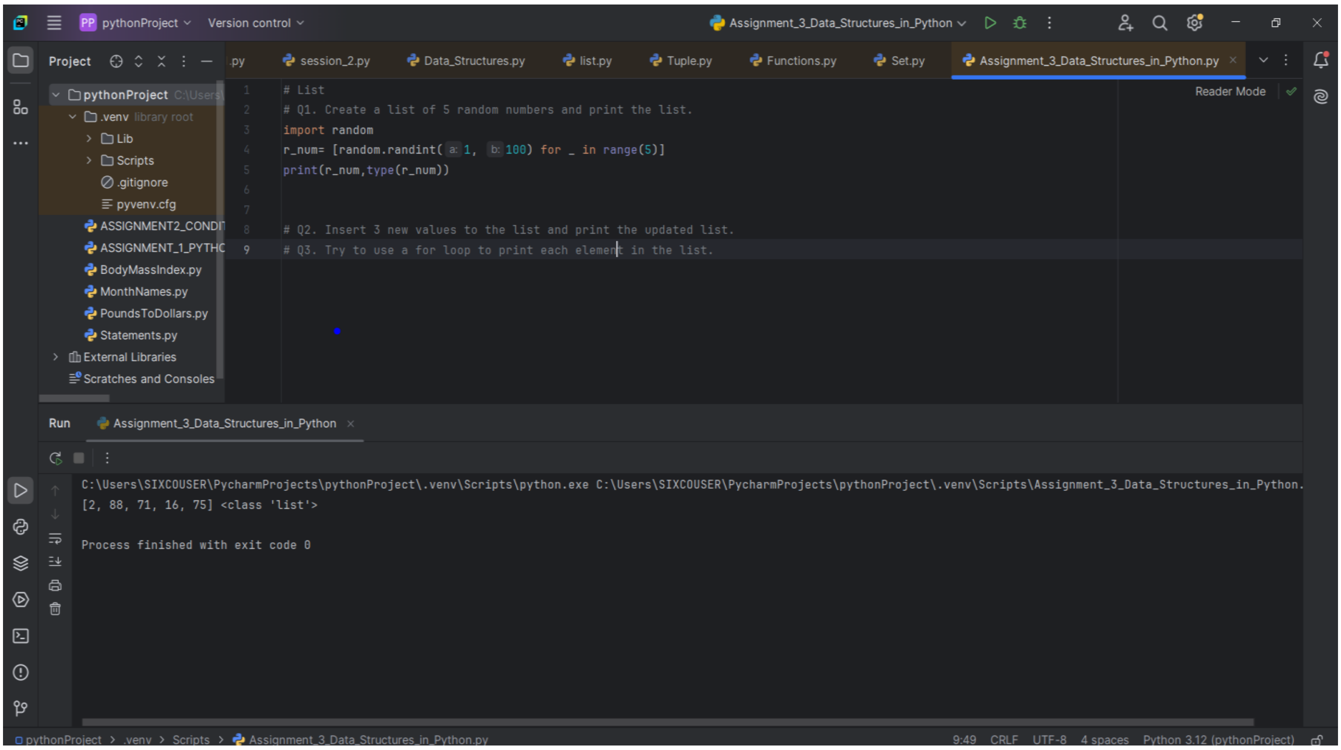
ASSIGNMENT 3 – DATA STRUCTURES IN PYTHON

LIST

1. Create a list of 5 random numbers and print the list.

```
import random
r_num= [random.randint(1, 100) for _ in range(5)]
print(r_num,type(r_num))
```

