Q26. What is a string? How can we declare string in Python?

String is a Text datatype . This datatype hole the some text value it represent as str(string)

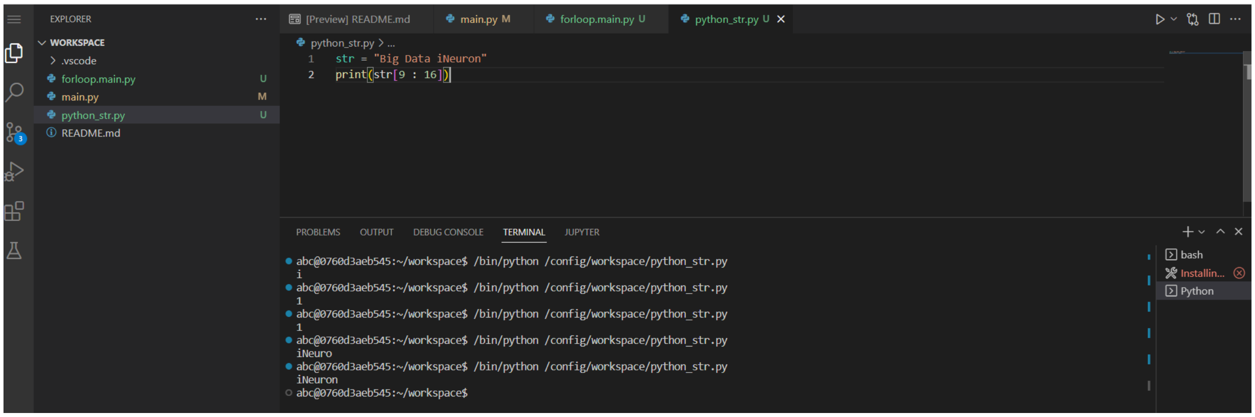
Str1 = “STRING”

Q27. How can we access the string using its index?

We can access through the square brackets by segregating each character by mentioning the index value . The first character represent the 0 value and last value represent the -1 .

Q28. Write a code to get the desired output of the following

```
string = "Big Data iNeuron"
desired_output = "iNeuron"
```

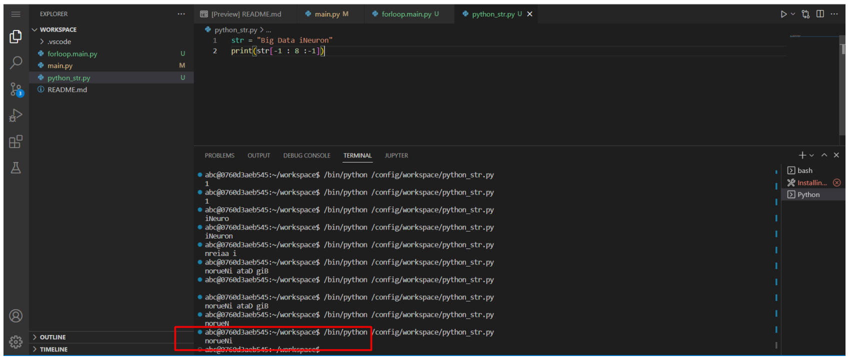


```
str = "Big Data iNeuron"
print(str[9 : 16])
```

```
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  i
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  1
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  1
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  iNeuro
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  iNeuron
○ abc@0760d3aeb545:~/workspace$
```

Q29. Write a code to get the desired output of the following

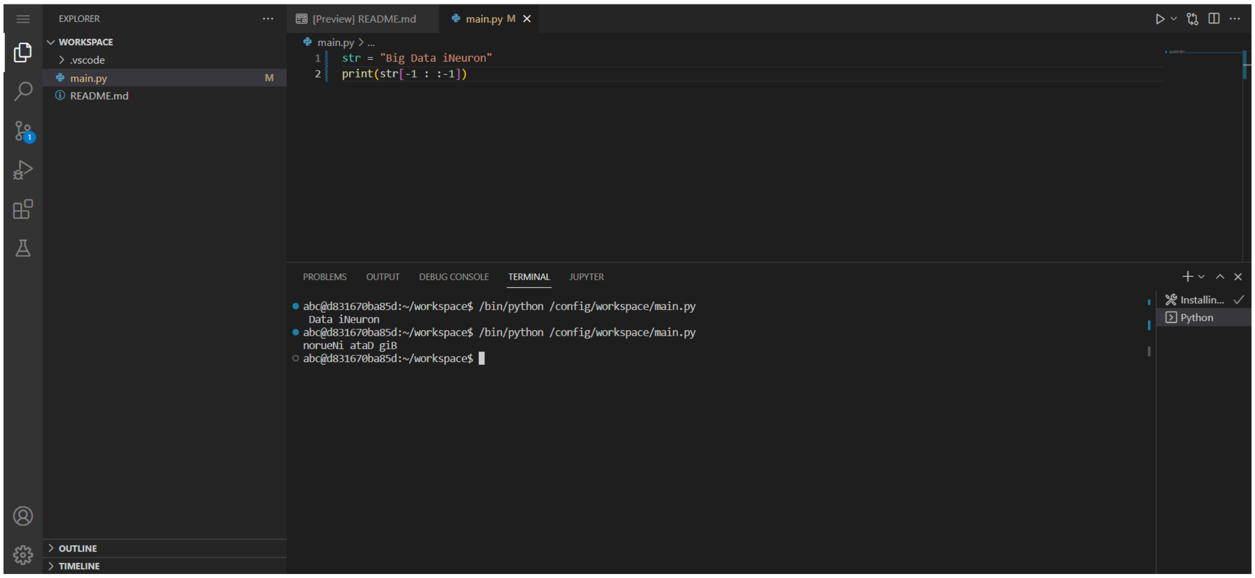
```
string = "Big Data iNeuron"
desired_output = "norueNi"
```



```
str = "Big Data iNeuron"
print(str[-1 : 8 :-1])
```

```
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  1
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  1
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  iNeuro
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  iNeuron
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  nreiaa i
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  norueNi ataD giB
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py

● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  norueNi ataD giB
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  norueN
● abc@0760d3aeb545:~/workspace$ /bin/python /config/workspace/python_str.py
  norueNi
○ abc@0760d3aeb545:~/workspace$
```

Q30. Resverse the string given in the above question.



```python
str = "Big Data iNeuron"
print(str[-1 : :-1])
```

```
abc@d831670ba85d:~/workspace$ /bin/python /config/workspace/main.py
 Data iNeuron
abc@d831670ba85d:~/workspace$ /bin/python /config/workspace/main.py
norueNi ataD giB
abc@d831670ba85d:~/workspace$ 
```

Q31. How can you delete entire string at once?

