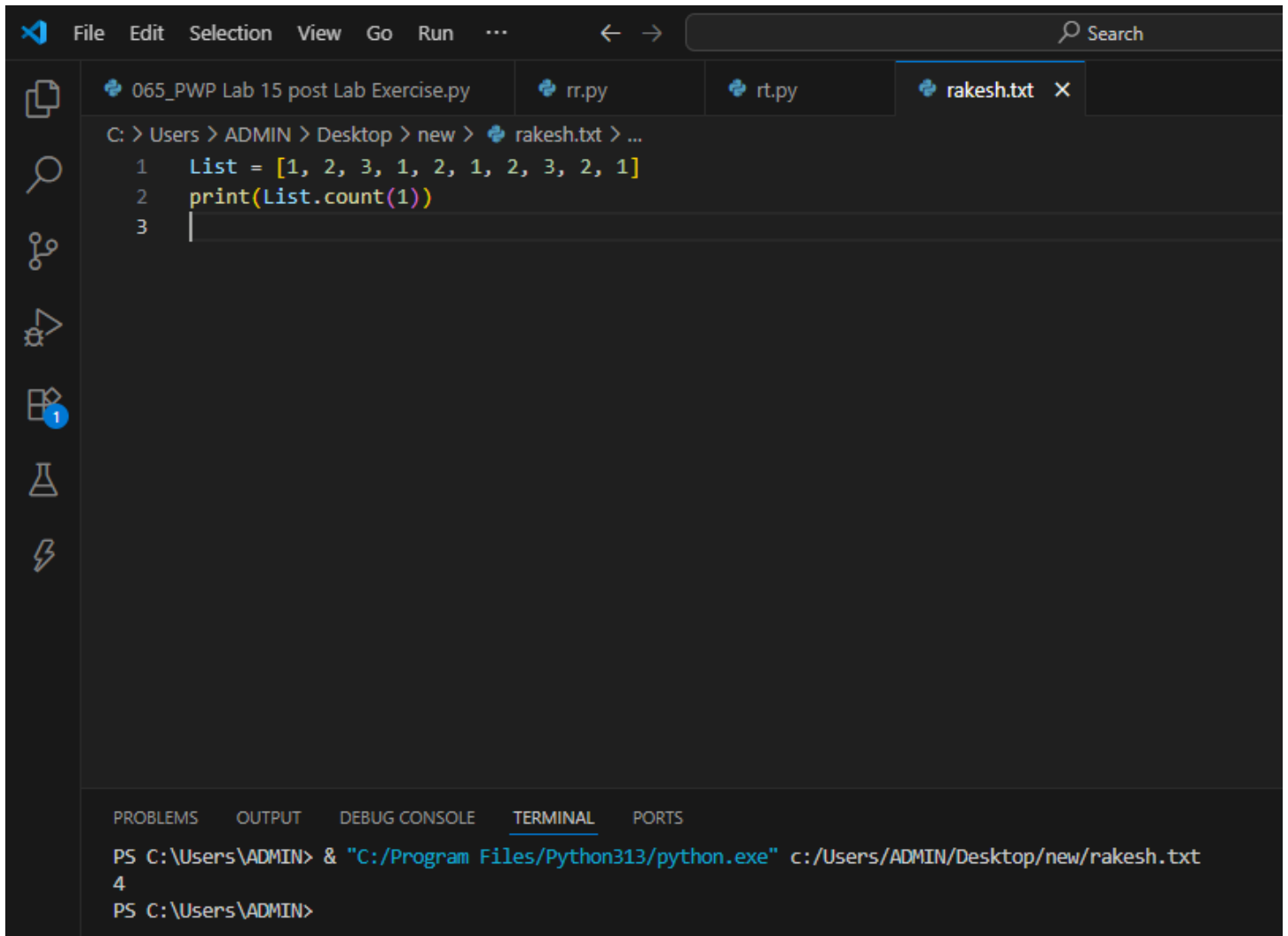
```

## 2. Python count() Method

Calculates the total occurrence of a given element of the List.

```
List = [1, 2, 3, 1, 2, 1, 2, 3, 2, 1]
print(List.count(1))
```

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a Python IDE with a file named 'rakesh.txt' open. The code in the file is as follows:

```

1  List = [1, 2, 3, 1, 2, 1, 2, 3, 2, 1]
2  print(List.count(1))
3

```

The IDE's terminal window at the bottom shows the command to run the script and the output:

```



PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
4
PS C:\Users\ADMIN>

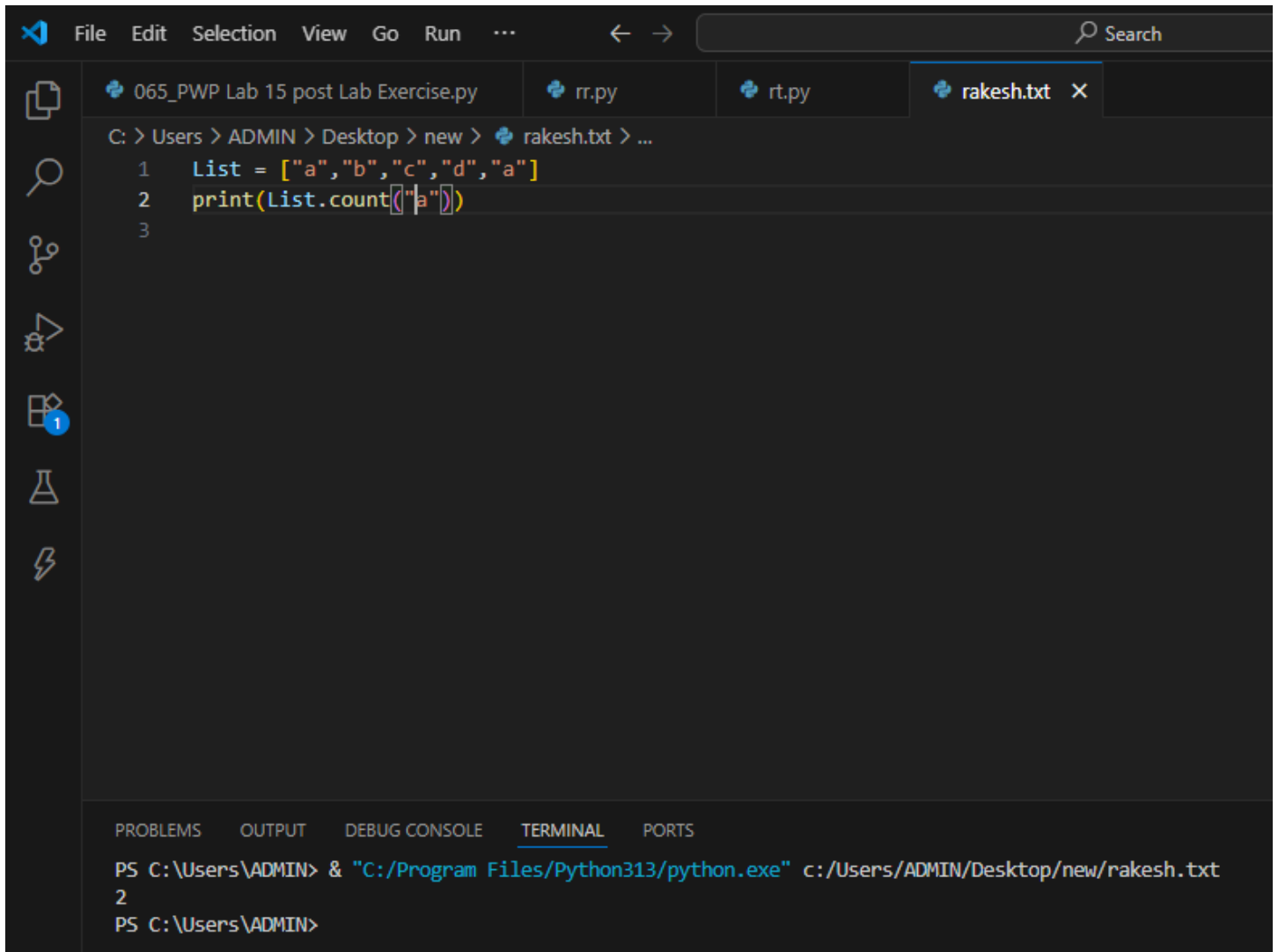
```

```

List = ['a','b','c','d','a']
print(List.count('a'))
output:

```

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a Python IDE with a file named `rakesh.txt` open. The code in the file is as follows:

```

1 List = ["a","b","c","d","a"]
2 print(List.count("a"))
3

```

The IDE's terminal window at the bottom shows the command to run the program:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
2
PS C:\Users\ADMIN>

```



### 3. Python len() Method

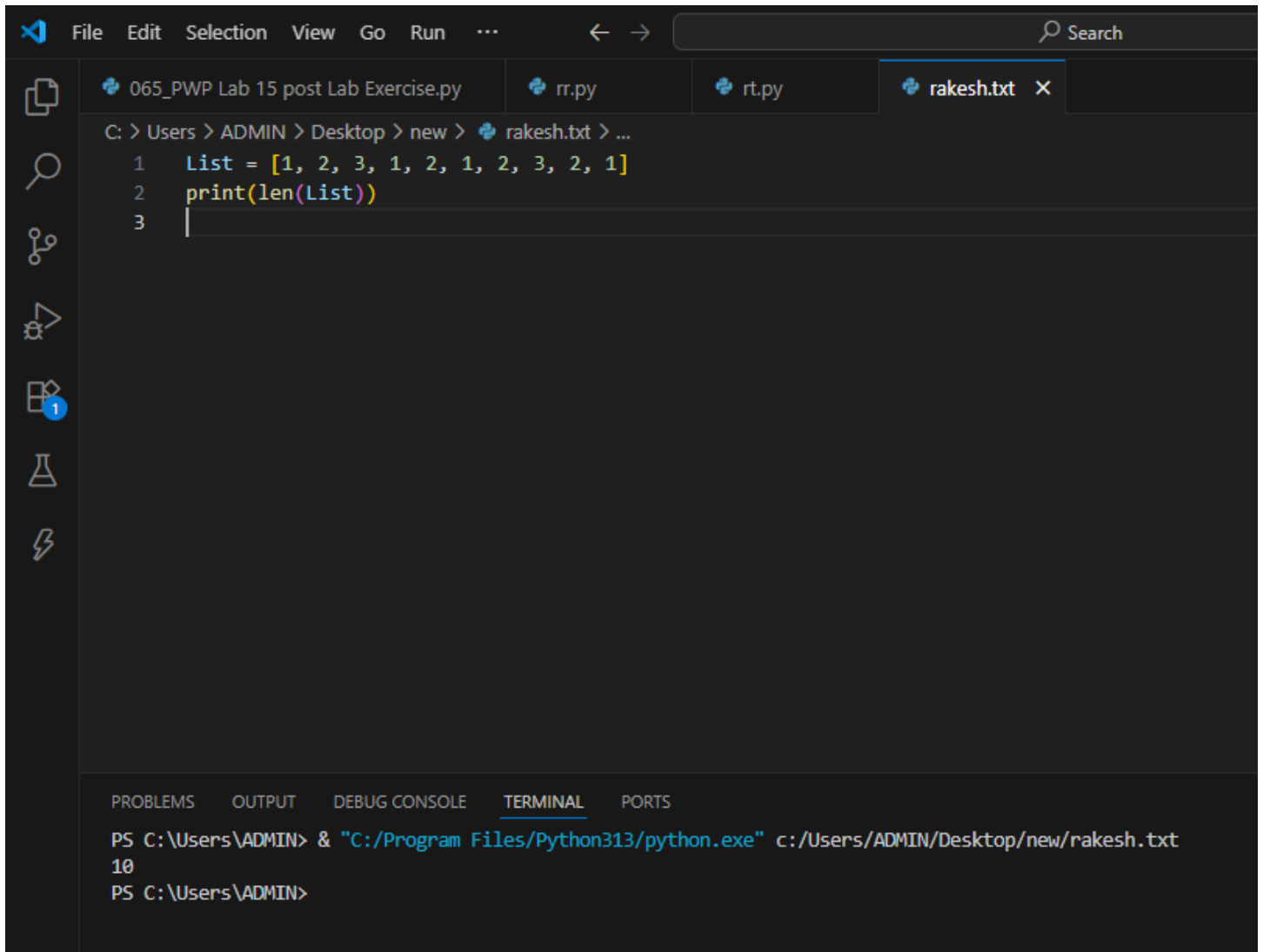
Calculates the total length of the List.

```

List = [1, 2, 3, 1, 2, 1, 2, 3, 2, 1]
print(len(List))
output

```

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a Python IDE with a file named 'rakesh.txt' open. The code in the file is:

```

1 List = [1, 2, 3, 1, 2, 1, 2, 3, 2, 1]
2 print(len(List))
3