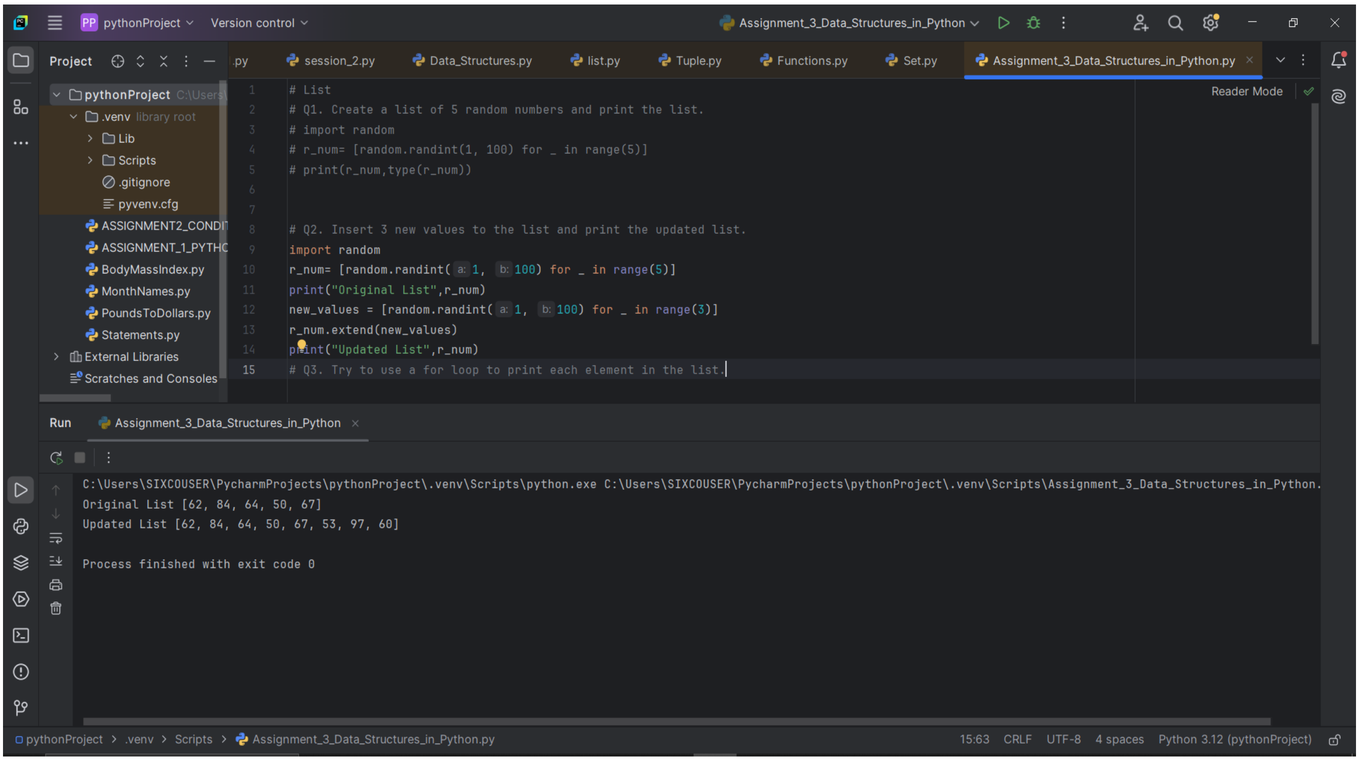


```
# List
# Q1. Create a list of 5 random numbers and print the list.
import random
r_num= [random.randint(1, 100) for _ in range(5)]
print(r_num,type(r_num))


# Q2. Insert 3 new values to the list and print the updated list.
# Q3. Try to use a for loop to print each element in the list.
```

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
[2, 88, 71, 16, 75] <class 'list'>

Process finished with exit code 0
```

2. Insert 3 new values to the list and print the updated list.

```
import random
r_num= [random.randint(1, 100) for _ in range(5)]
print("Original List",r_num)

new_values = [random.randint(1, 100) for _ in range(3)]

r_num.extend(new_values)