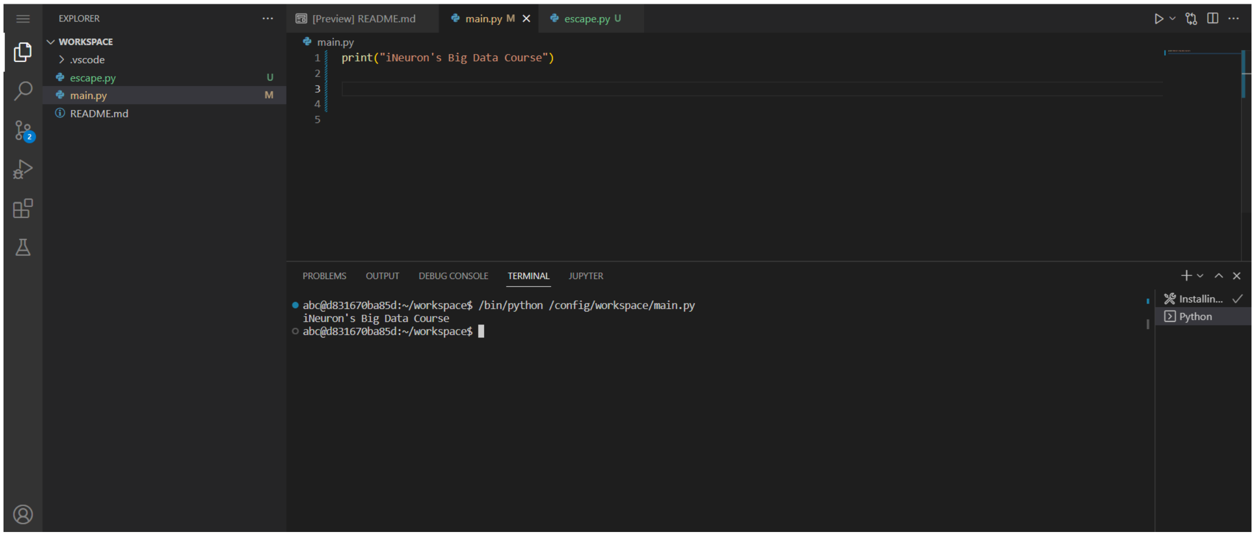
By using del command we can delete the entire string

Q32. What is escape sequence?

Escape sequence is backlash followed by character you to insert

Q33. How can you print the below string?

`'iNeuron's Big Data Course'`



```python
print("iNeuron's Big Data Course")
```

```
abc@d831670ba85d:~/workspace$ /bin/python /config/workspace/main.py
iNeuron's Big Data Course
abc@d831670ba85d:~/workspace$ 
```

Q34. What is a list in Python?

List stores the number of elements within square brackets , List stores heterogeneous kind of data . Its sequential data.

Q35. How can you create a list in Python?

Lists are created by square brackets separated by commas .

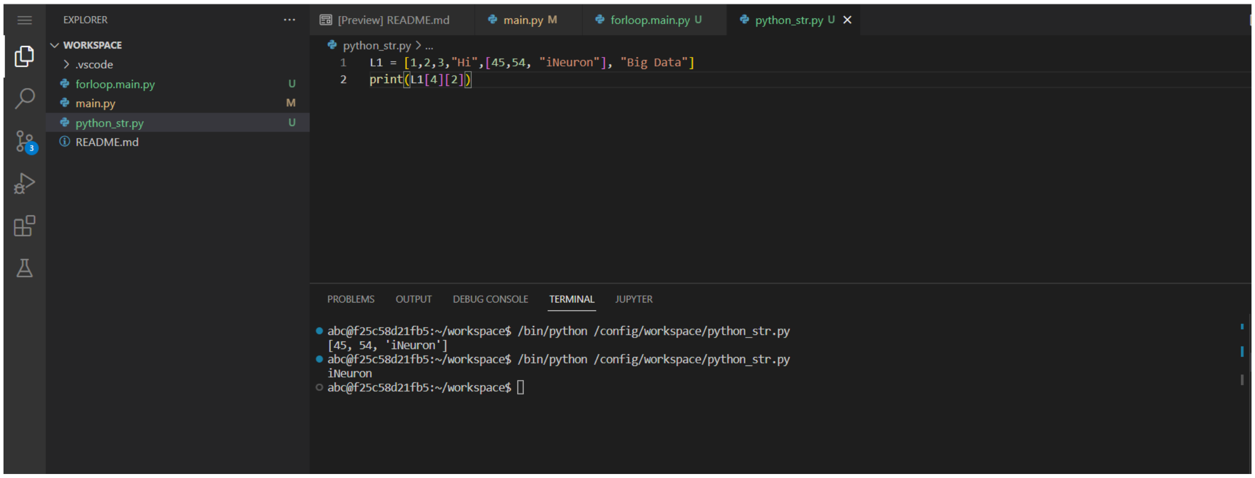
Eg : L1 = [1,2,3.14]

36. How can we access the elements in a list?

List can be access through the index

37. Write a code to access the word "iNeuron" from the given list.

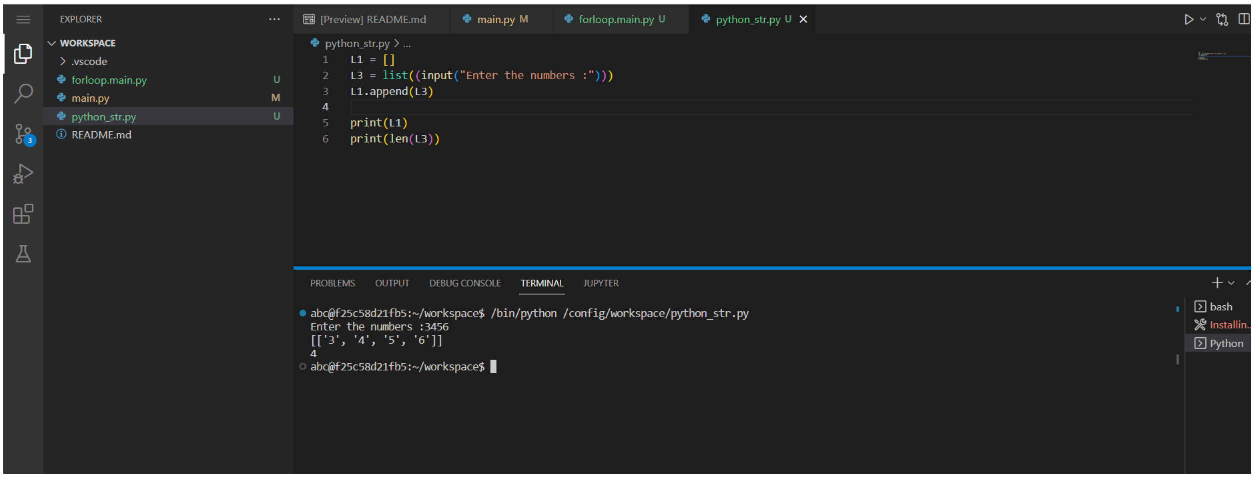
```
lst = [1,2,3,"Hi",[45,54, "iNeuron"], "Big Data"]
```



```python
L1 = [1,2,3,"Hi",[45,54, "iNeuron"], "Big Data"]
print(L1[4][2])
```

```
abc@f25c58d21fb5:~/workspace$ /bin/python /config/workspace/python_str.py
[45, 54, 'iNeuron']
abc@f25c58d21fb5:~/workspace$ /bin/python /config/workspace/python_str.py
iNeuron
abc@f25c58d21fb5:~/workspace$
```