```

The terminal output shows the command to run the script and the resulting output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
10
PS C:\Users\ADMIN>

```



#### 4. Python index() Method

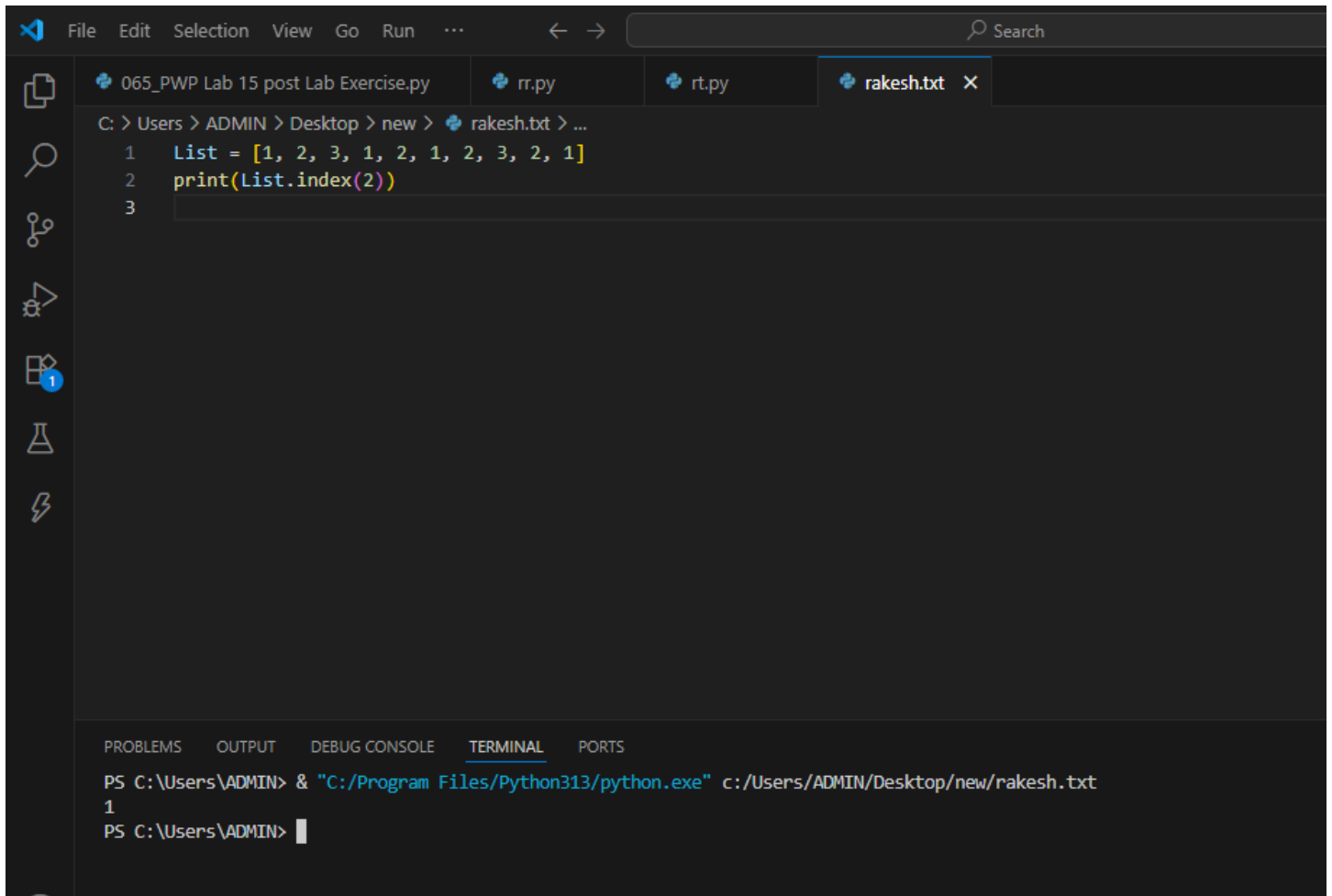
Returns the index of the first occurrence. The start and end indexes are not necessary parameters.

```

List = [1, 2, 3, 1, 2, 1, 2, 3, 2, 1]
print(List.index(2))
output

```

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a code editor with the following content:

```

C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1  List = [1, 2, 3, 1, 2, 1, 2, 3, 2, 1]
2  print(List.index(2))
3

```

The terminal output shows the command being executed and the result:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
1
PS C:\Users\ADMIN>

```



Task:

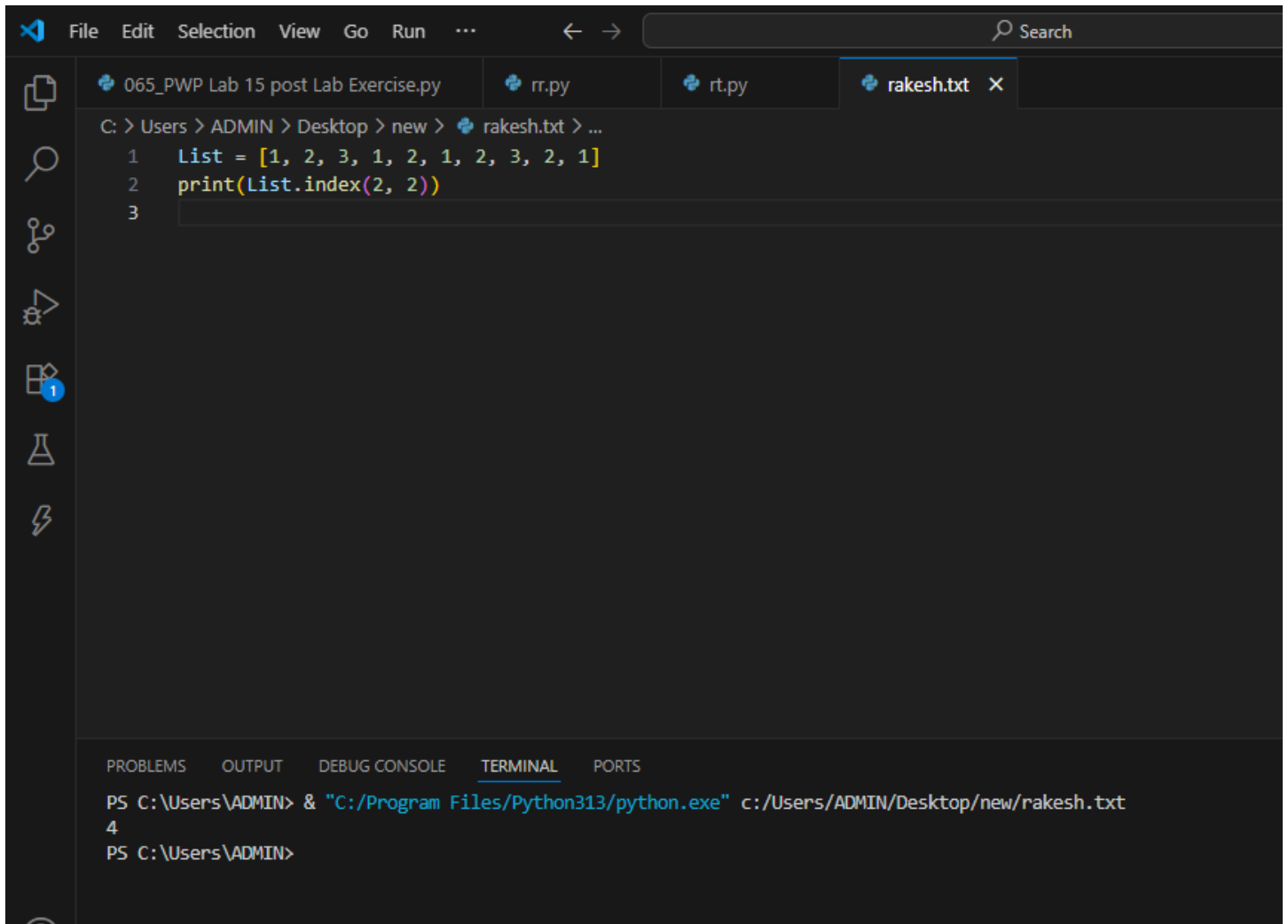
List = [1, 2, 3, 1, 2, 1, 2, 3, 2, 1]

print(List.index(2, 2))

output



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The screenshot shows the Visual Studio Code editor with a file named `rakesh.txt` open. The code in the file is:

```
1 List = [1, 2, 3, 1, 2, 1, 2, 3, 2, 1]
2 print(List.index(2, 2))
3
```

The terminal at the bottom shows the command to run the script:

```
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
4
PS C:\Users\ADMIN>
```



## 5. Python min() Method

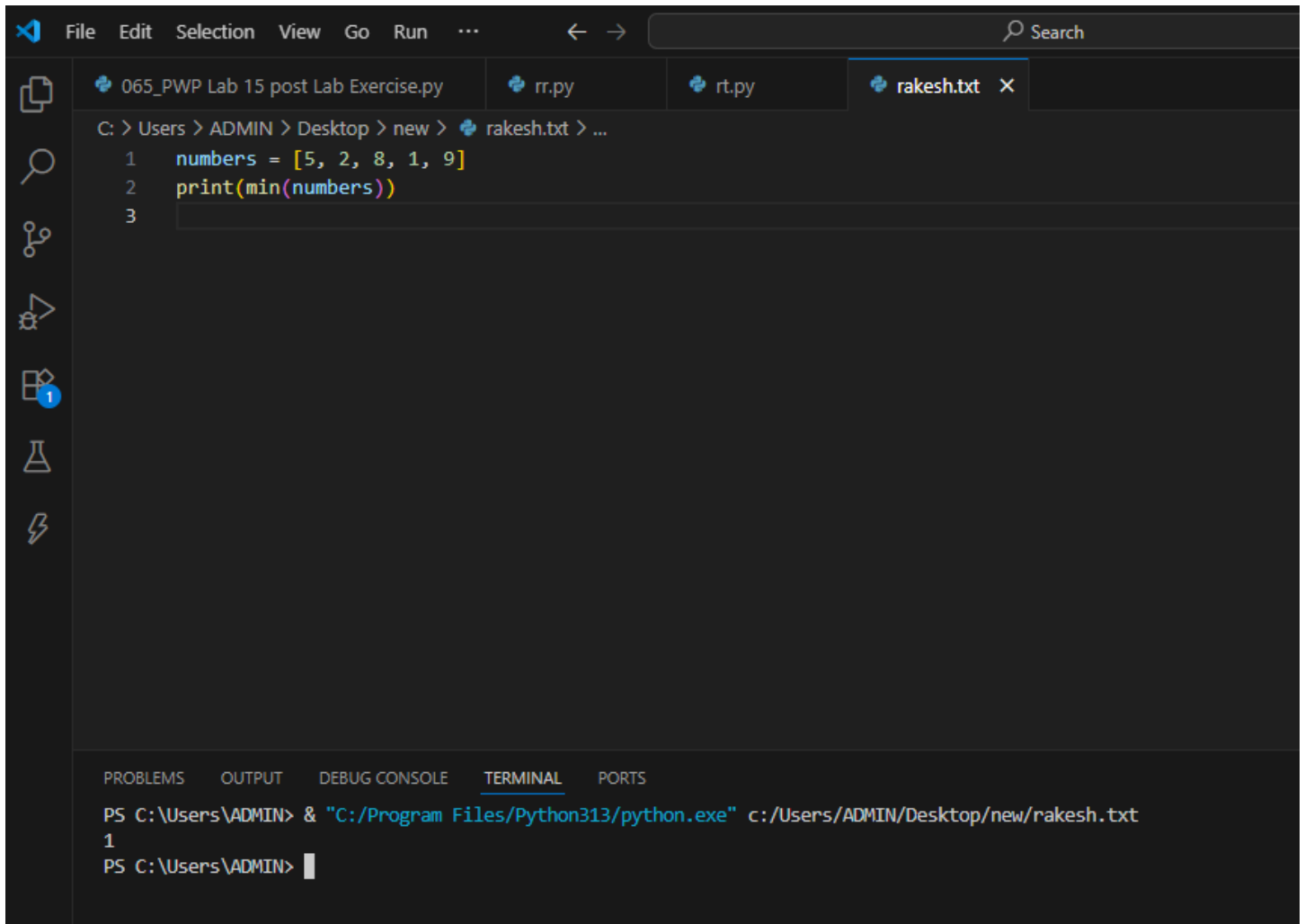
Calculates minimum of all the elements of List.

```
numbers = [5, 2, 8, 1, 9]
```

```
print(min(numbers))
```

output

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The screenshot shows a code editor with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search bar. The file explorer on the left shows a project named '065\_PWP Lab 15 post Lab Exercise.py' with sub-files 'rr.py', 'rt.py', and 'rakesh.txt'. The main editor area shows the following Python code:

```
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 numbers = [5, 2, 8, 1, 9]
2 print(min(numbers))
3
```

At the bottom, there is a terminal window with tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The terminal shows the command to run the script and its output:

```
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
1
PS C:\Users\ADMIN>
```