print("Updated List",r_num)
```

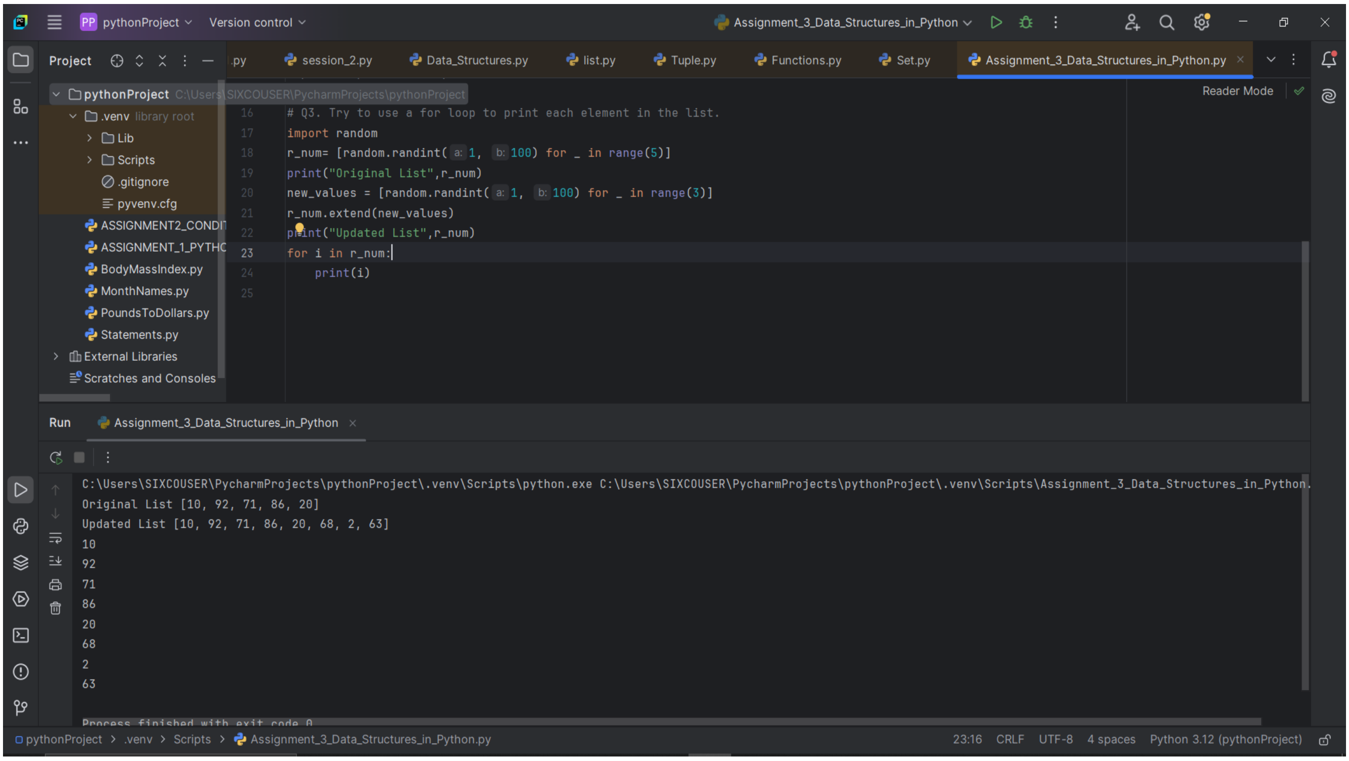


```
# List
# Q1. Create a list of 5 random numbers and print the list.
# import random
# r_num= [random.randint(1, 100) for _ in range(5)]
# print(r_num,type(r_num))


# Q2. Insert 3 new values to the list and print the updated list.
import random
r_num= [random.randint( a: 1,  b: 100) for _ in range(5)]
print("Original List",r_num)
new_values = [random.randint( a: 1,  b: 100) for _ in range(3)]
r_num.extend(new_values)
print("Updated List",r_num)
# Q3. Try to use a for loop to print each element in the list.
```

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
Original List [62, 84, 64, 50, 67]
Updated List [62, 84, 64, 50, 67, 53, 97, 60]

Process finished with exit code 0
```

3. Try to use a for loop to print each element in the list.

```
import random
r_num= [random.randint(1, 100) for _ in range(5)]
print("Original List",r_num)
new_values = [random.randint(1, 100) for _ in range(3)]
r_num.extend(new_values)
print("Updated List",r_num)
for i in r_num:
    print(i)
```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23:16 CRLF UTF-8 4 spaces Python 3.12 (pythonProject)

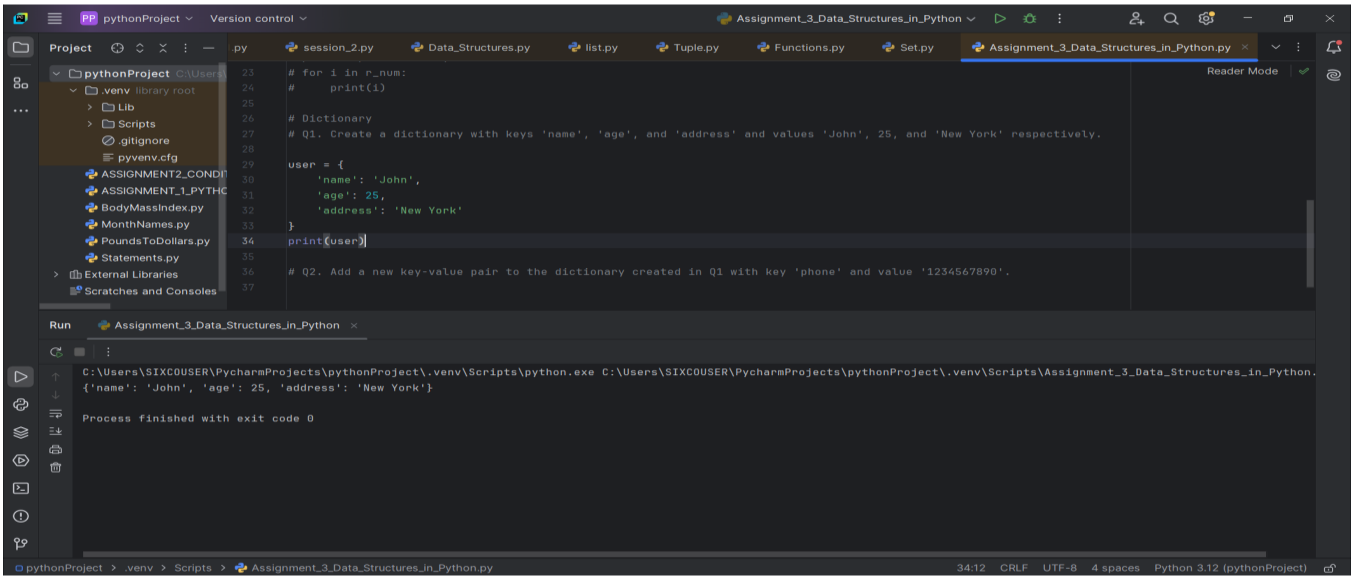
```
# Q3. Try to use a for loop to print each element in the list.
import random
r_num= [random.randint( a: 1,  b: 100) for _ in range(5)]
print("Original List",r_num)
new_values = [random.randint( a: 1,  b: 100) for _ in range(3)]
r_num.extend(new_values)
print("Updated List",r_num)
for i in r_num:
    print(i)
```

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
Original List [10, 92, 71, 86, 20]
Updated List [10, 92, 71, 86, 20, 68, 2, 63]
10
92
71
86
20
68
2
63

Process finished with exit code 0
```

DICTIONARY

1. Create a dictionary with keys 'name', 'age', and 'address' and values 'John', 25, and 'New York' respectively.