38. Take a list as an input from the user and find the length of the list.

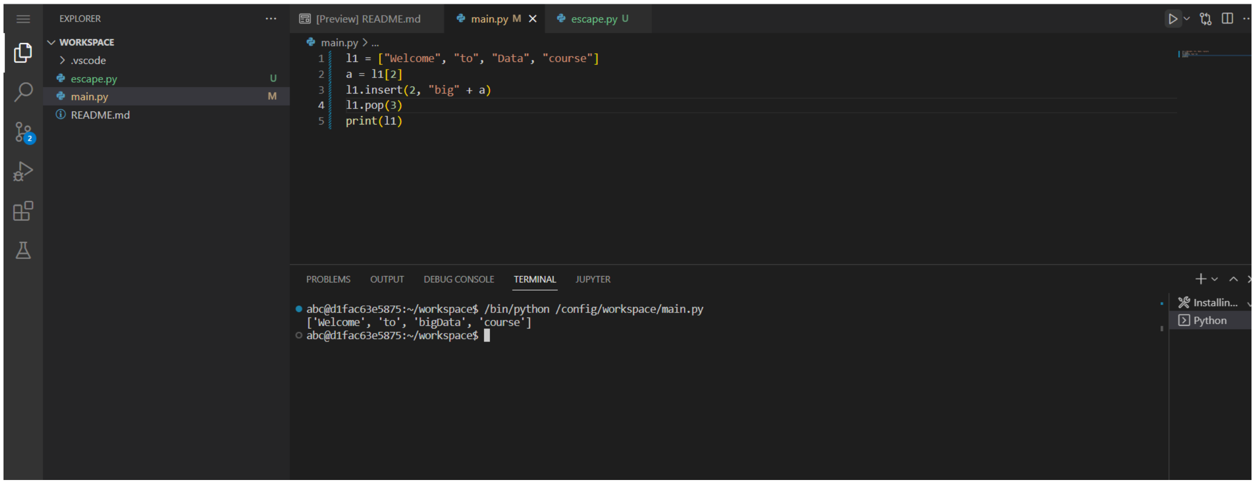


```python
L1 = []
L3 = list((input("Enter the numbers :")))
L1.append(L3)

print(L1)
print(len(L3))
```

```
abc@f25c58d21fb5:~/workspace$ /bin/python /config/workspace/python_str.py
Enter the numbers :3456
[['3', '4', '5', '6']]
4
abc@f25c58d21fb5:~/workspace$ 
```

39. Add the word "Big" in the 3rd index of the given list.

```
lst = ["Welcome", "to", "Data", "course"]
```



```python
l1 = ["Welcome", "to", "Data", "course"]
a = l1[2]
l1.insert(2, "big" + a)
l1.pop(3)
print(l1)
```

```
abc@d1fac63e5875:~/workspace$ /bin/python /config/workspace/main.py
['Welcome', 'to', 'bigData', 'course']
abc@d1fac63e5875:~/workspace$ 
```

40. What is a tuple? How is it different from list?

Turple is stores multiple items in a single variable , tuple are immutable and list are mutable which mean list can be changed or edited but in tuple cant be changed any value

41. How can you create a tuple in Python?

Python can be created by enclosing all the comma-separated elements inside the parenthesis ()

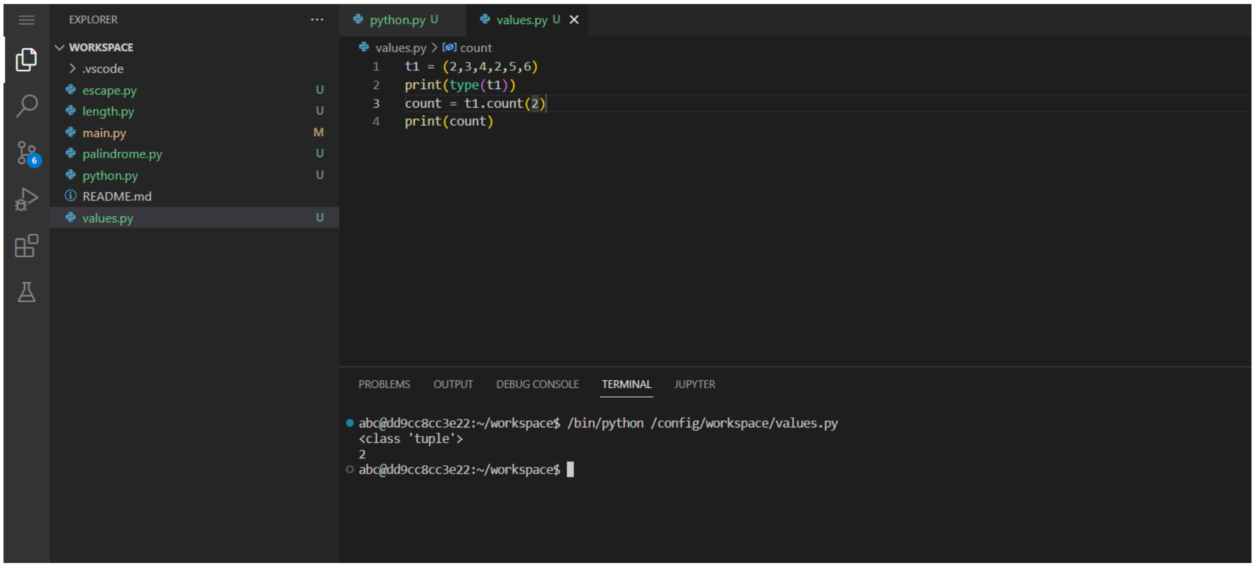
42. Create a tuple and try to add your name in the tuple. Are you able to do it? Support your answer with reason.

We cant able to add name in tuple because tuple is immutable and tuple does not support append function

43. Can two tuple be appended. If yes, write a code for it. If not, why?

No we cant append the tuple because tuple is immutable.