## 6. Python max() Method

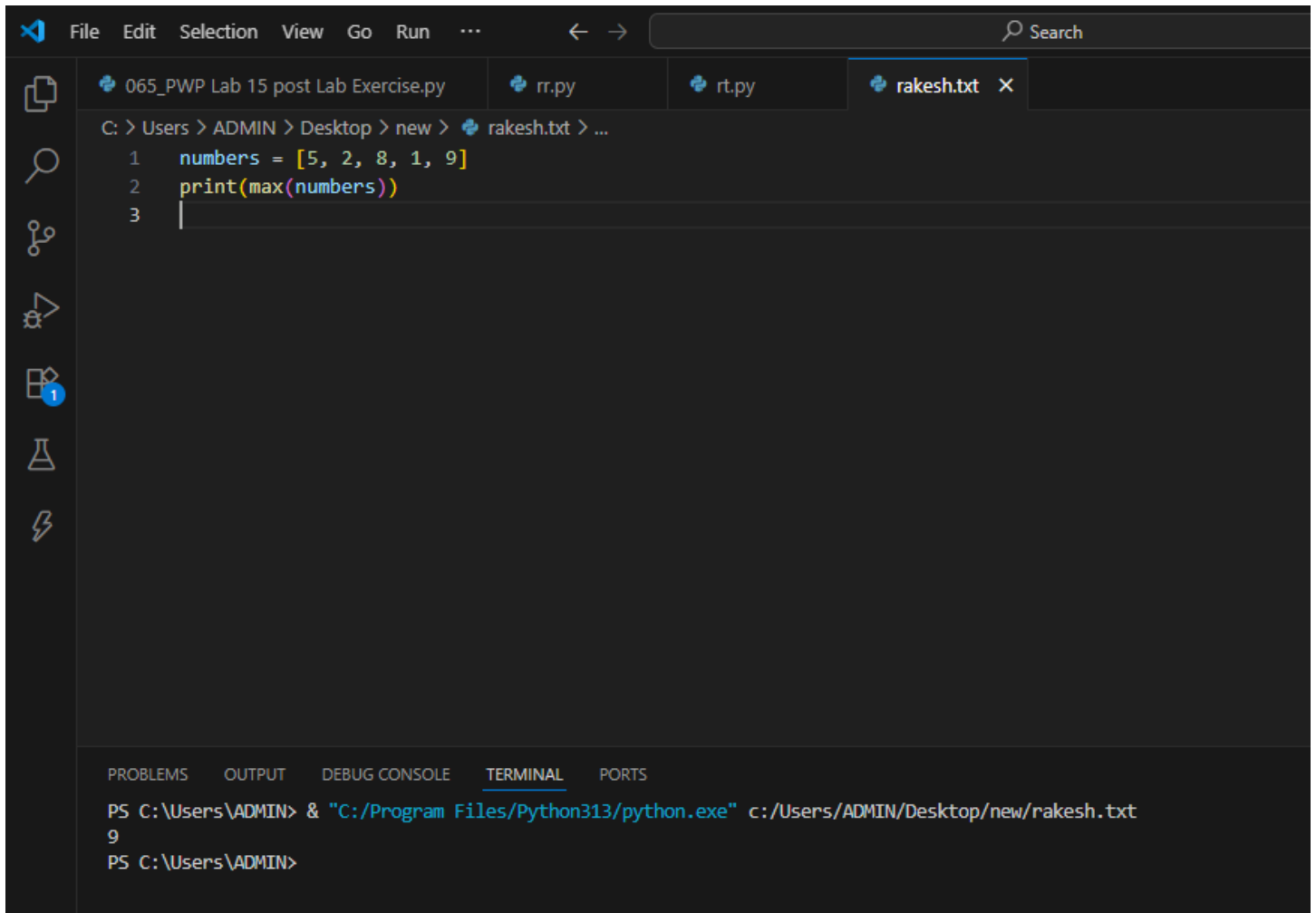
Calculates the maximum of all the elements of the List.

```
numbers = [5, 2, 8, 1, 9]
```

```
print(max(numbers))
```

output

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a code editor with the following Python code in a file named `rakesh.txt`:

```
1 numbers = [5, 2, 8, 1, 9]
2 print(max(numbers))
3
```

The terminal output shows the command to run the program and the resulting output:

```
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
9
PS C:\Users\ADMIN>
```

## 7. Python sort() Method



Sort the given data structure (both tuple and list) in ascending order.

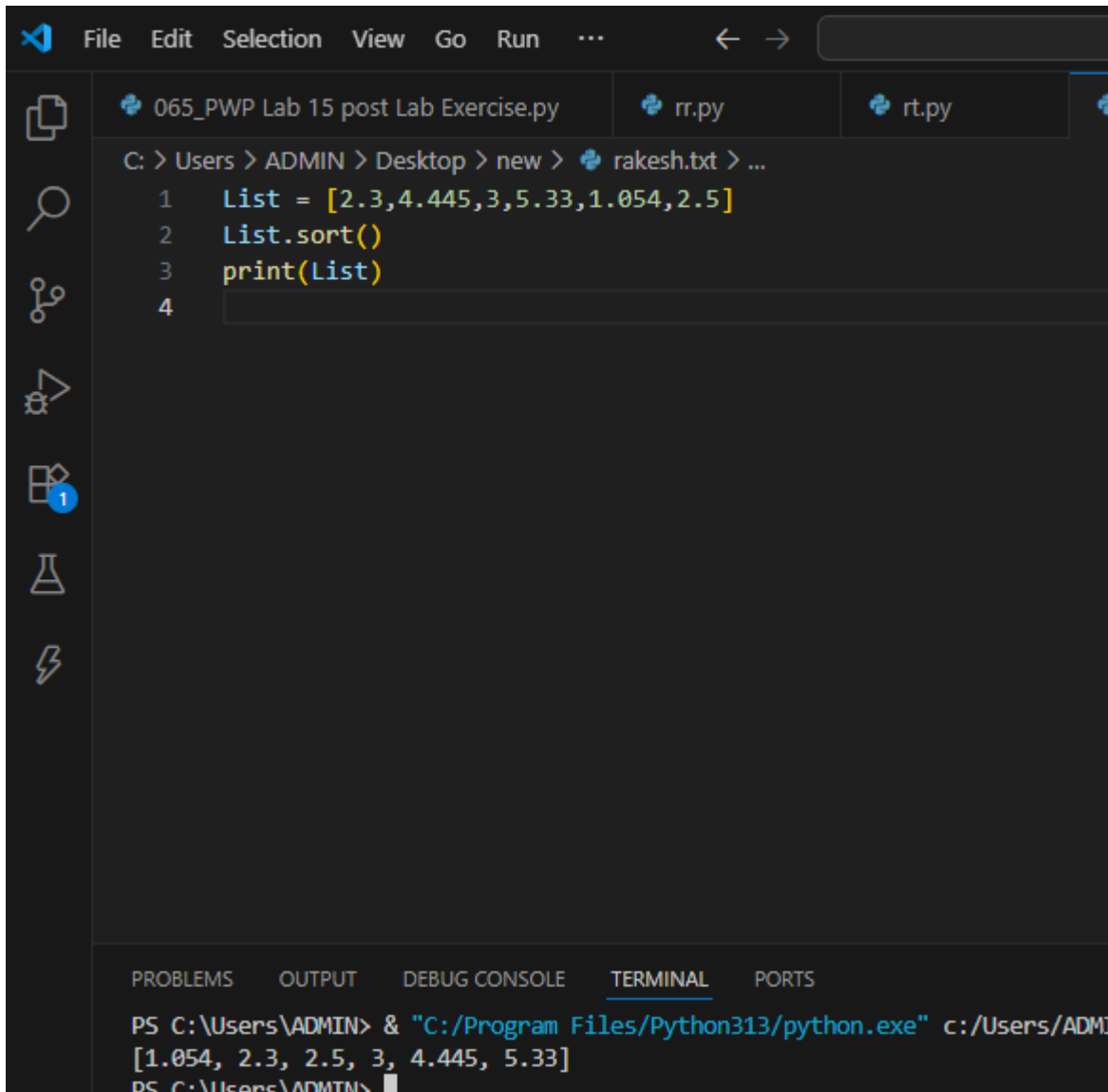
List = [2.3,4.445,3,5.33,1.054,2.5]

List.sort()

print(List)

output

 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



```



File Edit Selection View Go Run ...
065_PWP Lab 15 post Lab Exercise.py rr.py rt.py
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 List = [2.3,4.445,3,5.33,1.054,2.5]
2 List.sort()
3 print(List)
4
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/...
[1.054, 2.3, 2.5, 3, 4.445, 5.33]
PS C:\Users\ADMIN>

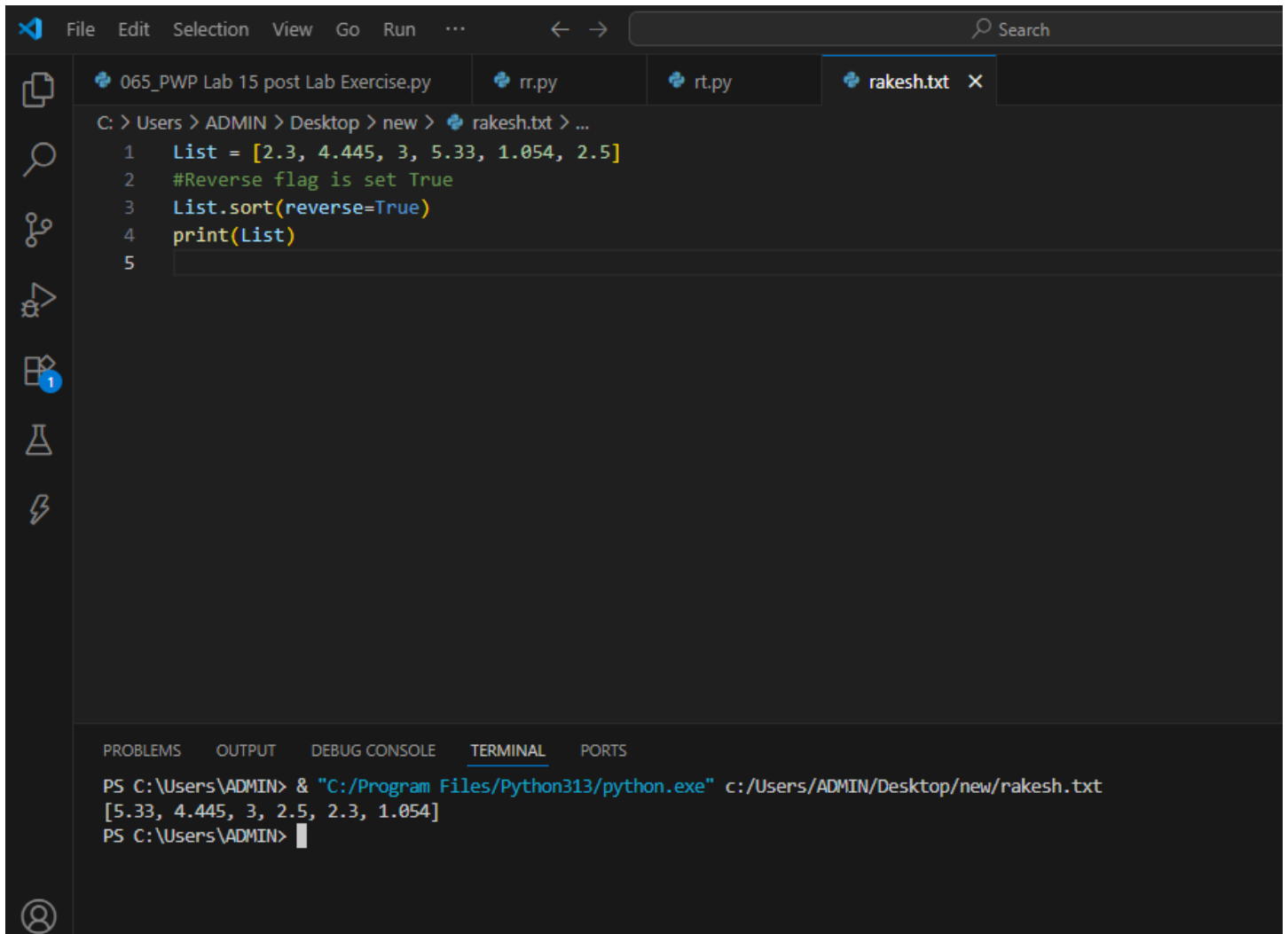
```

```

List = [2.3, 4.445, 3, 5.33, 1.054, 2.5]
#Reverse flag is set True
List.sort(reverse=True)
print(List)
output

```

 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a Python IDE with a file named 'rakesh.txt' open. The code in the file is as follows:

```

1 List = [2.3, 4.445, 3, 5.33, 1.054, 2.5]
2 #Reverse flag is set True
3 List.sort(reverse=True)
4 print(List)
5