```
user = {
    'name': 'John',
    'age': 25,
    'address': 'New York'
}
print(user)
```

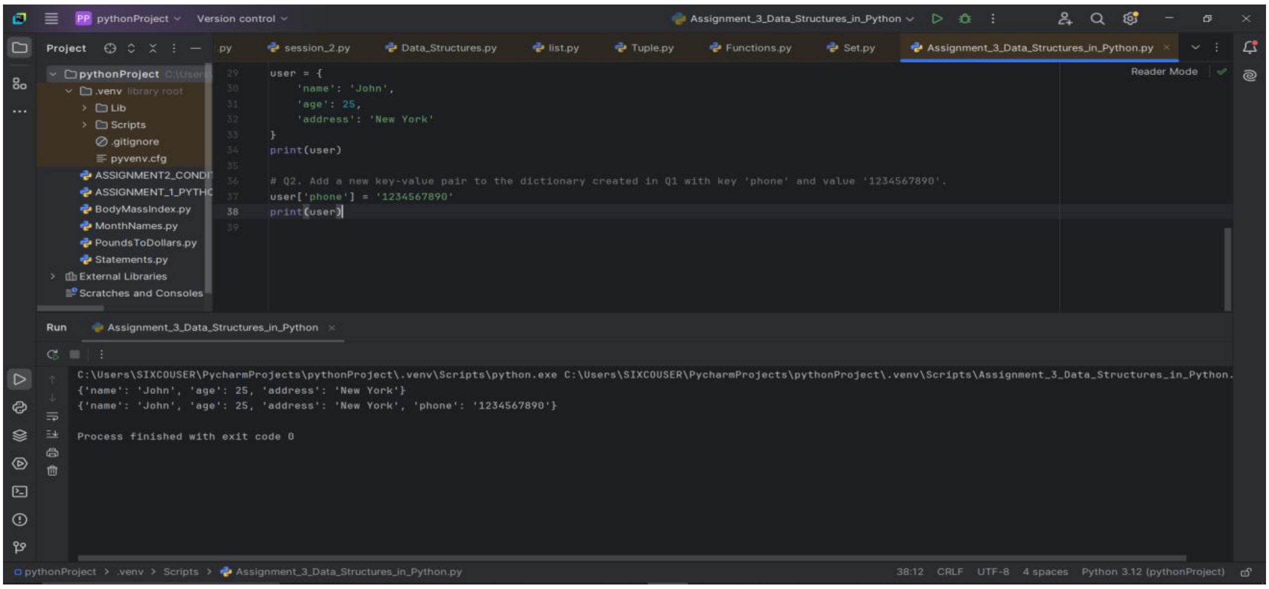


```
# for i in r_num:
#     print(i)

# Dictionary
# Q1. Create a dictionary with keys 'name', 'age', and 'address' and values 'John', 25, and 'New York' respectively.

user = {
    'name': 'John',
    'age': 25,
    'address': 'New York'
}
print(user)

# Q2. Add a new key-value pair to the dictionary created in Q1 with key 'phone' and value '1234567890'.
```

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
{'name': 'John', 'age': 25, 'address': 'New York'}

Process finished with exit code 0
```

2. Add a new key-value pair to the dictionary created in Q1 with key 'phone' and value '1234567890'.

```
user['phone'] = '1234567890'

print(user)
```



```
user = {
    'name': 'John',
    'age': 25,
    'address': 'New York'
}
print(user)

# Q2. Add a new key-value pair to the dictionary created in Q1 with key 'phone' and value '1234567890'.
user['phone'] = '1234567890'
print(user)
```