44. Take a tuple as an input and print the count of elements in it.



```python
t1 = (2,3,4,2,5,6)
print(type(t1))
count = t1.count(2)
print(count)
```

```
abc@dd9cc8cc3e22:~/workspace$ /bin/python /config/workspace/values.py
<class 'tuple'>
2
abc@dd9cc8cc3e22:~/workspace$
```

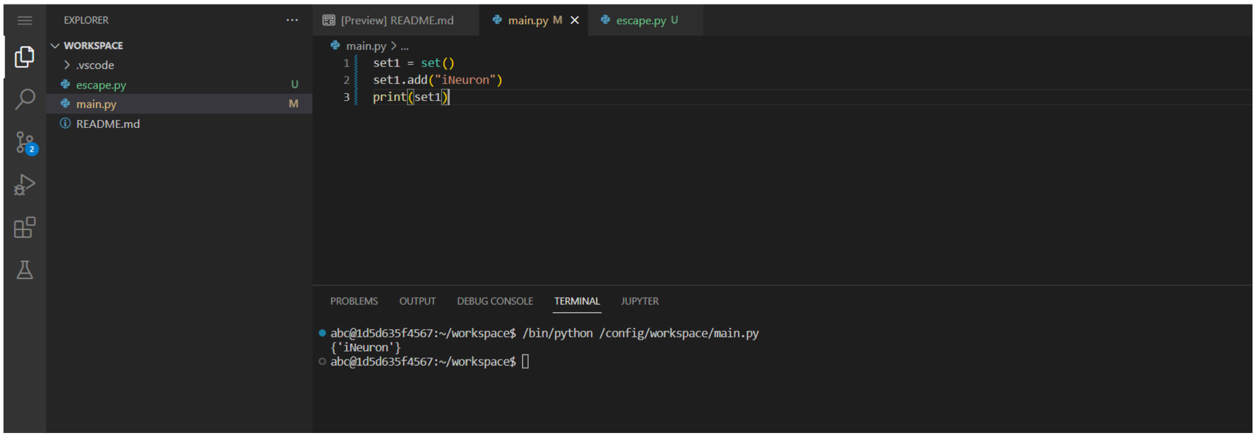
45. What are sets in Python?

Sets is collection which is unordered, unchangeable*, and unindexed. and also stores the unique or distinct value in it

46. How can you create a set?

Set is created by number of elements within the curly bais {}

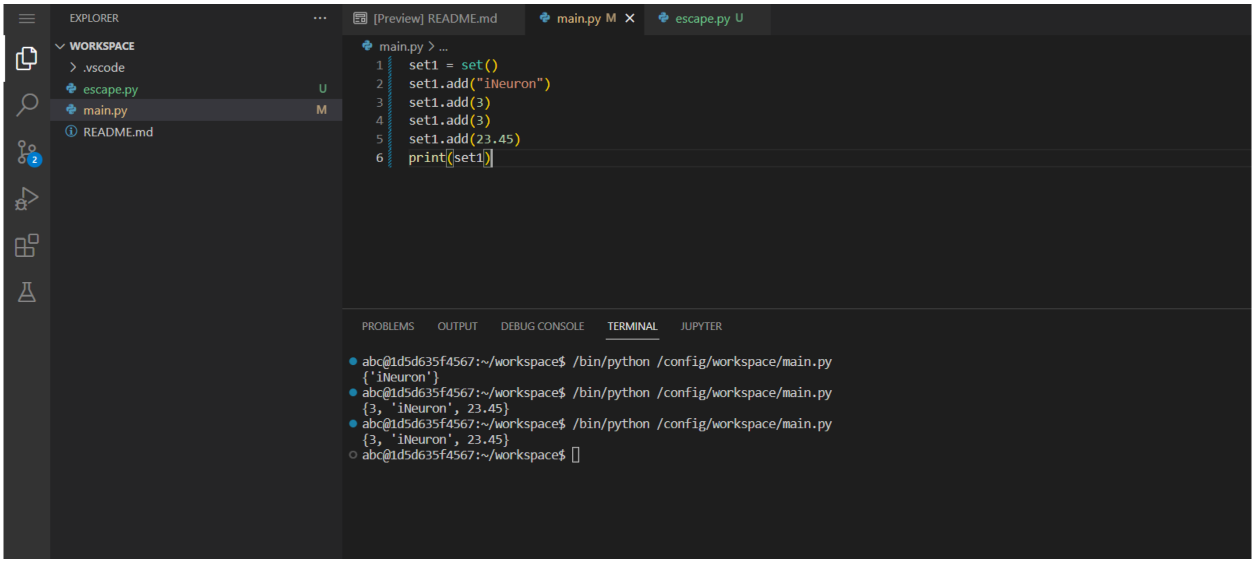
47. Create a set and add "iNeuron" in your set.



```python
set1 = set()
set1.add("iNeuron")
print(set1)
```

```
abc@1d5d635f4567:~/workspace$ /bin/python /config/workspace/main.py
{'iNeuron'}
abc@1d5d635f4567:~/workspace$ 
```

48. Try to add multiple values using add() function.



```python
set1 = set()
set1.add("iNeuron")
set1.add(3)
set1.add(3)
set1.add(23.45)
print(set1)
```

```
abc@1d5d635f4567:~/workspace$ /bin/python /config/workspace/main.py
{'iNeuron'}
abc@1d5d635f4567:~/workspace$ /bin/python /config/workspace/main.py
{3, 'iNeuron', 23.45}
abc@1d5d635f4567:~/workspace$ /bin/python /config/workspace/main.py
{3, 'iNeuron', 23.45}
abc@1d5d635f4567:~/workspace$ 
```

49. How is update() different from add()?

In add function we can add only one element but in the update function we can add multiple elements

50. What is clear() in sets?

clear() is used to clear all the elements from a list . It does not take any parameter and doesn't return any value

51. What is frozen set?

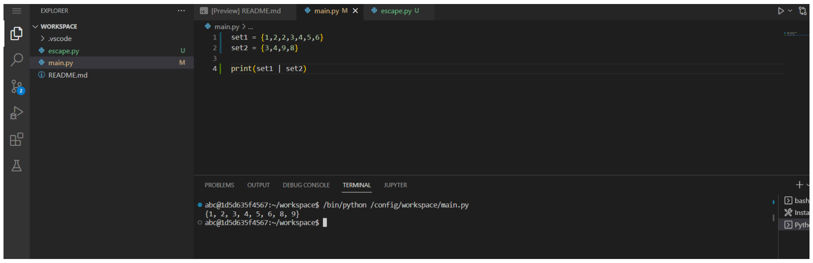
Frozen sets is used in python , frozen sets are immutable

52. How is frozen set different from set?

Set is mutable function and the frozen set is immutable function

53. What is union() in sets? Explain via code.

Union is used to combine two differents sets if any duplicate values in set it will produced only distinct values

