

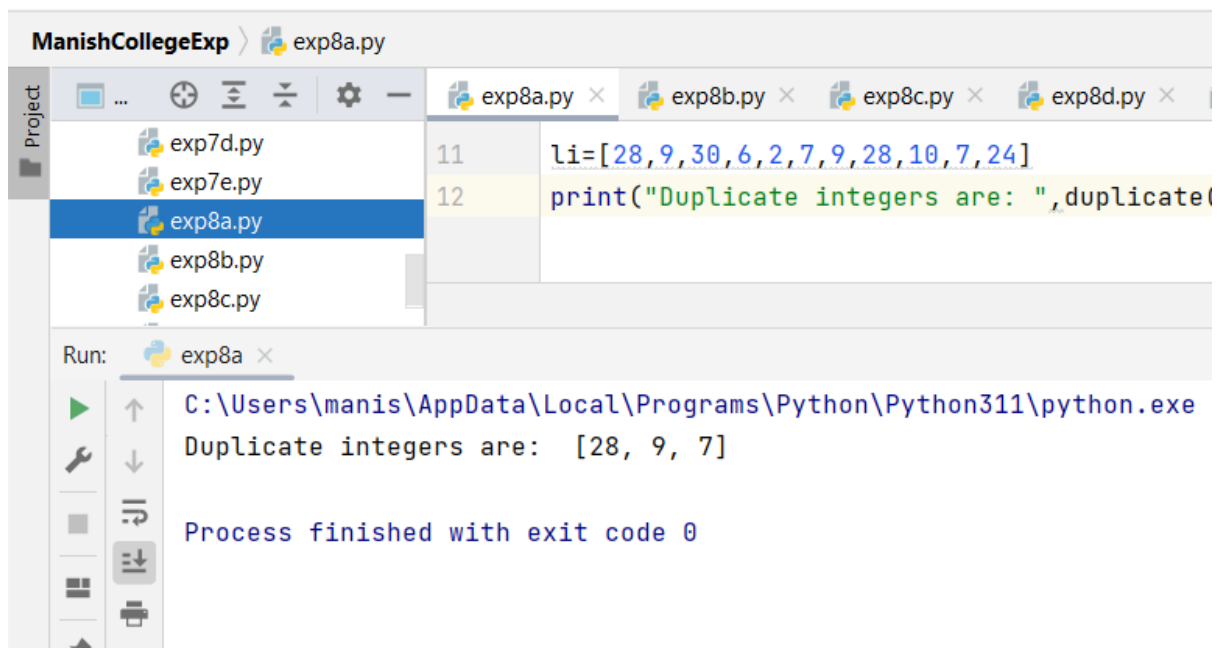
## Experiment No.8

**Aim:** Edit/compile/run a program to duplicate all the elements of a list.

### Program A: Brute force approach

```
def duplicate(li):  
    n=len(li)  
    dup=[]  
    for i in range (n):  
        k = i+1  
        for j in range(k,n):  
            if li[i] == li[j] and li[i] not in dup:  
                dup.append(li[i])  
    return dup  
  
li=[28,9,30,6,2,7,9,28,10,7,24]  
print("Duplicate integers are: ",duplicate(li))
```