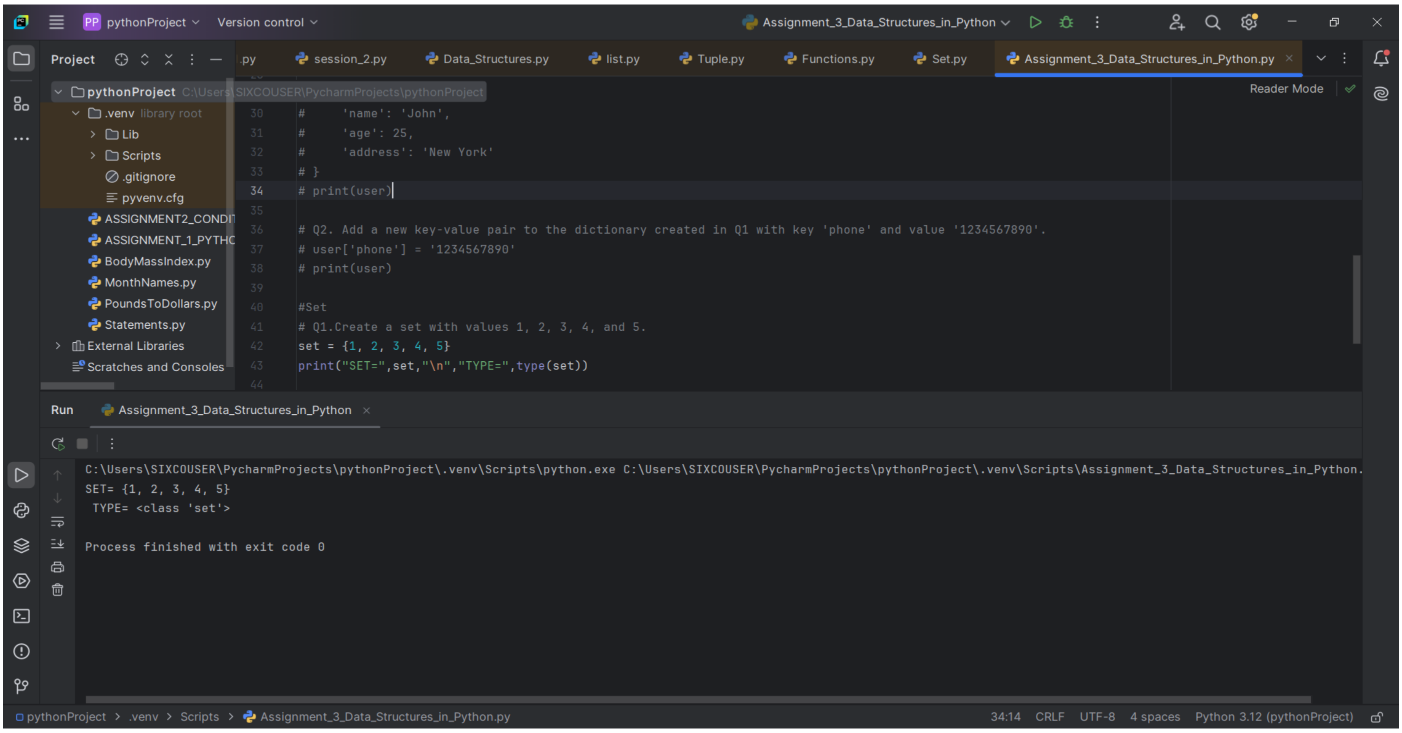
```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
{'name': 'John', 'age': 25, 'address': 'New York'}
{'name': 'John', 'age': 25, 'address': 'New York', 'phone': '1234567890'}

Process finished with exit code 0
```

SET

1.Create a set with values 1, 2, 3, 4, and 5.

set = {1, 2, 3, 4, 5}

print("SET=",set,"\n","TYPE=",type(set))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```
#     'name': 'John',
#     'age': 25,
#     'address': 'New York'
# }
# print(user)

# Q2. Add a new key-value pair to the dictionary created in Q1 with key 'phone' and value '1234567890'.
# user['phone'] = '1234567890'
# print(user)