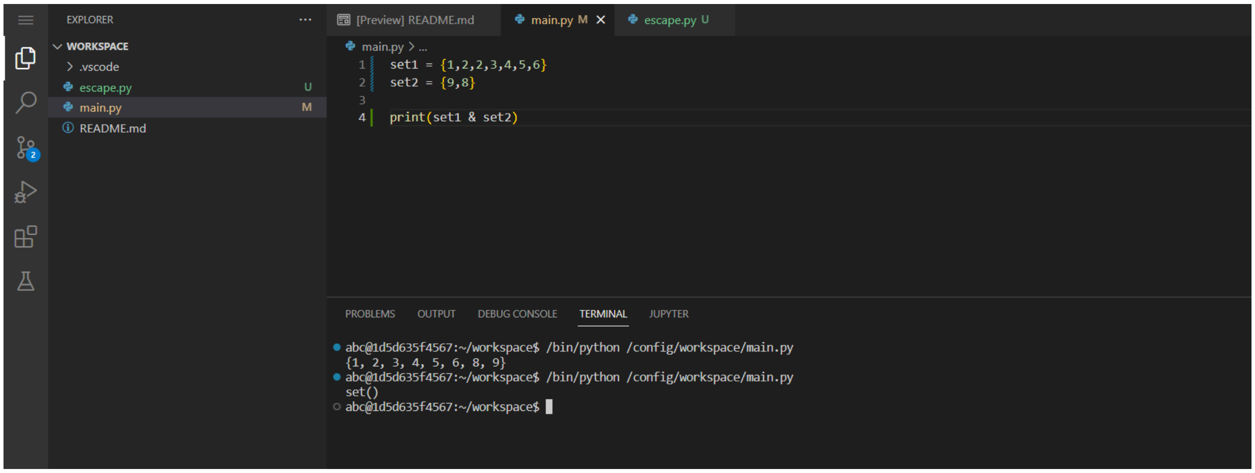


```python
set1 = {1,2,2,3,4,5,6}
set2 = {3,4,9,8}

print(set1 | set2)
```

```
abc@1d5d635f4567:~/workspace$ /bin/python /config/workspace/main.py
{1, 2, 3, 4, 5, 6, 8, 9}
abc@1d5d635f4567:~/workspace$
```

54. What is intersection() in sets? Explain via code.

Intersection sets are used to produce common values from the two different set . If no common value in the both set it will produced empty set



```python
set1 = {1,2,2,3,4,5,6}
set2 = {9,8}

print(set1 & set2)
```

```
abc@1d5d635f4567:~/workspace$ /bin/python /config/workspace/main.py
{1, 2, 3, 4, 5, 6, 8, 9}
abc@1d5d635f4567:~/workspace$ /bin/python /config/workspace/main.py
set()
abc@1d5d635f4567:~/workspace$
```

55. What is dictionary in Python?

  Dictionary will acts as key of data structure ,A dictionary consist of key value pairs , Each key mapped with associated value

56. How is dictionary different from all other data structures.

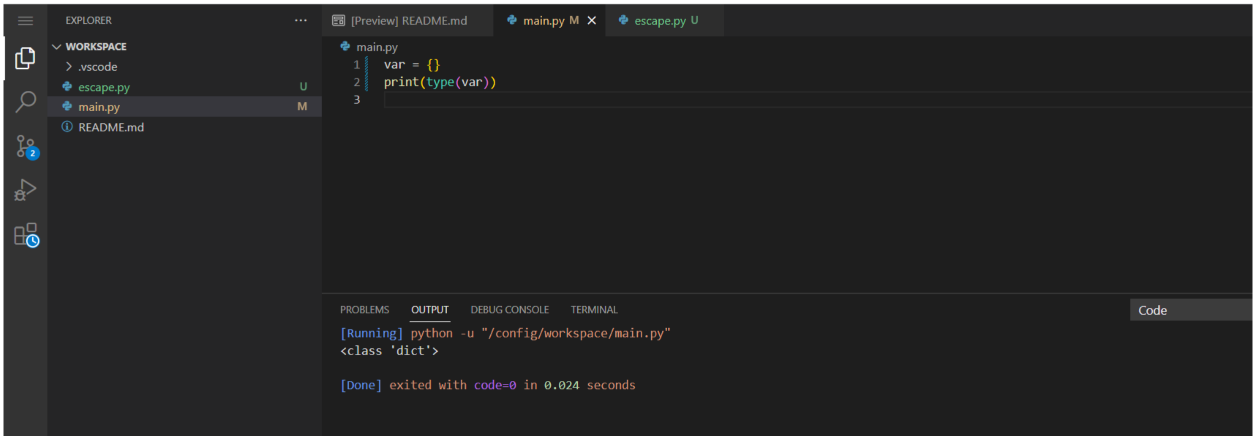
The dictionary stores many keys and each key is associated with a single value that is different from all other data structures.

57. How can we delare a dictionary in Python?

We can declare the dictionary within the curly basis separated by comma

58. What will the output of the following?

```
var = {}
print(type(var))
```



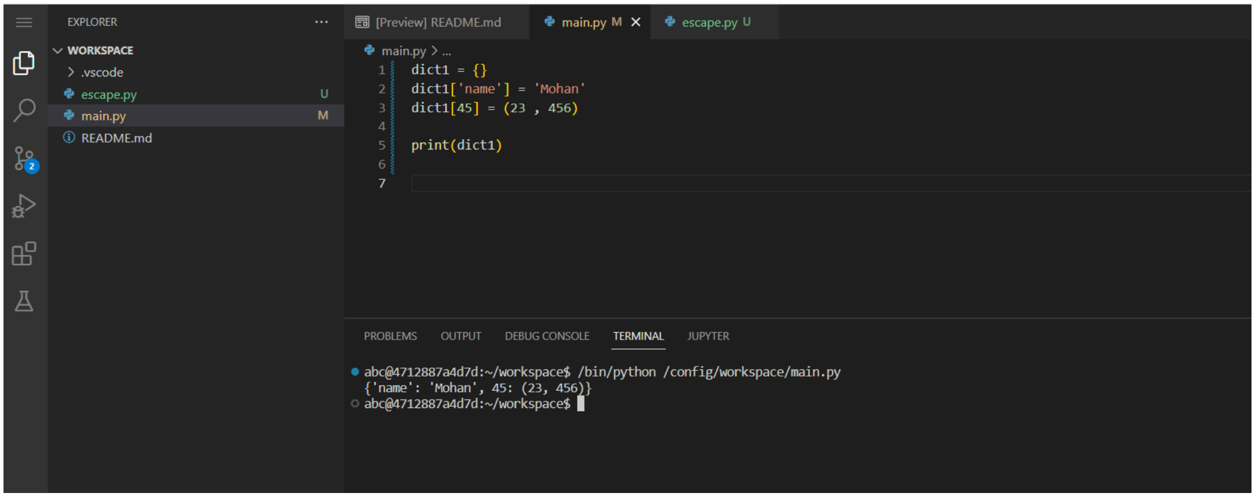
```
var = {}
print(type(var))
```

```
[Running] python -u "/config/workspace/main.py"
<class 'dict'>

[Done] exited with code=0 in 0.024 seconds
```