### Output:



**Program B: Counter function**

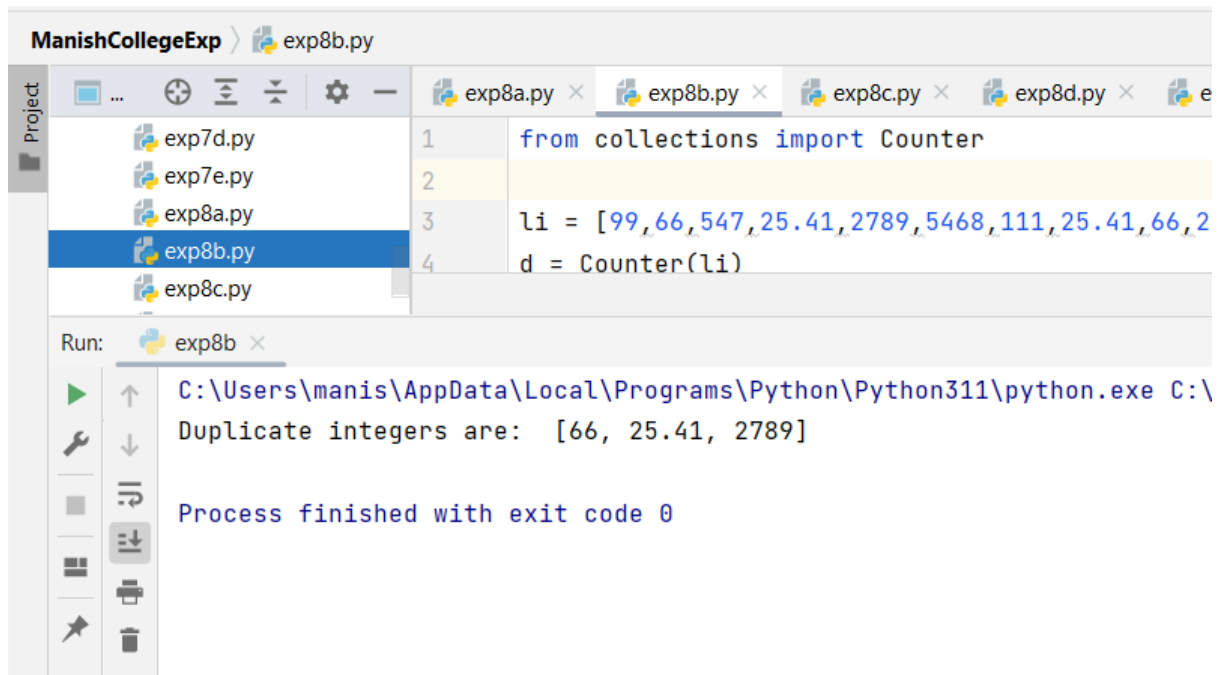
```

from collections import Counter

li = [99,66,547,25.41,2789,5468,111,25.41,66,2789]
d = Counter(li)

repeated_list = list([num for num in d if d[num]>1])
print("Duplicate integers are: ",repeated_list)

```

**Output:****Program C: Using a single for loop**

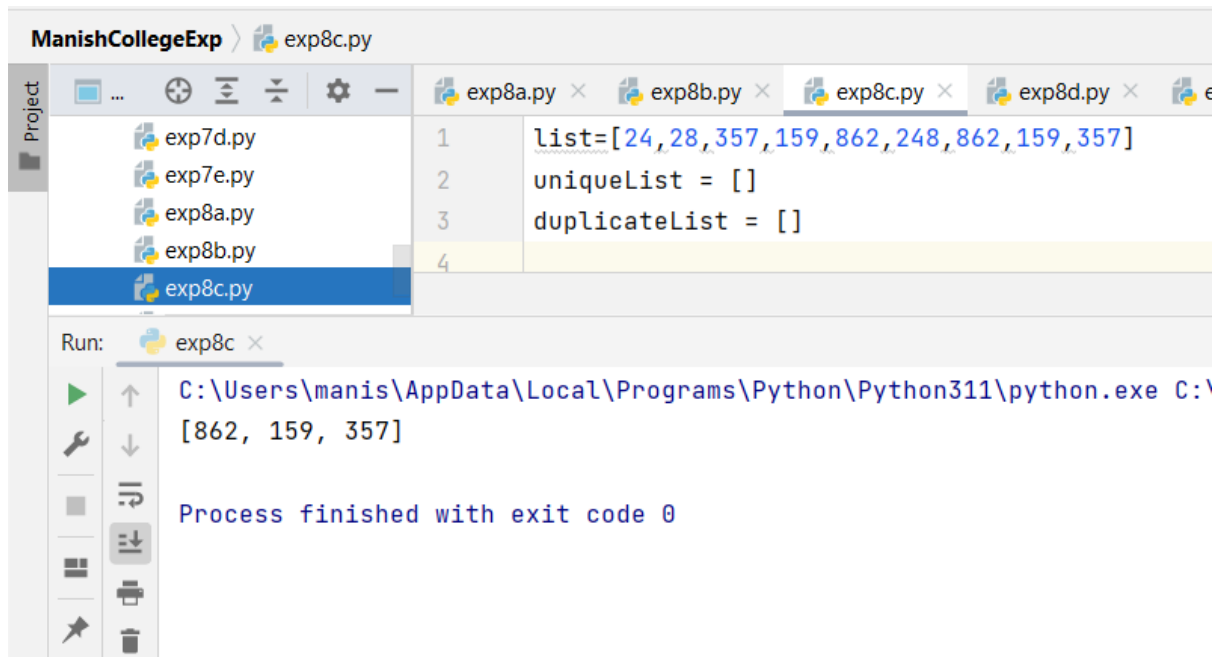
```

list=[24,28,357,159,862,248,862,159,357]
uniqueList = []
duplicateList = []

for i in list:
    if i not in uniqueList:
        uniqueList.append(i)
    elif i not in duplicateList:
        duplicateList.append(i)

print(duplicateList)