```

The terminal output at the bottom shows the command to run the script and the resulting output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
[5.33, 4.445, 3, 2.5, 2.3, 1.054]
PS C:\Users\ADMIN>

```

## 8. Python reverse() Method

reverse() function reverses the order of list.

# creating a list



```
list = [1,2,3,4,5]
```

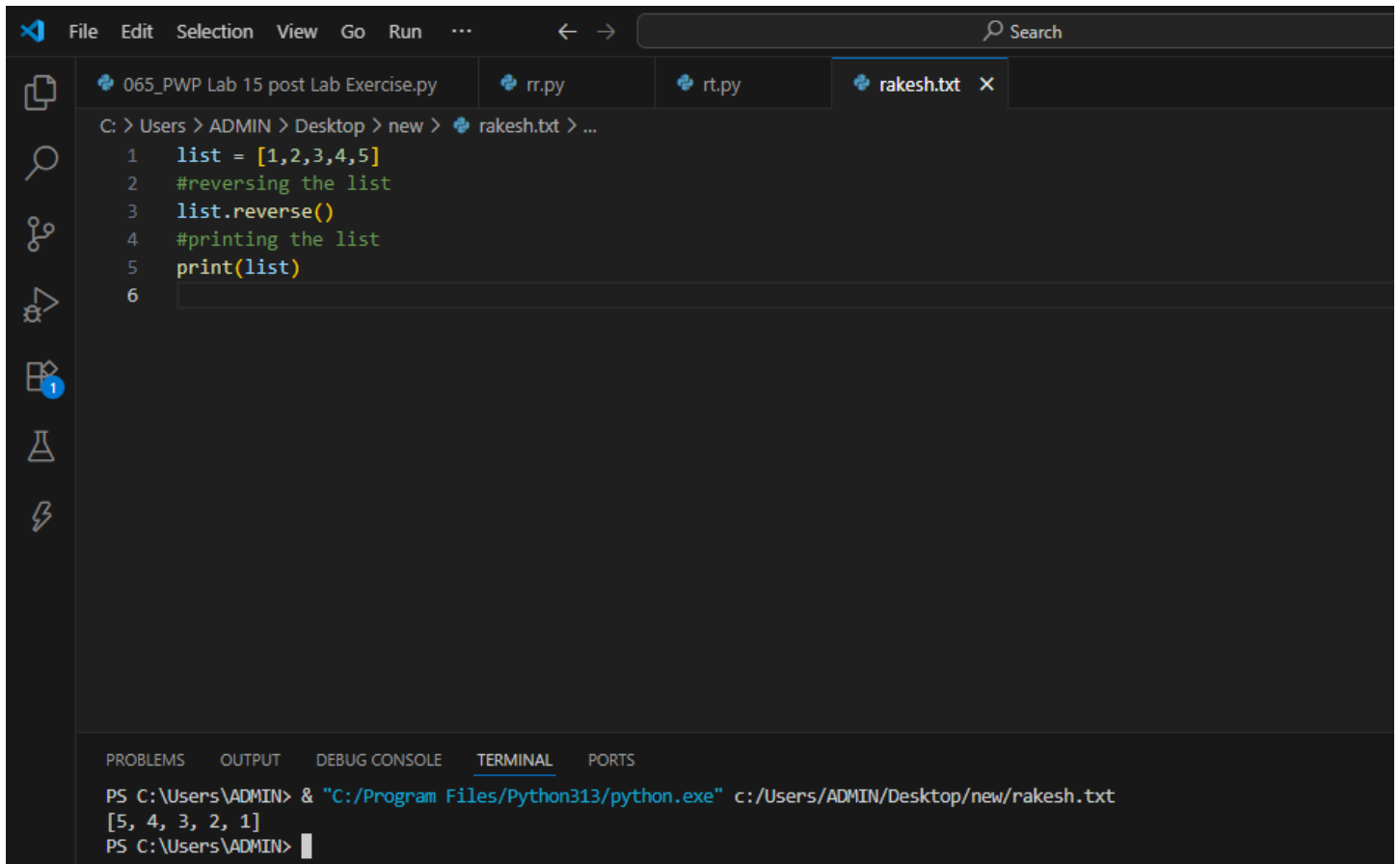
#reversing the list

```
list.reverse()
```

#printing the list

```
print(list)
```

 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a code editor with the following Python code in a file named `rakesh.txt`:

```

1 list = [1,2,3,4,5]
2 #reversing the list
3 list.reverse()
4 #printing the list
5 print(list)
6

```

The terminal output at the bottom shows the command executed and the resulting list:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
[5, 4, 3, 2, 1]
PS C:\Users\ADMIN>

```

## Deletion of List Elements

To Delete one or more elements, i.e. remove an element, many built-in Python list functions can be used, such as `pop()` and `remove()` and keywords such as `del`.



### 1. Python `pop()` Method

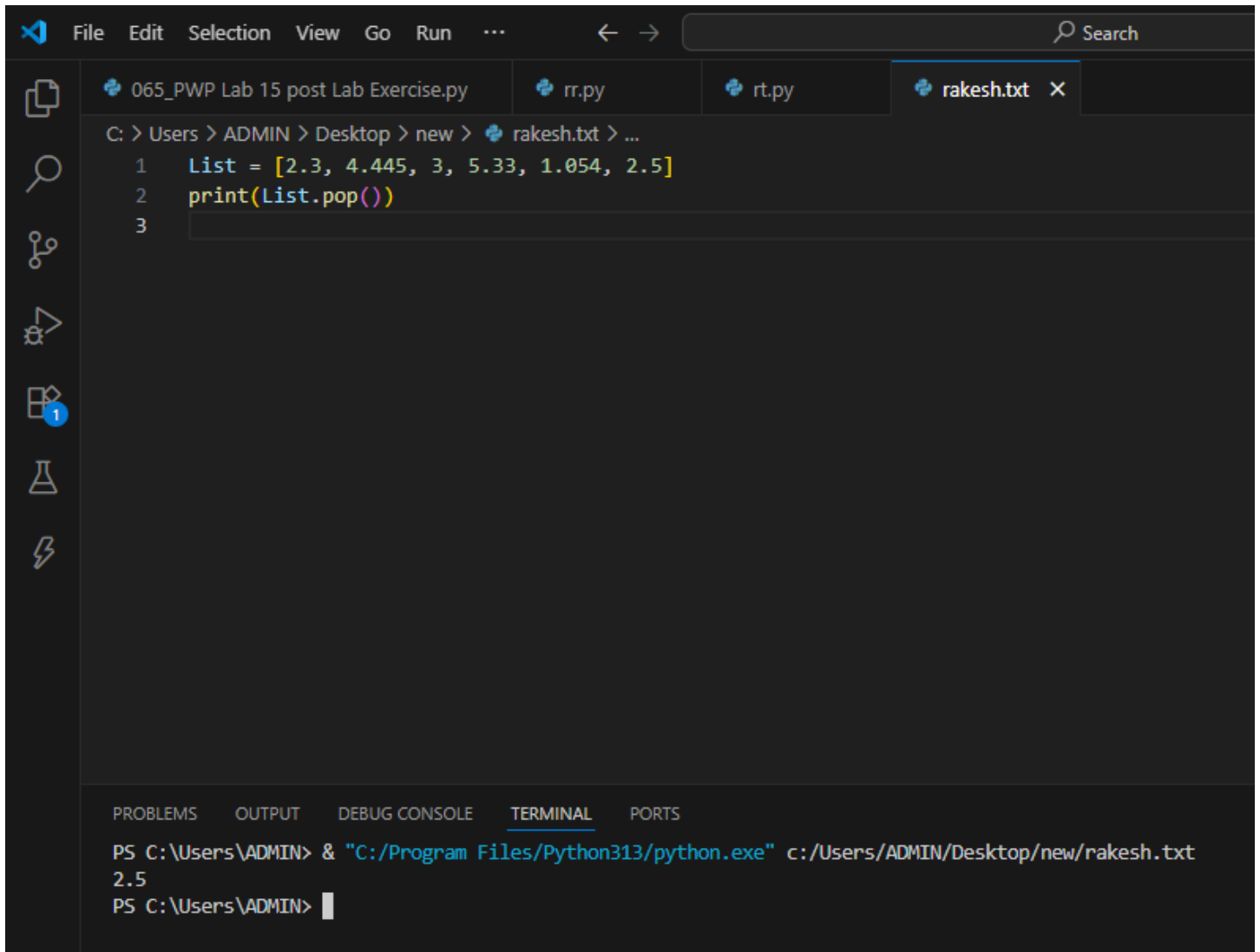
Removes an item from a specific index in a list.

```
List = [2.3, 4.445, 3, 5.33, 1.054, 2.5]
```

```
print(List.pop())
```

output

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a Python IDE with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search bar. The file explorer on the left shows a project named '065\_PWP Lab 15 post Lab Exercise.py' with sub-files 'rr.py', 'rt.py', and 'rakesh.txt'. The main editor window displays the following code in 'rakesh.txt':

```

1 List = [2.3, 4.445, 3, 5.33, 1.054, 2.5]
2 print(List.pop())
3

```

The bottom panel shows the 'TERMINAL' tab with the following output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
2.5
PS C:\Users\ADMIN>


```

```
List = [2.3, 4.445, 3, 5.33, 1.054, 2.5]
print(List.pop(0))
output
```

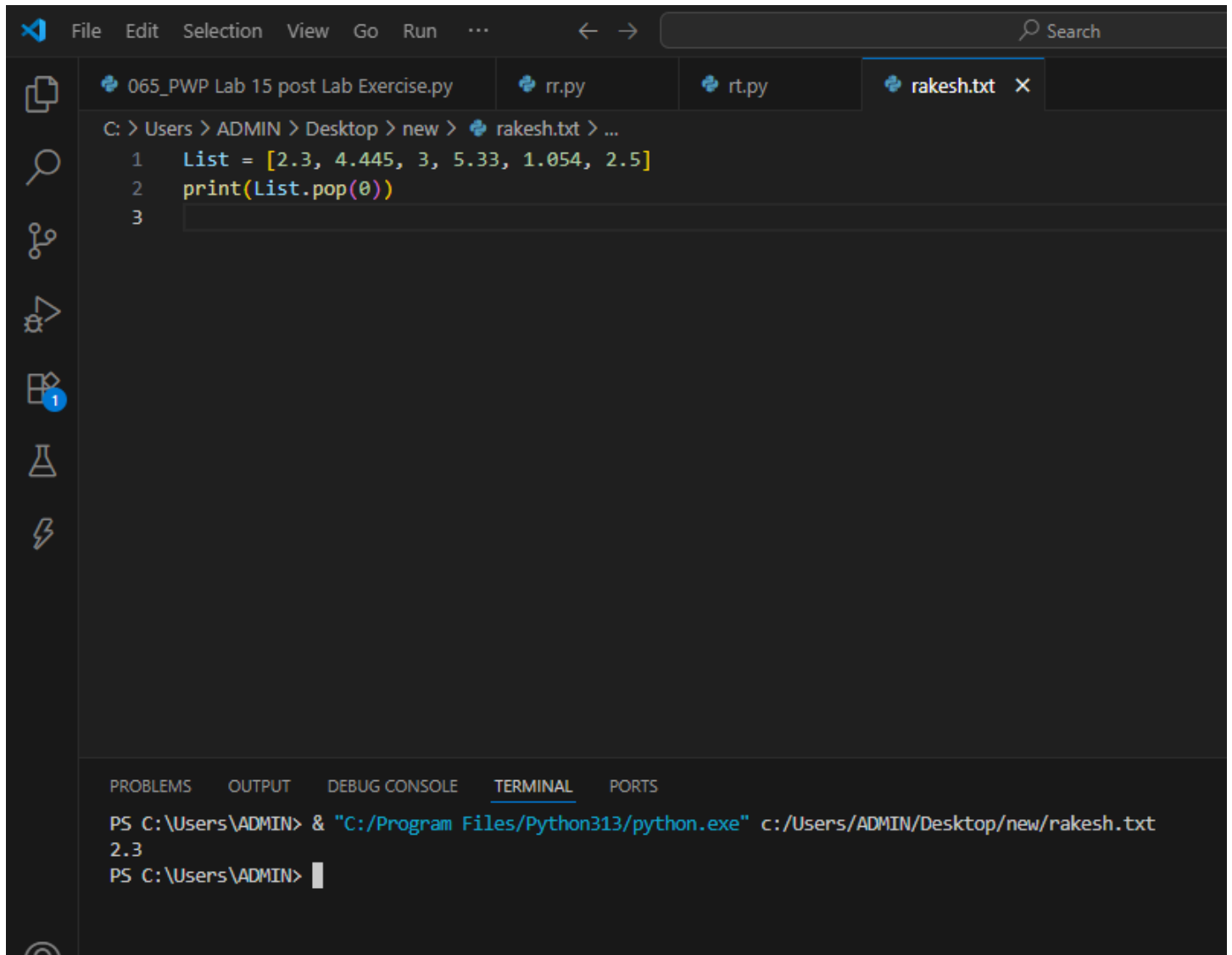
## 2. Python del() Method

Deletes an element from the list using it's index.