59. How can we add an element in a dictionary?

In dictionary by inserting new key value in it and assigning particular value to it

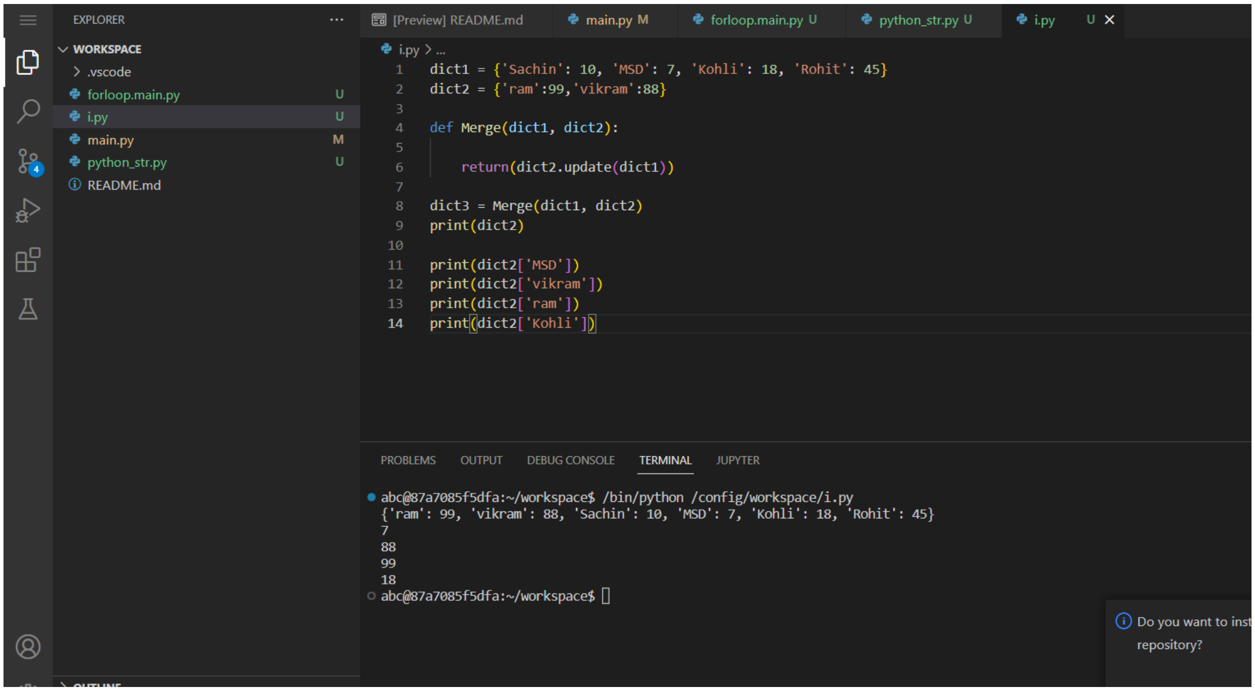
60. Create a dictionary and access all the values in that dictionary.



```
dict1 = {}
dict1['name'] = 'Mohan'
dict1[45] = (23 , 456)

print(dict1)

```

```
abc@4712887a4d7d:~/workspace$ /bin/python /config/workspace/main.py
{'name': 'Mohan', 45: (23, 456)}
abc@4712887a4d7d:~/workspace$ 
```

61. Create a nested dictionary and access all the elements in the inner dictionary.



```python
dict1 = {'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}
dict2 = {'ram':99,'vikram':88}

def Merge(dict1, dict2):

    return(dict2.update(dict1))

dict3 = Merge(dict1, dict2)
print(dict2)

print(dict2['MSD'])
print(dict2['vikram'])
print(dict2['ram'])
print(dict2['Kohli'])
```

```
abc@87a7085f5dfa:~/workspace$ /bin/python /config/workspace/i.py
{'ram': 99, 'vikram': 88, 'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}
7
88
99
18
abc@87a7085f5dfa:~/workspace$ 
```

62. What is the use of get() function?

Get() function is used to retrieve value from python

63. What is the use of items() function?

Items() function is used to return the list with all the dictionary keys with values

64. What is the use of pop() function?

Pop() is used to remove elements from specified position

65. What is the use of popitems() function?

Popitems() is remove last inserted key value pairs from dictionary and return its as tuple

66. What is the use of keys() function?

Keys() function return the view object , the view object contains all keys in dictionary as list

67. What is the use of values() function?

Values() function return the view object. The view contains all values in dictionary as list

68. What are loops in Python?

Loops are means repeating specific code under the condition are satisfied .There are three loops in python for loop , whileloop ,nested loop

69. How many type of loop are there in Python?

For loop , while loop , nested loop

70. What is the difference between for and while loops?

In for loop we already know the number of iteration but in while loop we don't know the iteration

71. What is the use of continue statement?

Continue is used to end the current iteration in for loop / while loop and continues to the next iteration

72. What is the use of break statement?

Break is used to terminate the entire loop iteration

73. What is the use of pass statement?

Pass statement is useful when you don't write the implementation of function but we want to implement in the future code .when pass statement is used in code nothing will happen it pass the current code .

74. What is the use of range() function?

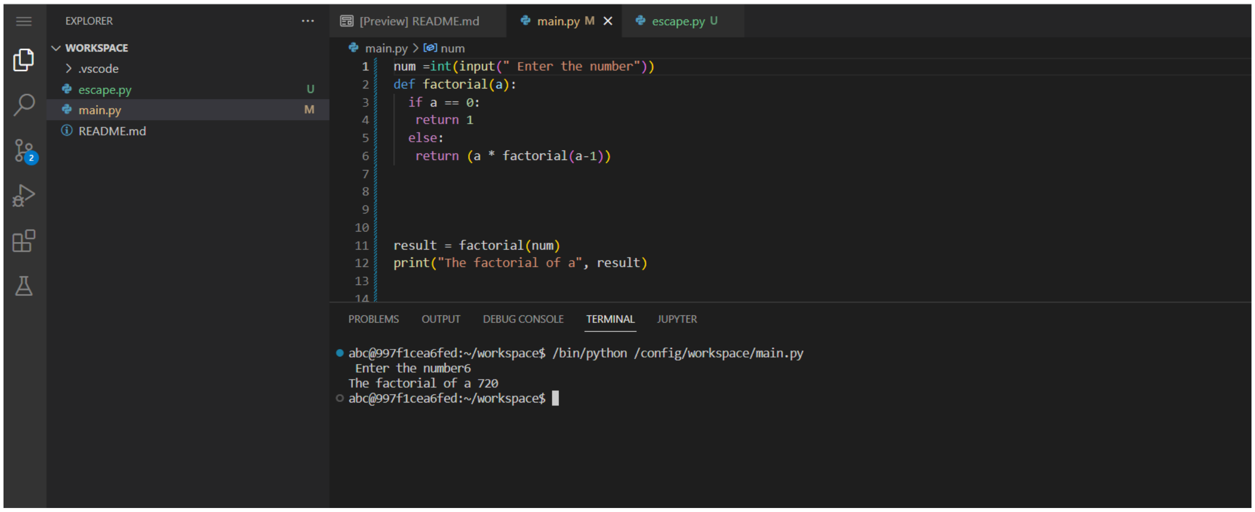
Range() function is to return the sequence of numbers with specified value .It starts from zero and increments by 1 and ends with specified value.