#Set
# Q1.Create a set with values 1, 2, 3, 4, and 5.
set = {1, 2, 3, 4, 5}
print("SET=",set,"\n","TYPE=",type(set))
```

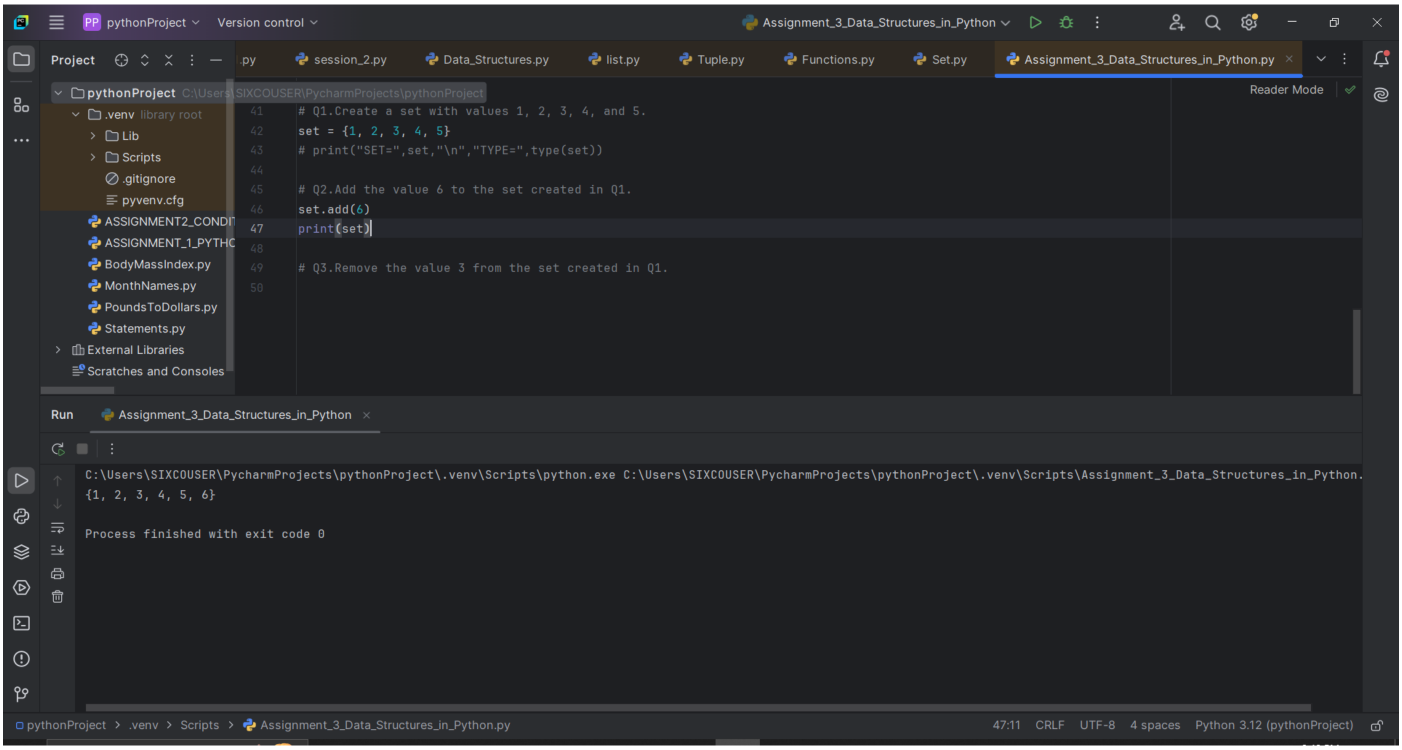
```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
SET= {1, 2, 3, 4, 5}
 TYPE= <class 'set'>

Process finished with exit code 0
```

2. Add the value 6 to the set created in Q1.

set.add(6)

print(set)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```
# Q1.Create a set with values 1, 2, 3, 4, and 5.
set = {1, 2, 3, 4, 5}
# print("SET=",set,"\n","TYPE=",type(set))

# Q2.Add the value 6 to the set created in Q1.
set.add(6)
print(set)

# Q3.Remove the value 3 from the set created in Q1.
```

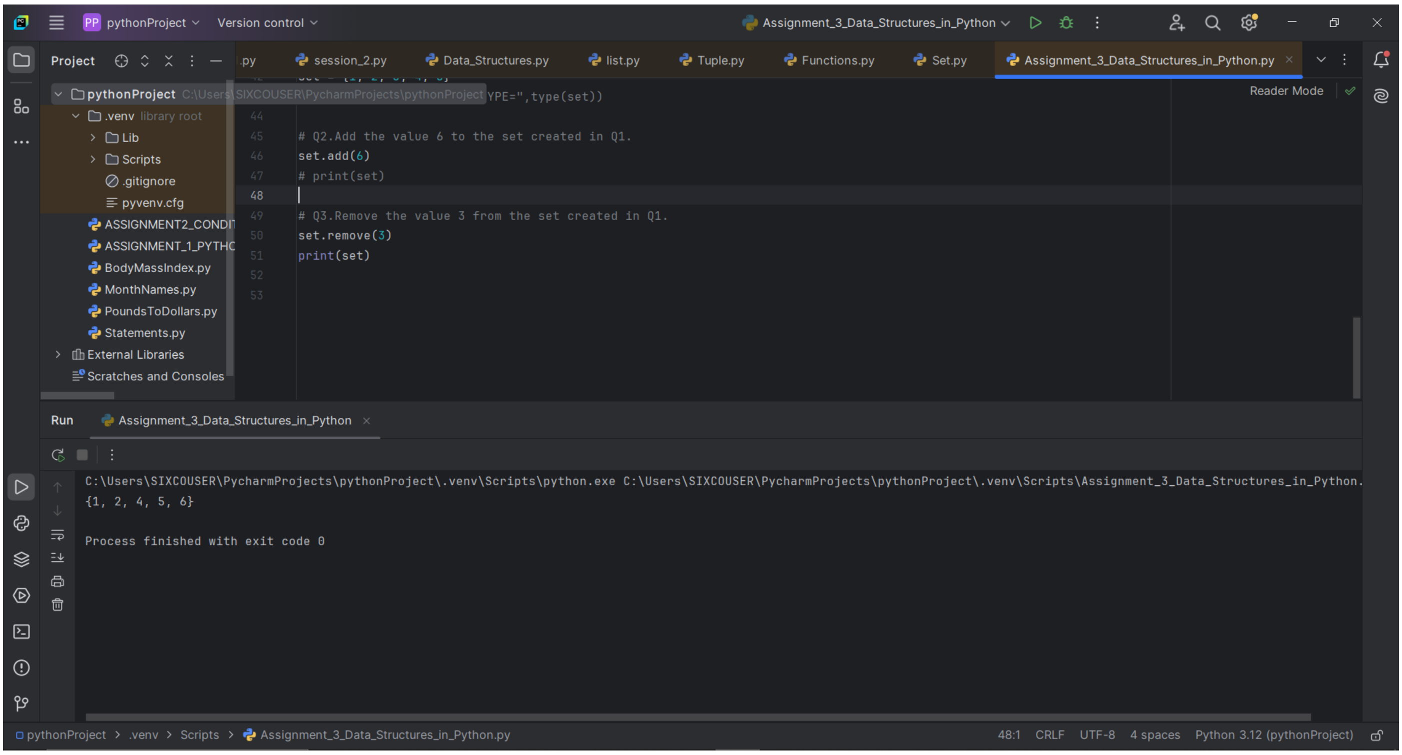
```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
{1, 2, 3, 4, 5, 6}

Process finished with exit code 0
```