```
List = [2.3, 4.445, 3, 5.33, 1.054, 2.5]
del List[0]
print(List)
```

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<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>

output



The screenshot shows a code editor with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search bar. The editor has several tabs open: 065\_PWP Lab 15 post Lab Exercise.py, rr.py, rt.py, and rakesh.txt. The active tab is rakesh.txt, which contains the following Python code:



```
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 List = [2.3, 4.445, 3, 5.33, 1.054, 2.5]
2 print(List.pop(0))
3
```

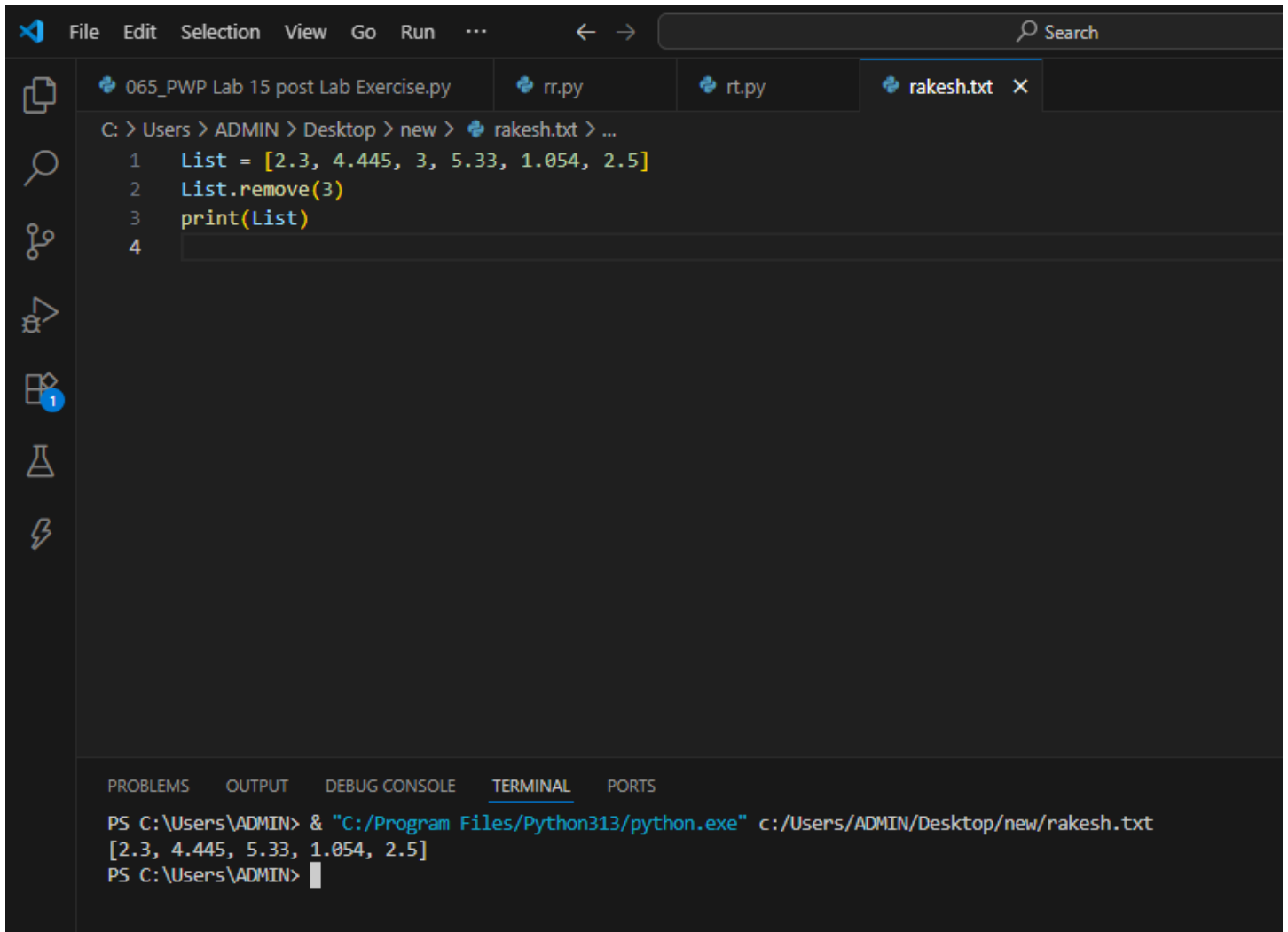
At the bottom of the editor, there is a terminal window with the following output:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
2.3
PS C:\Users\ADMIN>
```

3. Python remove() Method  
Removes a specific element using it's value/name.  
List = [2.3, 4.445, 3, 5.33, 1.054, 2.5]  
List.remove(3)  
print(List)  
output



 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a Python IDE with a file named 'rakesh.txt' open. The code in the file is as follows:

```

1 List = [2.3, 4.445, 3, 5.33, 1.054, 2.5]
2 List.remove(3)
3 print(List)
4

```

The terminal at the bottom shows the command to run the script and its output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
[2.3, 4.445, 5.33, 1.054, 2.5]
PS C:\Users\ADMIN>

```

# removing duplicates from a list using dictionaries

```
my_list_1 = [5, 2, 90, 24, 10, 2, 90, 34]
```

```
my_list_2 = ['a', 'a', 'a', 'b', 'c', 'd', 'd', 'e']
```

# removing duplicates from list 1

```
my_list_1 = list(dict.fromkeys(my_list_1))
```



```
print(my_list_1)
```

output

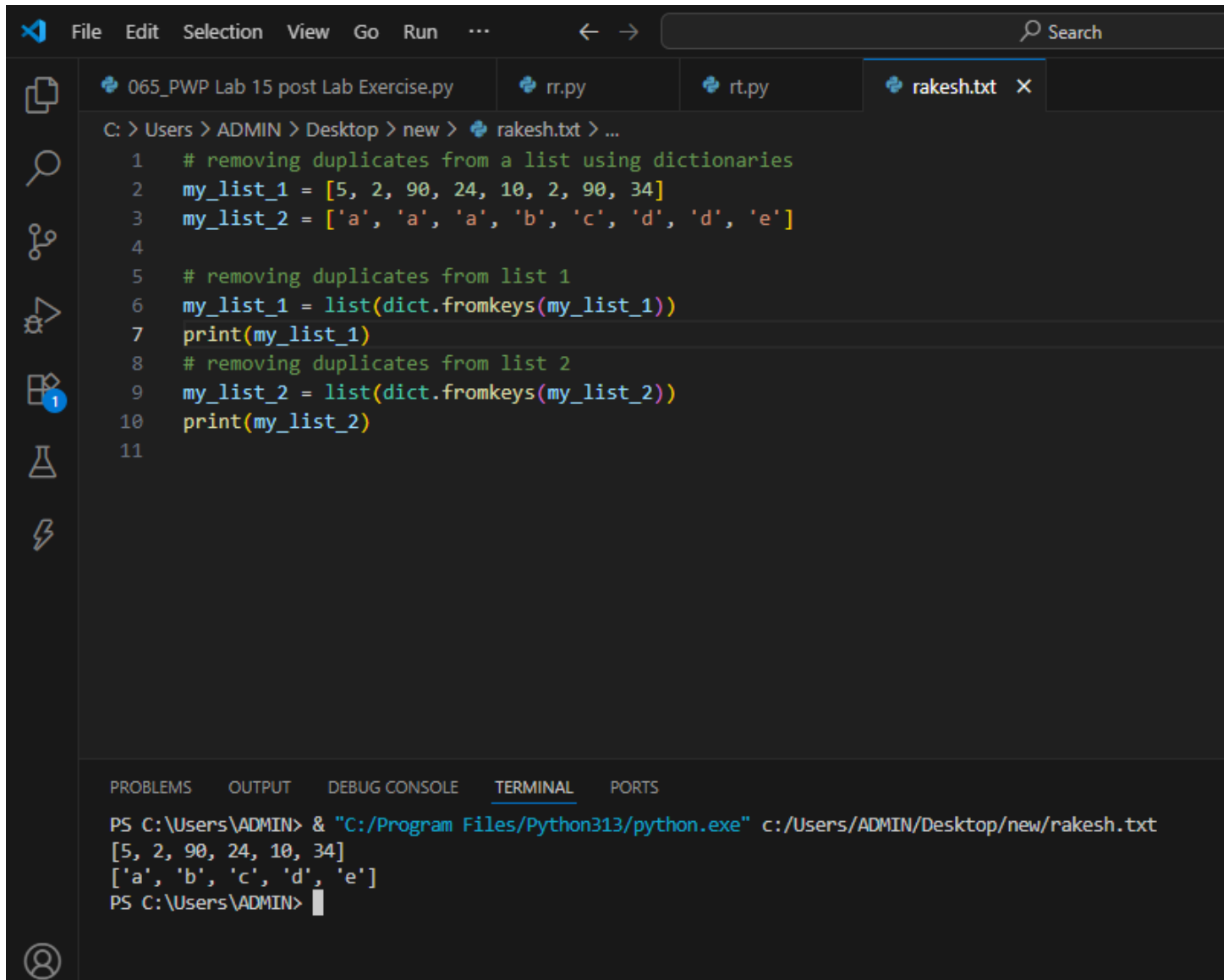
# removing duplicates from list 2

```
my_list_2 = list(dict.fromkeys(my_list_2))
```

```
print(my_list_2)
```

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<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>

output



```

C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1  # removing duplicates from a list using dictionaries
2  my_list_1 = [5, 2, 90, 24, 10, 2, 90, 34]
3  my_list_2 = ['a', 'a', 'a', 'b', 'c', 'd', 'd', 'e']
4
5  # removing duplicates from list 1
6  my_list_1 = list(dict.fromkeys(my_list_1))
7  print(my_list_1)
8  # removing duplicates from list 2
9  my_list_2 = list(dict.fromkeys(my_list_2))
10 print(my_list_2)
11

```

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
[5, 2, 90, 24, 10, 34]
['a', 'b', 'c', 'd', 'e']
PS C:\Users\ADMIN>

```

### Combining lists



We can even combine lists with the help of the zip() function which results in a list of tuples. Here each item from list A is combined with corresponding elements from list B in the form of a tuple.

# combining lists with the help of zip() function

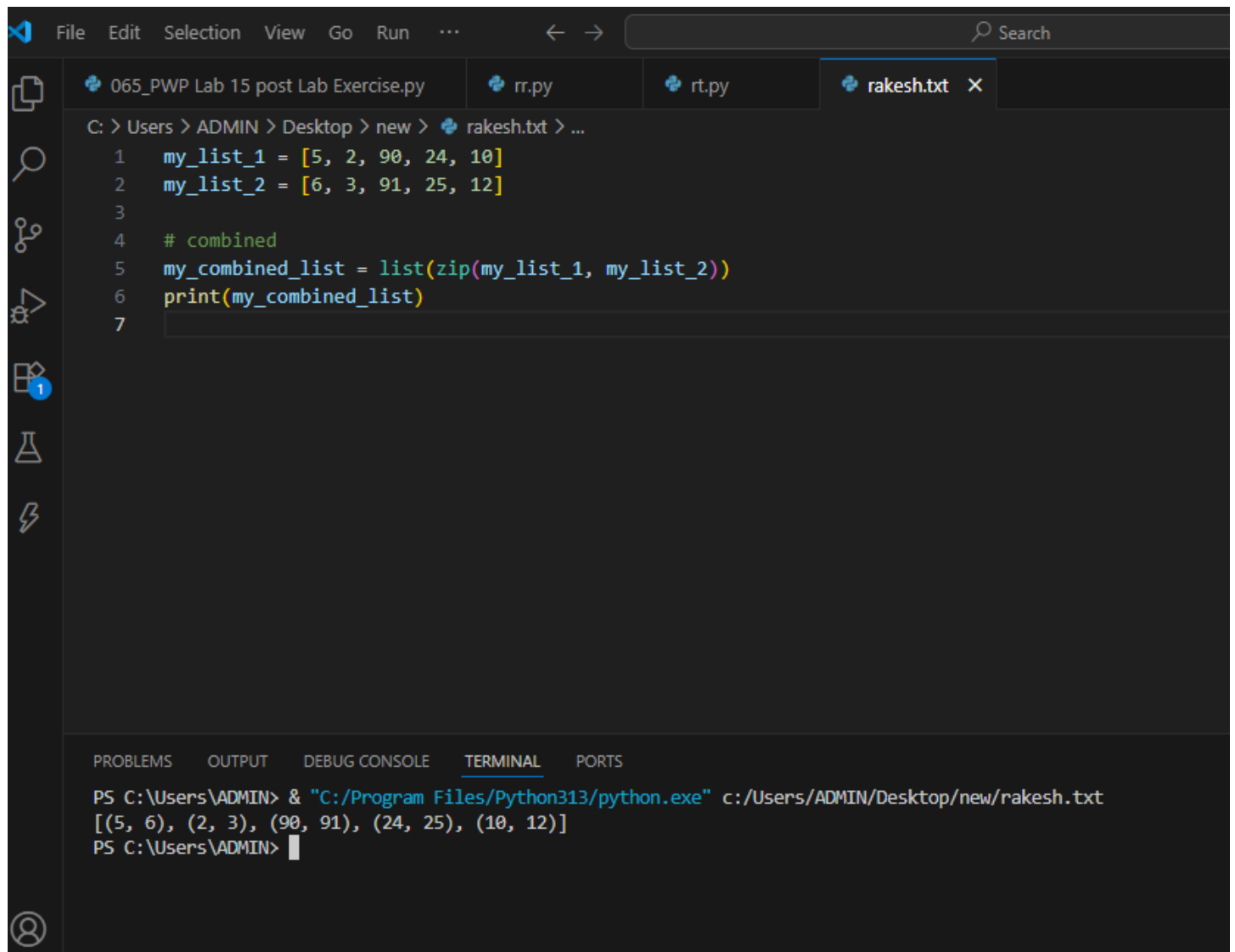
```
my_list_1 = [5, 2, 90, 24, 10]
```

```
my_list_2 = [6, 3, 91, 25, 12]
```