75. How can you loop over a dictionary?

We can loop over a dictionary by using for loop it will return the key of dictionary and values also be return by using index

Coding problems

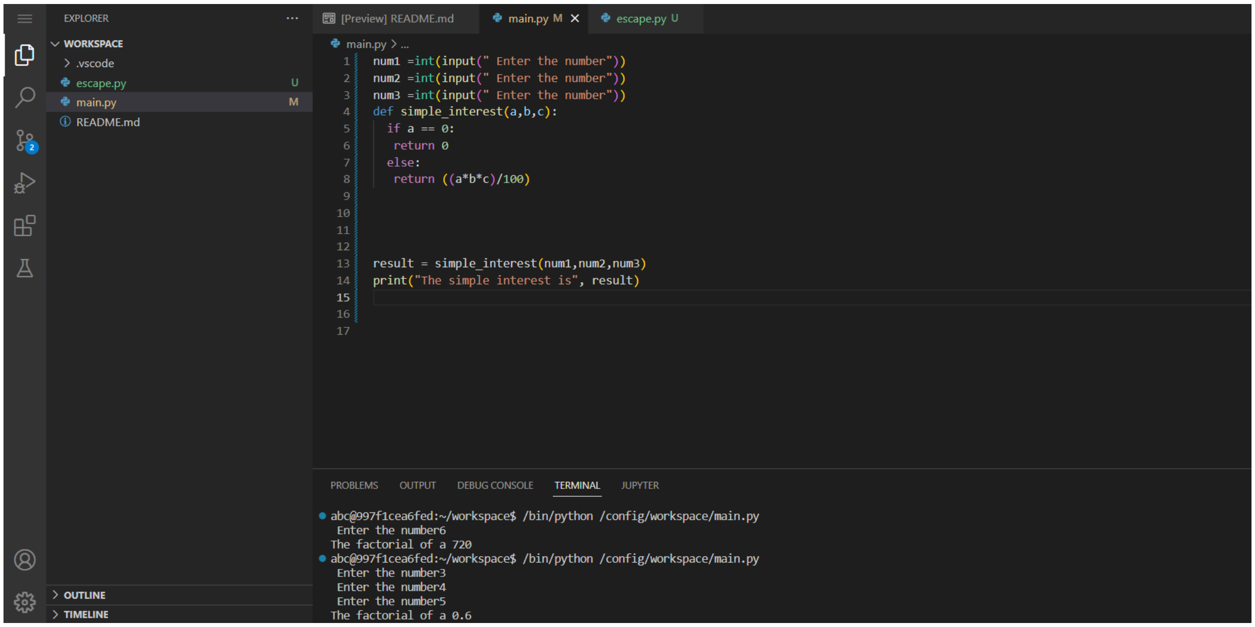
76. Write a Python program to find the factorial of a given number.



```python
num =int(input(" Enter the number"))
def factorial(a):
  if a == 0:
   return 1
  else:
   return (a * factorial(a-1))



result = factorial(num)
print("The factorial of a", result)
```

```
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
 Enter the number6
The factorial of a 720
abc@997f1cea6fed:~/workspace$ 
```

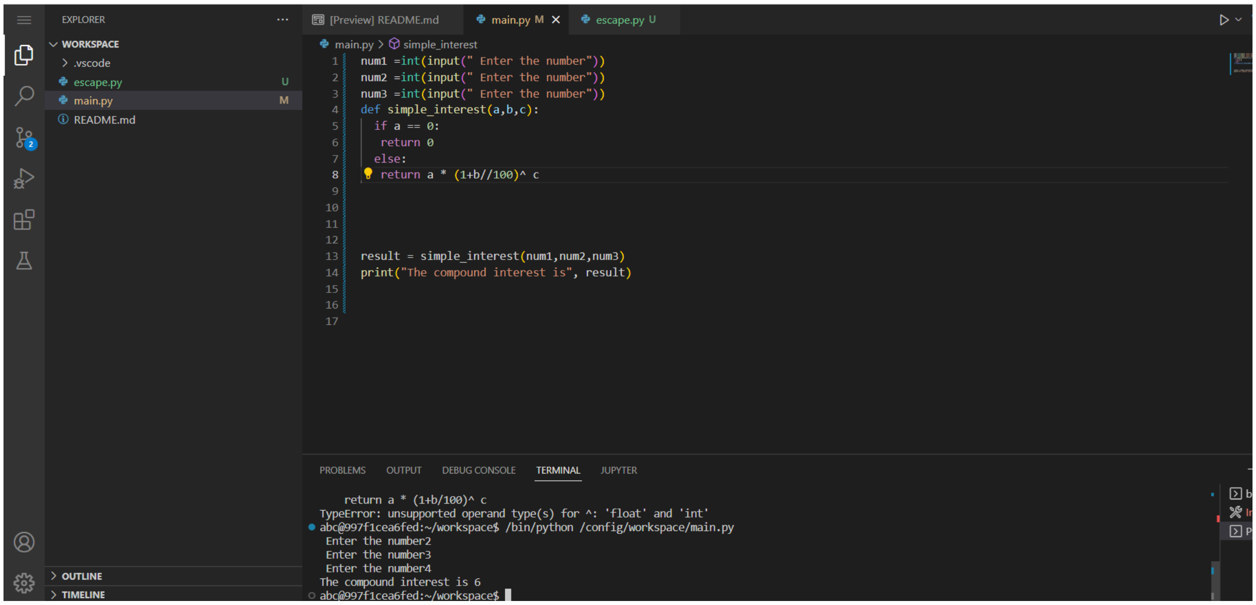
77. Write a Python program to calculate the simple interest. Formula to calculate simple interest is SI = (P*R*T)/100



```python
num1 =int(input(" Enter the number"))
num2 =int(input(" Enter the number"))
num3 =int(input(" Enter the number"))
def simple_interest(a,b,c):
  if a == 0:
   return 0
  else:
   return ((a*b*c)/100)




result = simple_interest(num1,num2,num3)
print("The simple interest is", result)
```

```
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
 Enter the number6
The factorial of a 720
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
 Enter the number3
 Enter the number4
 Enter the number5
The factorial of a 0.6
```