3. Remove the value 3 from the set created in Q1.

set.remove(3)

print(set)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```
YPE=",type(set))

# Q2.Add the value 6 to the set created in Q1.
set.add(6)
# print(set)

# Q3.Remove the value 3 from the set created in Q1.
set.remove(3)
print(set)
```

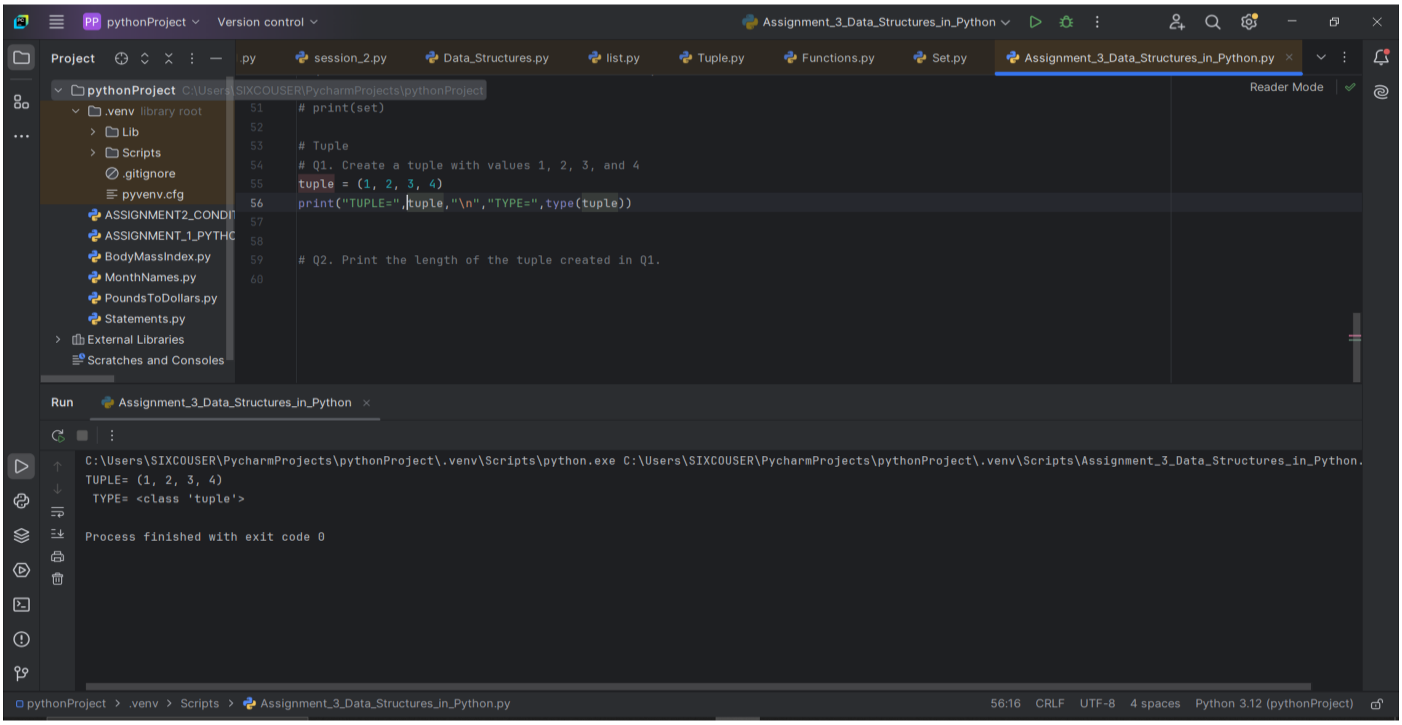
```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
{1, 2, 4, 5, 6}