# combined

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>

```
my_combined_list = list(zip(my_list_1, my_list_2))
print(my_combined_list)
output
```



The screenshot shows a code editor with a file named 'rakesh.txt' open. The code defines two lists, 'my\_list\_1' and 'my\_list\_2', and then combines them into 'my\_combined\_list' using the 'zip' function. The output of the program is displayed in the terminal window at the bottom.

```

1 my_list_1 = [5, 2, 90, 24, 10]
2 my_list_2 = [6, 3, 91, 25, 12]
3
4 # combined
5 my_combined_list = list(zip(my_list_1, my_list_2))
6 print(my_combined_list)
7

```

Terminal Output:


```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
[(5, 6), (2, 3), (90, 91), (24, 25), (10, 12)]
PS C:\Users\ADMIN>

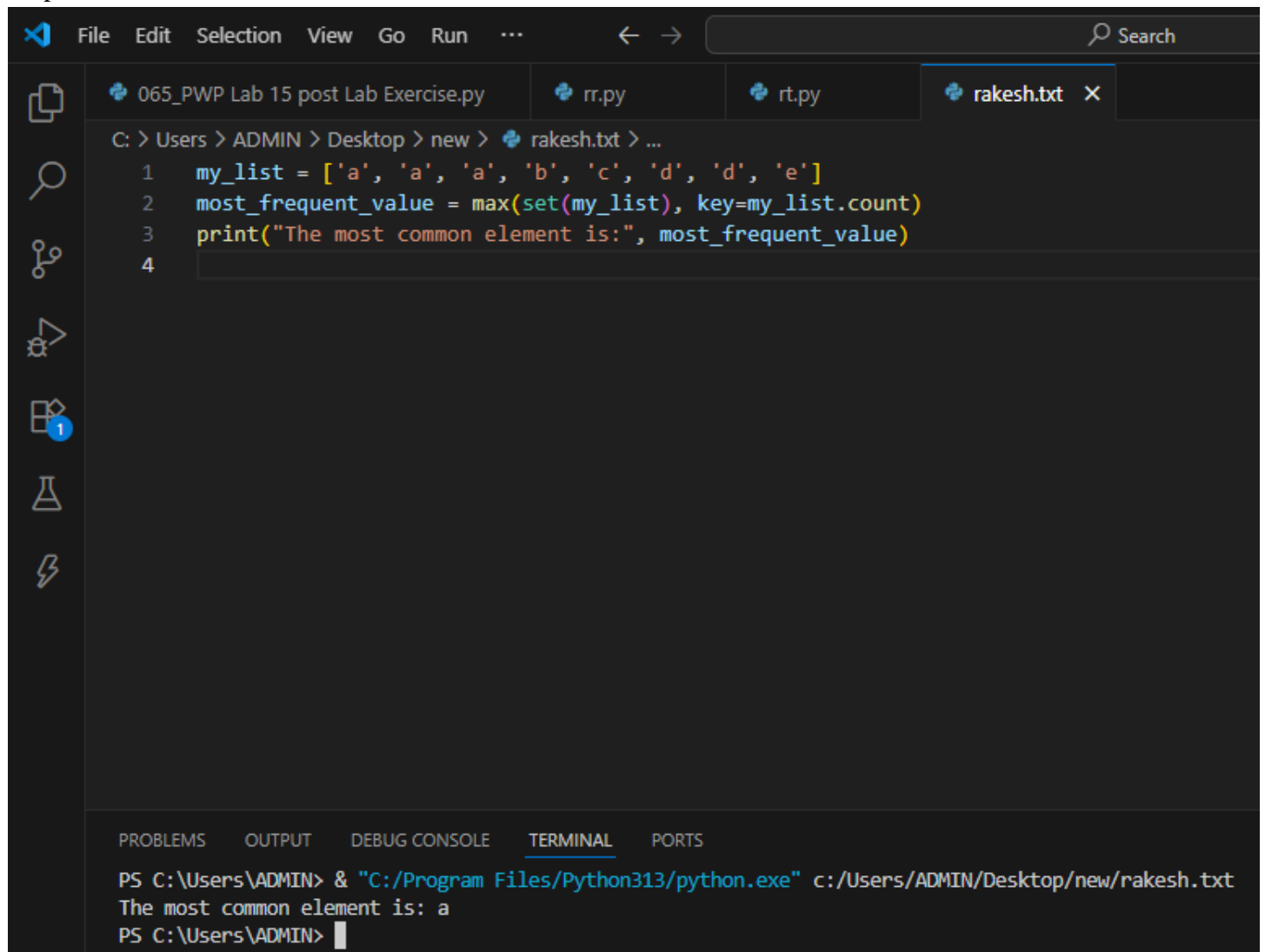
```

Finding the most common item

To find the most frequent element we make use of the set() function. The set() function removes all the duplicates from the list, and the max() function returns the most frequent element (which is found with the help of 'key'). The key is an optional single argument function.

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<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>

```
# to find the most frequent element from the list
my_list = ['a', 'a', 'a', 'b', 'c', 'd', 'd', 'e']
most_frequent_value = max(set(my_list), key=my_list.count)
print("The most common element is:", most_frequent_value)
output
```



The screenshot shows a code editor with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search bar. The file explorer on the left shows several files, with 'rakesh.txt' selected. The main editor area displays the following Python code:


```
1 my_list = ['a', 'a', 'a', 'b', 'c', 'd', 'd', 'e']
2 most_frequent_value = max(set(my_list), key=my_list.count)
3 print("The most common element is:", most_frequent_value)
4
```

Below the code editor is a terminal window. The terminal shows the command to run the program and the resulting output:

```
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
The most common element is: a
PS C:\Users\ADMIN>
```

Flatten a list of lists

Sometimes we encounter a list where each element in itself is a list. To convert a list of lists into a single list, we use list comprehension.

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<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>

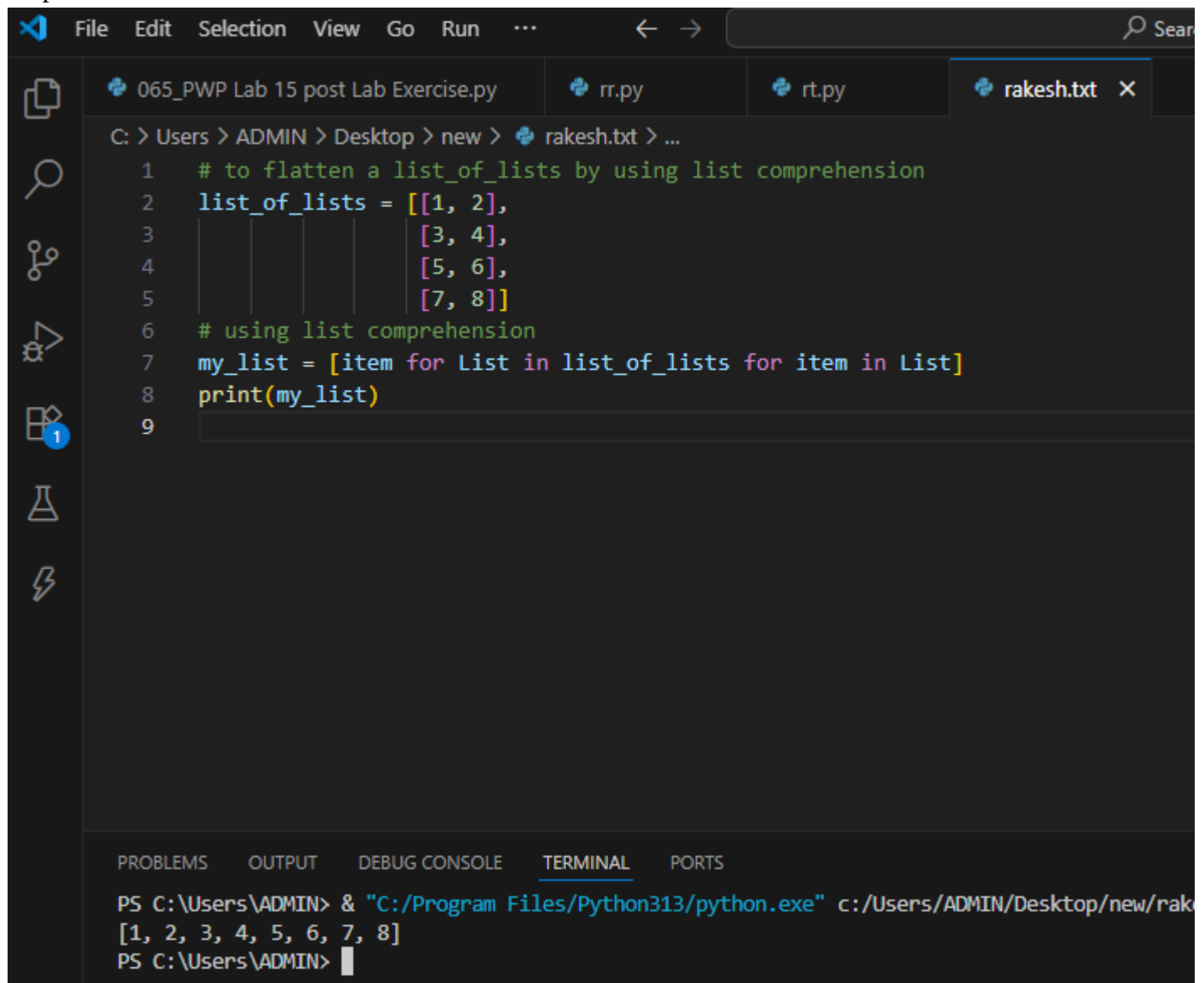
# to flatten a list\_of\_lists by using list comprehension

```
list_of_lists = [[1, 2],
                 [3, 4],
                 [5, 6],
                 [7, 8]]
```

# using list comprehension

```
my_list = [item for List in list_of_lists for item in List]
print(my_list)
```

output




The screenshot shows a Python IDE with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search icon. The file explorer on the left shows a project named '065\_PWP Lab 15 post Lab Exercise.py' with sub-files 'rr.py', 'rt.py', and 'rakesh.txt'. The main editor window displays the following Python code:

```
1 # to flatten a list_of_lists by using list comprehension
2 list_of_lists = [[1, 2],
3                 [3, 4],
4                 [5, 6],
5                 [7, 8]]
6 # using list comprehension
7 my_list = [item for List in list_of_lists for item in List]
8 print(my_list)
9
```