```

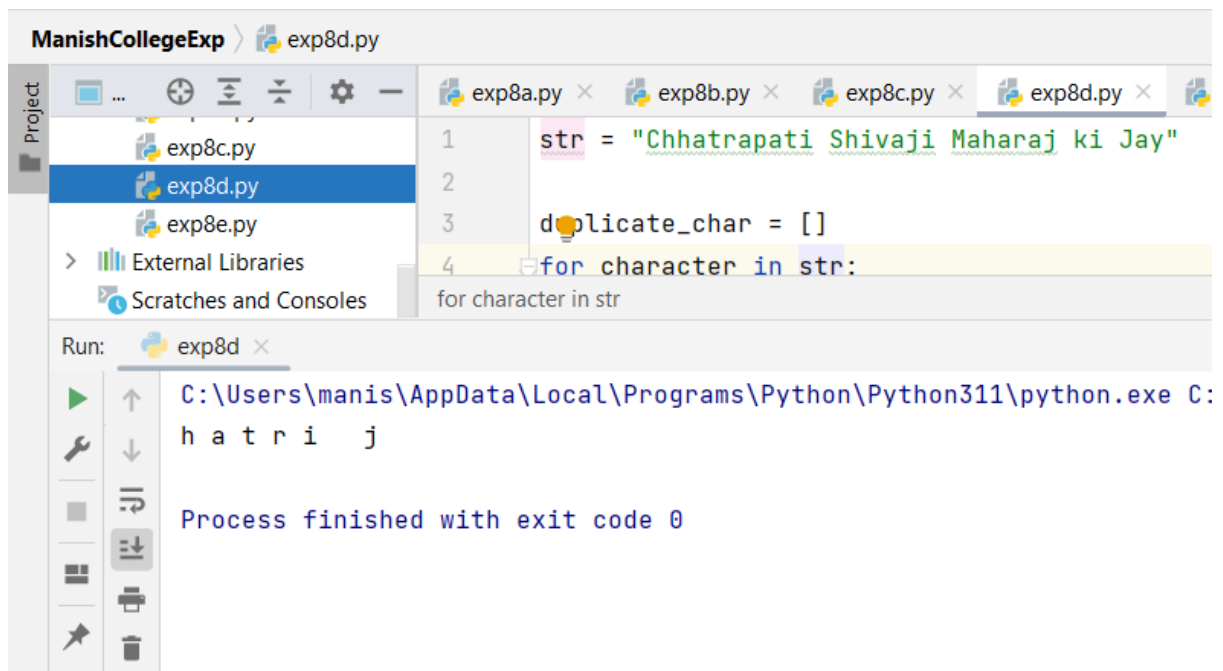
**Output:****Program D: To find duplicate characters in a list**

```
str = "Chhatrapati Shivaji Maharaj ki Jay"

duplicate_char = []
for character in str:

    if str.count(character) > 1:

        if character not in duplicate_char:
            duplicate_char.append(character)
print(*duplicate_char)
```

**Output:****Program E: To find duplicate characters from list using Counter function.**

```

from collections import Counter

def find_dup_char(input):
    WC = Counter(input)

    for letter, count in WC.items():
        if (count > 1):
            print(letter)

if __name__ == "__main__":
    input = 'Yada yada hi dharmasya glanirbhavati bharatah'
    find_dup_char(input)

```

**Output:**

The screenshot shows an IDE window titled 'ManishCollegeExp' with a file named 'exp8e.py'. The code in the editor is as follows:

```

1  from collections import Counter
2
3
4  def find_dup_char(input):

```

The 'Run' console shows the execution of the script. The command executed is:

```
C:\Users\manis\AppData\Local\Programs\Python\Python311\python.exe C:\Users\manis\Pr
```

The output of the script is:

```

a
d
y
h
i
r
m
b
t

```

Below the output, it states: 'Process finished with exit code 0'.

Practical Performance (4)	Writeup & Oral (4)	Attendance (2)	Total (10)