Process finished with exit code 0
```

TUPLE

1. Create a tuple with values 1, 2, 3, and 4 for i in range(1, 21):

tuple = (1, 2, 3, 4)

print("TUPLE=",tuple,"\n","TYPE=",type(tuple))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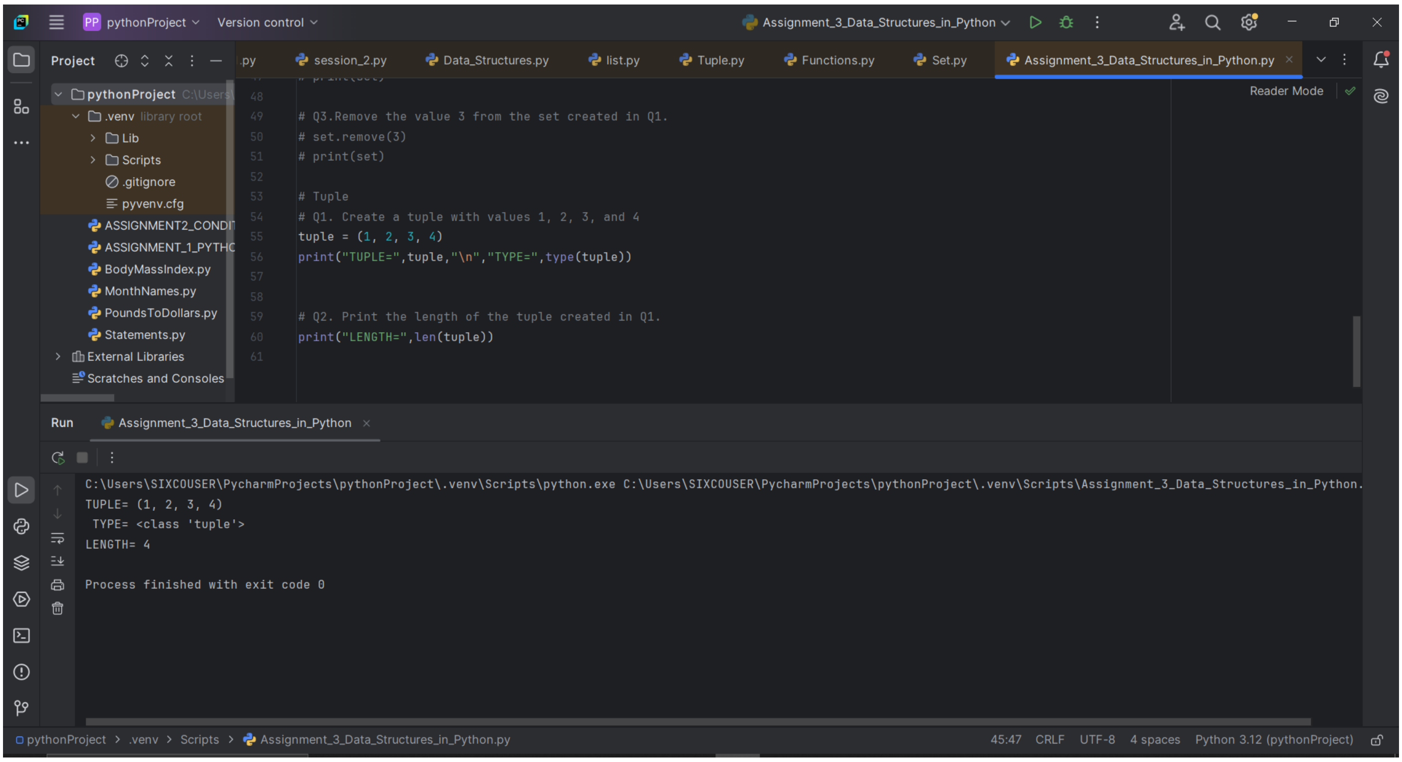
```
# print(set)

# Tuple
# Q1. Create a tuple with values 1, 2, 3, and 4
tuple = (1, 2, 3, 4)
print("TUPLE=",tuple,"\n","TYPE=",type(tuple))


# Q2. Print the length of the tuple created in Q1.
```

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
TUPLE= (1, 2, 3, 4)
 TYPE= <class 'tuple'>

Process finished with exit code 0
```

2. Print the length of the tuple created in Q1.

```
print("LENGTH=",len(tuple))
```



```python

# Q3.Remove the value 3 from the set created in Q1.
# set.remove(3)
# print(set)

# Tuple
# Q1. Create a tuple with values 1, 2, 3, and 4
tuple = (1, 2, 3, 4)
print("TUPLE=",tuple,"\n","TYPE=",type(tuple))


# Q2. Print the length of the tuple created in Q1.
print("LENGTH=",len(tuple))

```

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\Assignment_3_Data_Structures_in_Python.
TUPLE= (1, 2, 3, 4)
 TYPE= <class 'tuple'>
LENGTH= 4

Process finished with exit code 0
```