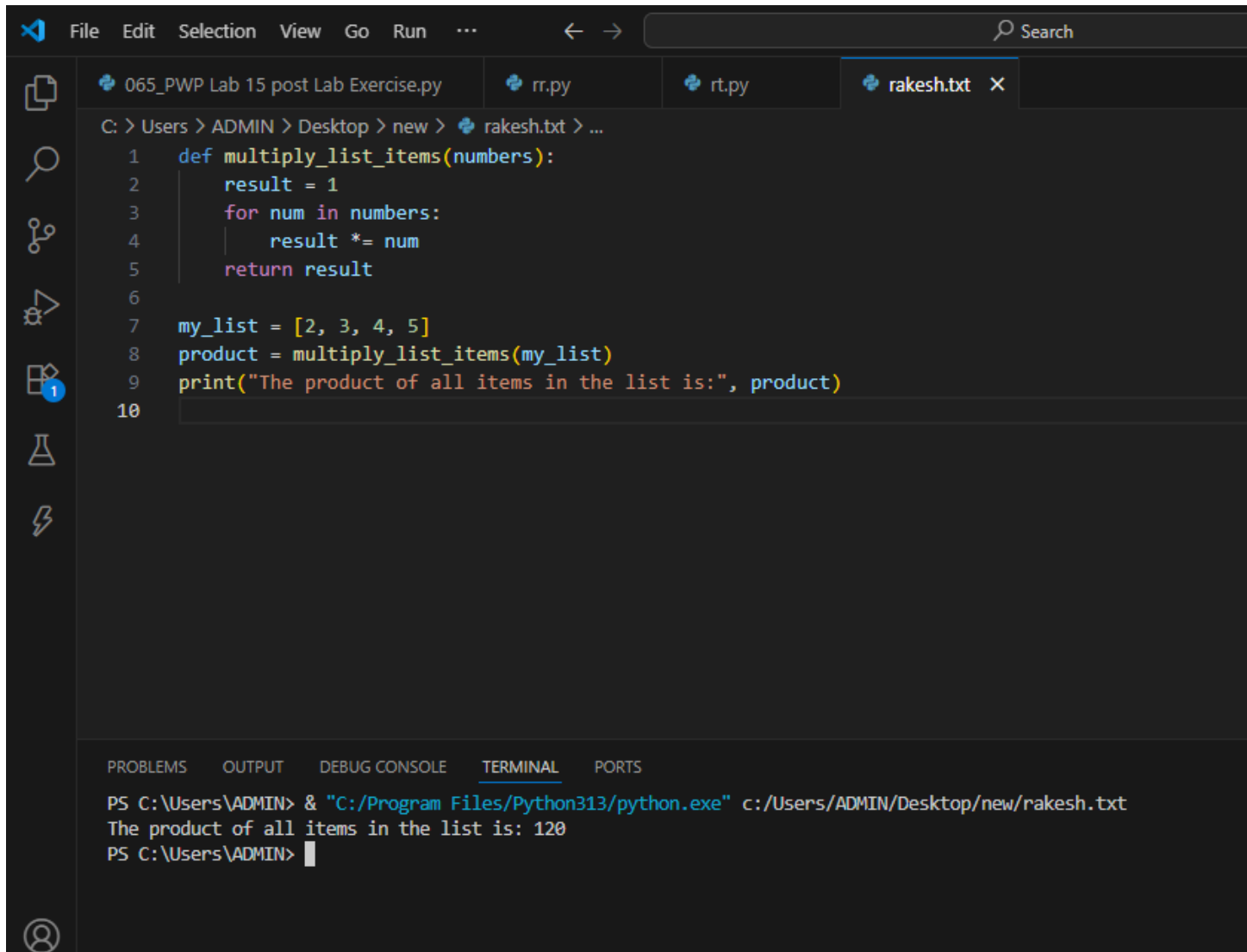
The bottom panel shows the 'TERMINAL' tab with the following output:

```
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rak
[1, 2, 3, 4, 5, 6, 7, 8]
PS C:\Users\ADMIN>
```

 <b>Marwadi University</b> Marwadi Chandarana Group	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>

### Post Lab Exercise:

- a. Write a Python program to multiply all the items in a list.





```

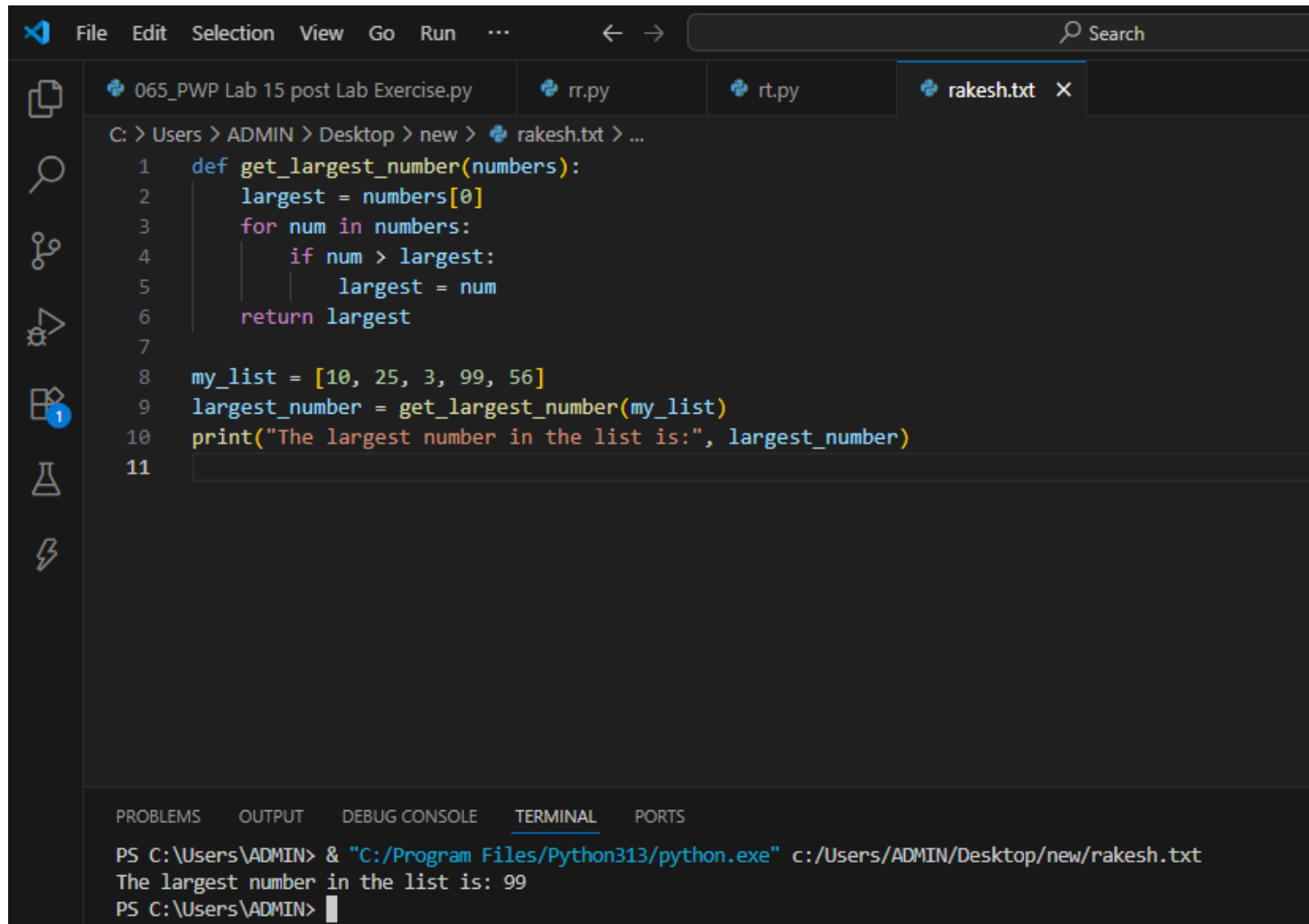
File Edit Selection View Go Run ... Search
065_PWP Lab 15 post Lab Exercise.py rr.py rt.py rakesh.txt X
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 def multiply_list_items(numbers):
2     result = 1
3     for num in numbers:
4         result *= num
5     return result
6
7 my_list = [2, 3, 4, 5]
8 product = multiply_list_items(my_list)
9 print("The product of all items in the list is:", product)
10

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
The product of all items in the list is: 120
PS C:\Users\ADMIN>

```

- b. Write a Python program to get the largest number from a list.

 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>





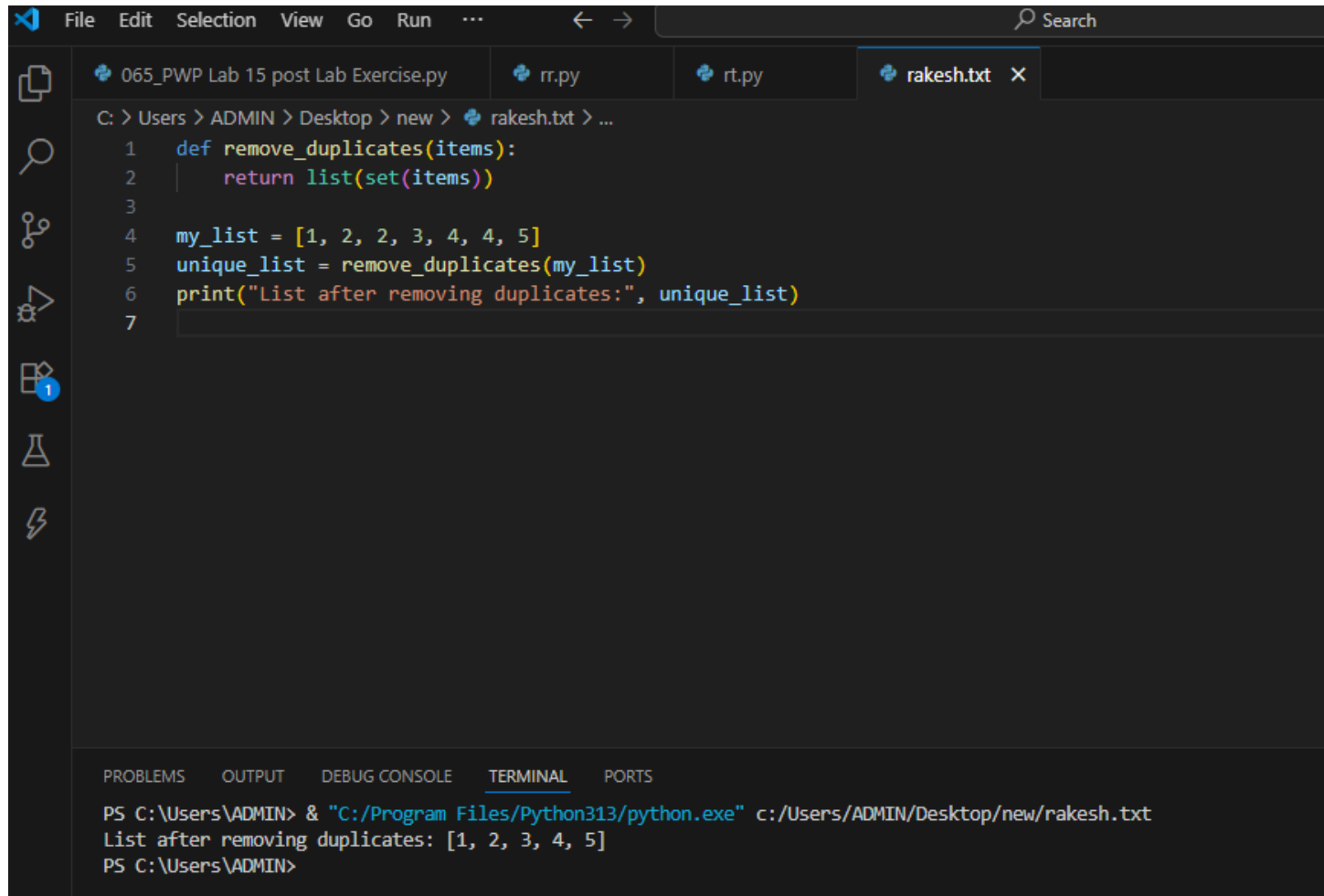
```

File Edit Selection View Go Run ... Search
065_PWP Lab 15 post Lab Exercise.py rr.py rt.py rakesh.txt X
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 def get_largest_number(numbers):
2     largest = numbers[0]
3     for num in numbers:
4         if num > largest:
5             largest = num
6     return largest
7
8 my_list = [10, 25, 3, 99, 56]
9 largest_number = get_largest_number(my_list)
10 print("The largest number in the list is:", largest_number)
11
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
The largest number in the list is: 99
PS C:\Users\ADMIN>

```

c. Write a Python program to remove duplicates from a list.

 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>





```

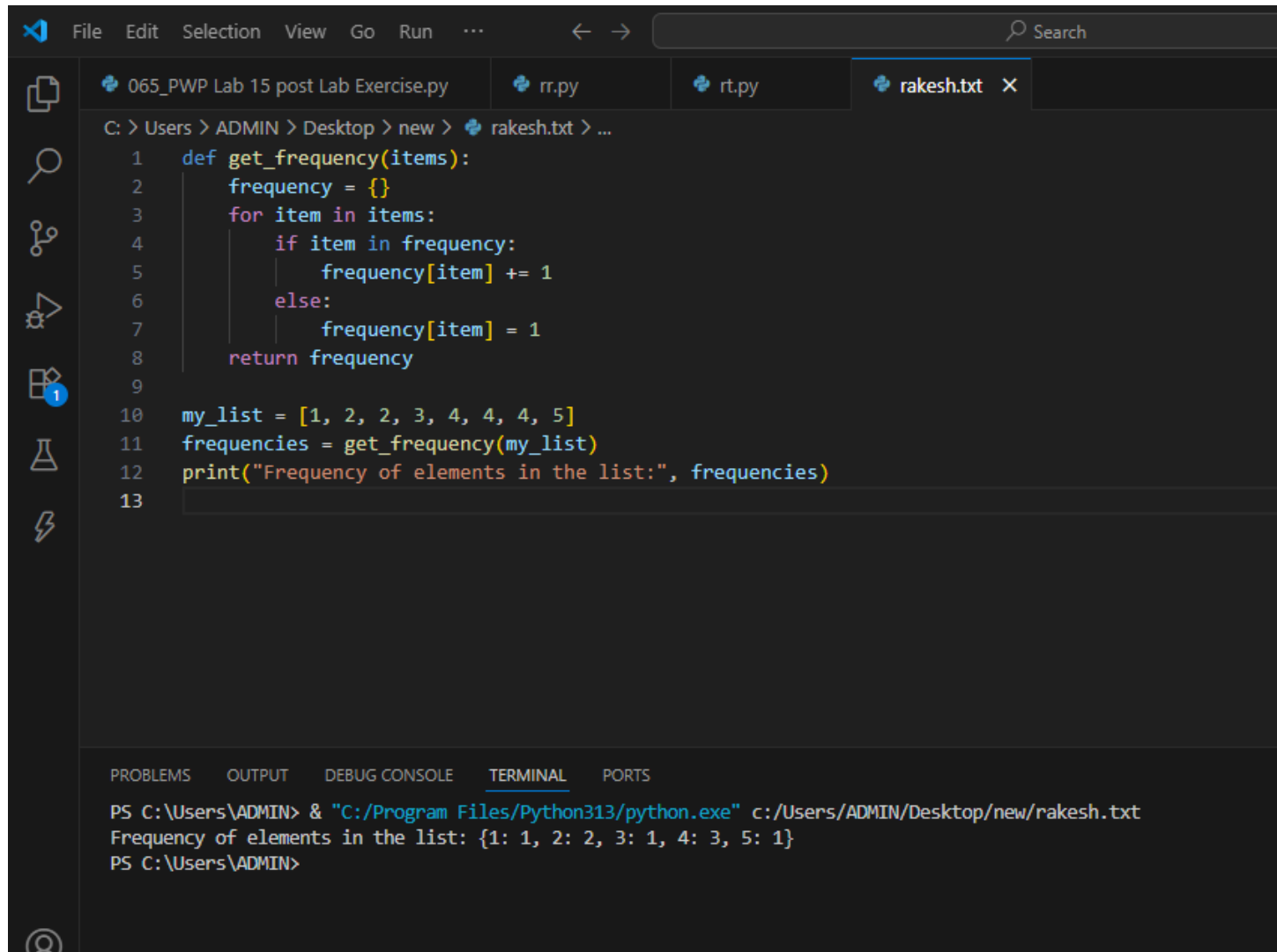
File Edit Selection View Go Run ... Search
065_PWP Lab 15 post Lab Exercise.py rr.py rt.py rakesh.txt X
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 def remove_duplicates(items):
2     return list(set(items))
3
4 my_list = [1, 2, 2, 3, 4, 4, 5]
5 unique_list = remove_duplicates(my_list)
6 print("List after removing duplicates:", unique_list)
7
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
List after removing duplicates: [1, 2, 3, 4, 5]
PS C:\Users\ADMIN>

```

d. Write a Python program to get the frequency of elements in a list.



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<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>





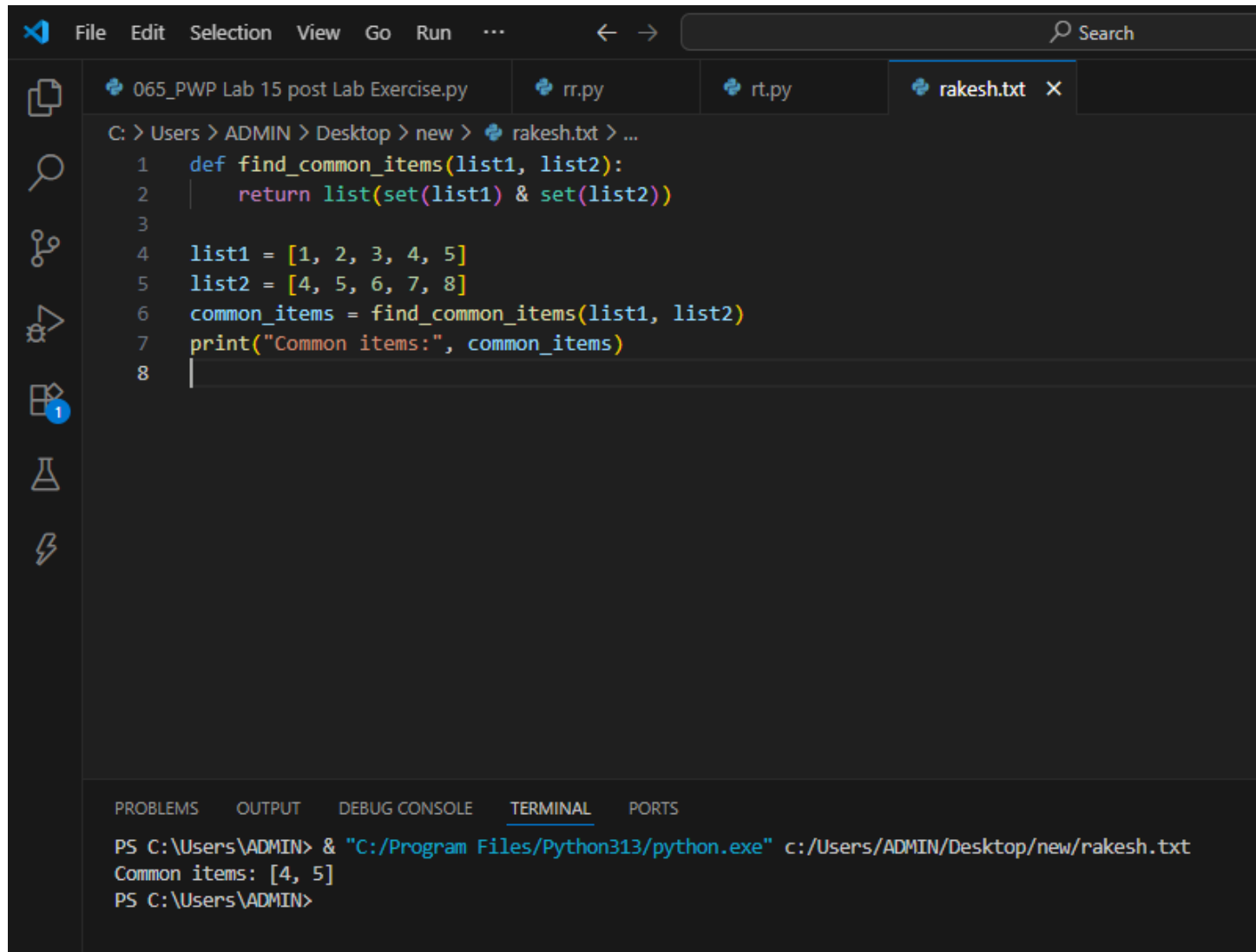
```

File Edit Selection View Go Run ... Search
065_PWP Lab 15 post Lab Exercise.py rr.py rt.py rakesh.txt X
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 def get_frequency(items):
2     frequency = {}
3     for item in items:
4         if item in frequency:
5             frequency[item] += 1
6         else:
7             frequency[item] = 1
8     return frequency
9
10 my_list = [1, 2, 2, 3, 4, 4, 4, 5]
11 frequencies = get_frequency(my_list)
12 print("Frequency of elements in the list:", frequencies)
13
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
Frequency of elements in the list: {1: 1, 2: 2, 3: 1, 4: 3, 5: 1}
PS C:\Users\ADMIN>

```

e. Find common items from two lists

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<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>





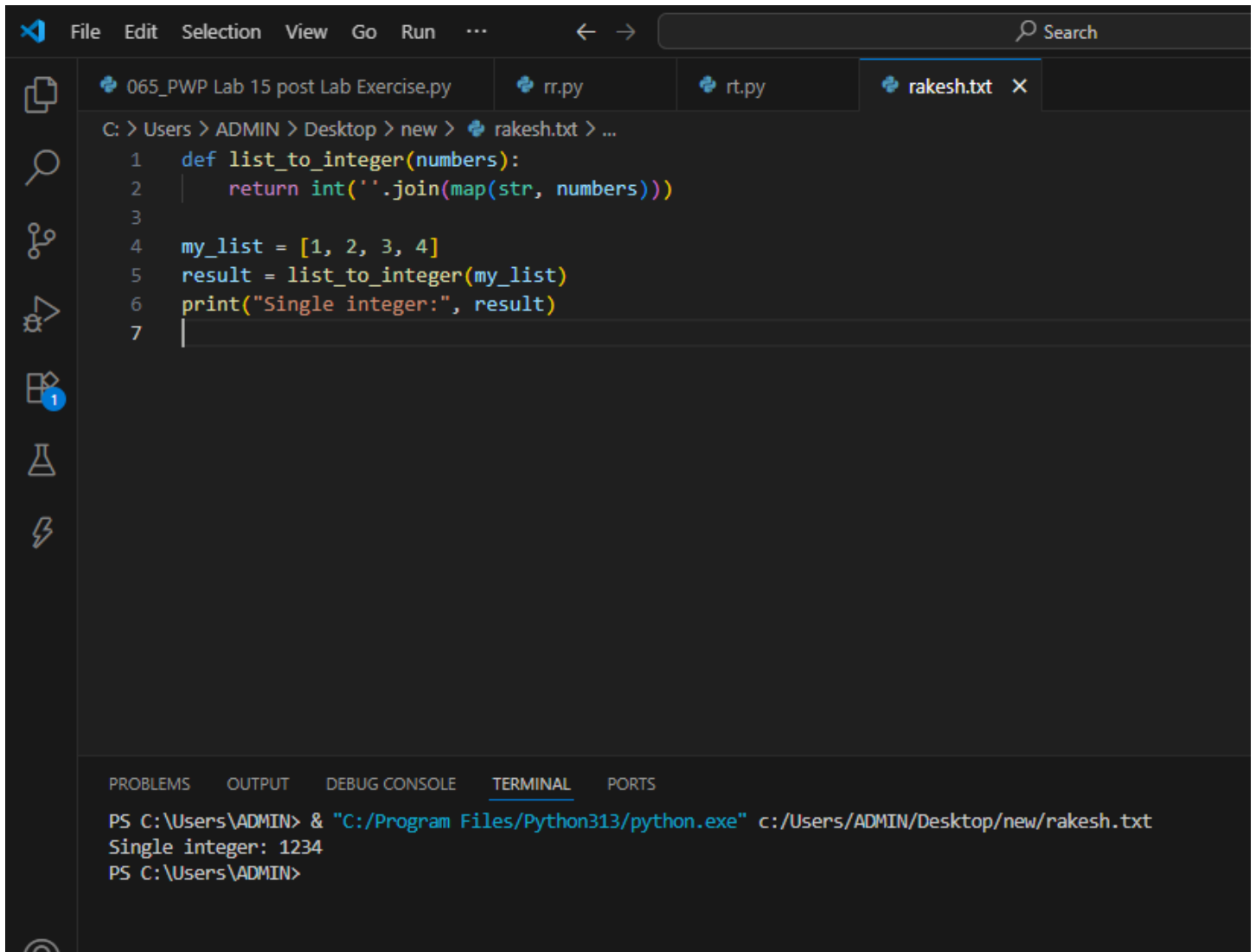
```

File Edit Selection View Go Run ... Search
065_PWP Lab 15 post Lab Exercise.py rr.py rt.py rakesh.txt X
C: > Users > ADMIN > Desktop > new > rakesh.txt > ...
1 def find_common_items(list1, list2):
2     return list(set(list1) & set(list2))
3
4 list1 = [1, 2, 3, 4, 5]
5 list2 = [4, 5, 6, 7, 8]
6 common_items = find_common_items(list1, list2)
7 print("Common items:", common_items)
8
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
Common items: [4, 5]
PS C:\Users\ADMIN>

```

f. Convert a list of multiple integers into a single integer

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<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Write a python program to create, append and remove lists in python.	
<b>Experiment No: 04</b>	<b>Date:</b>	<b>Enrollment No:92400133110</b>



The screenshot shows a code editor with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search bar. The file explorer on the left shows a project named '065\_PWP Lab 15 post Lab Exercise.py' with sub-files 'rr.py', 'rt.py', and 'rakesh.txt'. The main editor area shows the following Python code:

```

1  def list_to_integer(numbers):
2      return int(''.join(map(str, numbers)))
3
4  my_list = [1, 2, 3, 4]
5  result = list_to_integer(my_list)
6  print("Single integer:", result)
7

```

Below the code editor is a terminal window with tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The terminal shows the command to run the script and its output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/Desktop/new/rakesh.txt
Single integer: 1234
PS C:\Users\ADMIN>

```