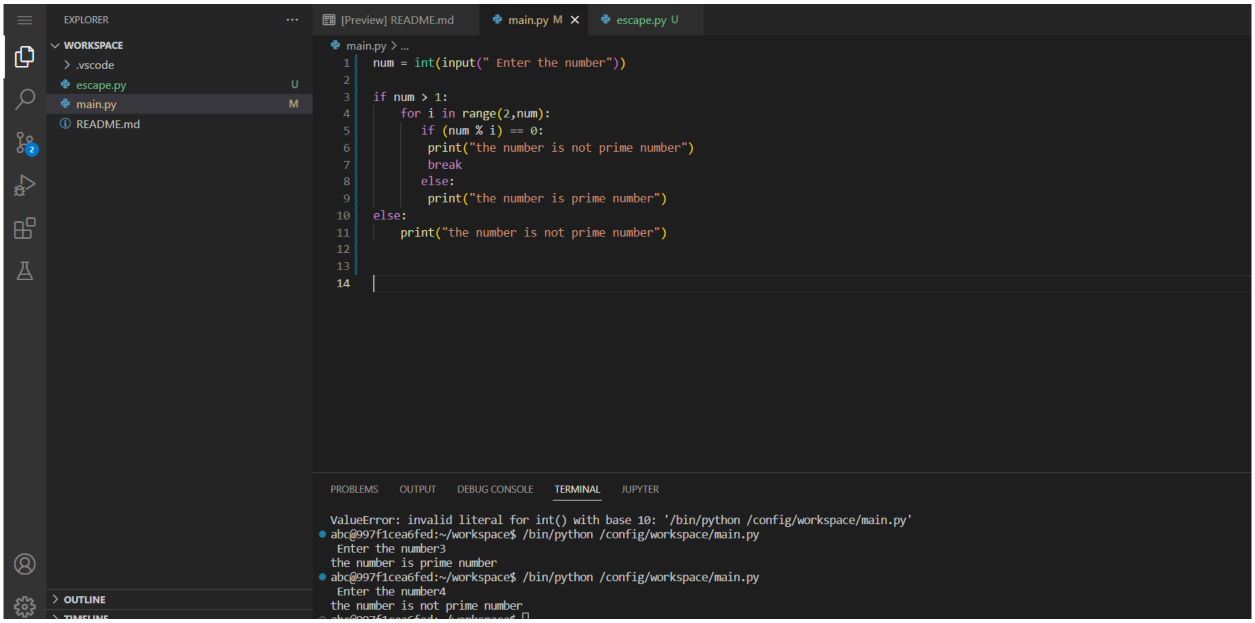
78. Write a Python program to calculate the compound interest. Formula of compound interest is A = P(1+ R/100)^t.



```python
num1 =int(input(" Enter the number"))
num2 =int(input(" Enter the number"))
num3 =int(input(" Enter the number"))
def simple_interest(a,b,c):
  if a == 0:
   return 0
  else:
   return a * (1+b//100)^ c




result = simple_interest(num1,num2,num3)
print("The compound interest is", result)
```

```
    return a * (1+b/100)^ c
TypeError: unsupported operand type(s) for ^: 'float' and 'int'
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
 Enter the number2
 Enter the number3
 Enter the number4
The compound interest is 6
abc@997f1cea6fed:~/workspace$
```

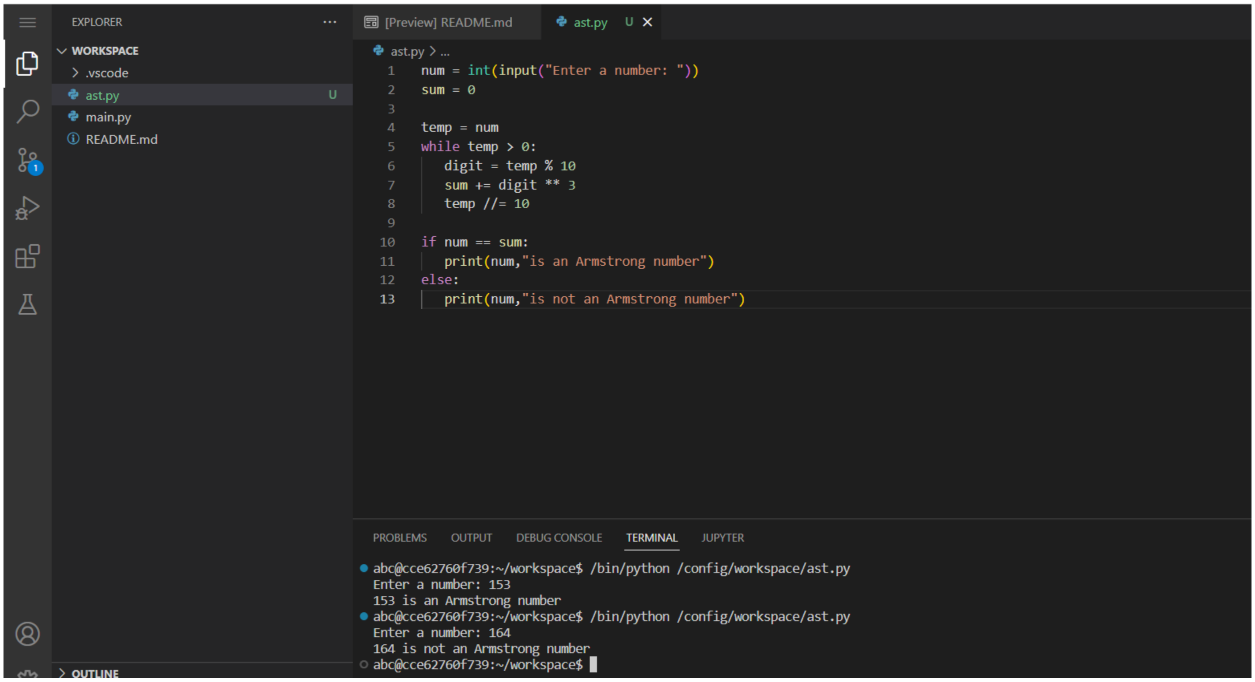
79. Write a Python program to check if a number is prime or not.



```python
num = int(input(" Enter the number"))

if num > 1:
    for i in range(2,num):
       if (num % i) == 0:
        print("the number is not prime number")
        break
       else:
        print("the number is prime number")
else:
    print("the number is not prime number")


```

```
ValueError: invalid literal for int() with base 10: '/bin/python /config/workspace/main.py'
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
 Enter the number3
the number is prime number
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
 Enter the number4
the number is not prime number
abc@997f1cea6fed:~/workspace$
```

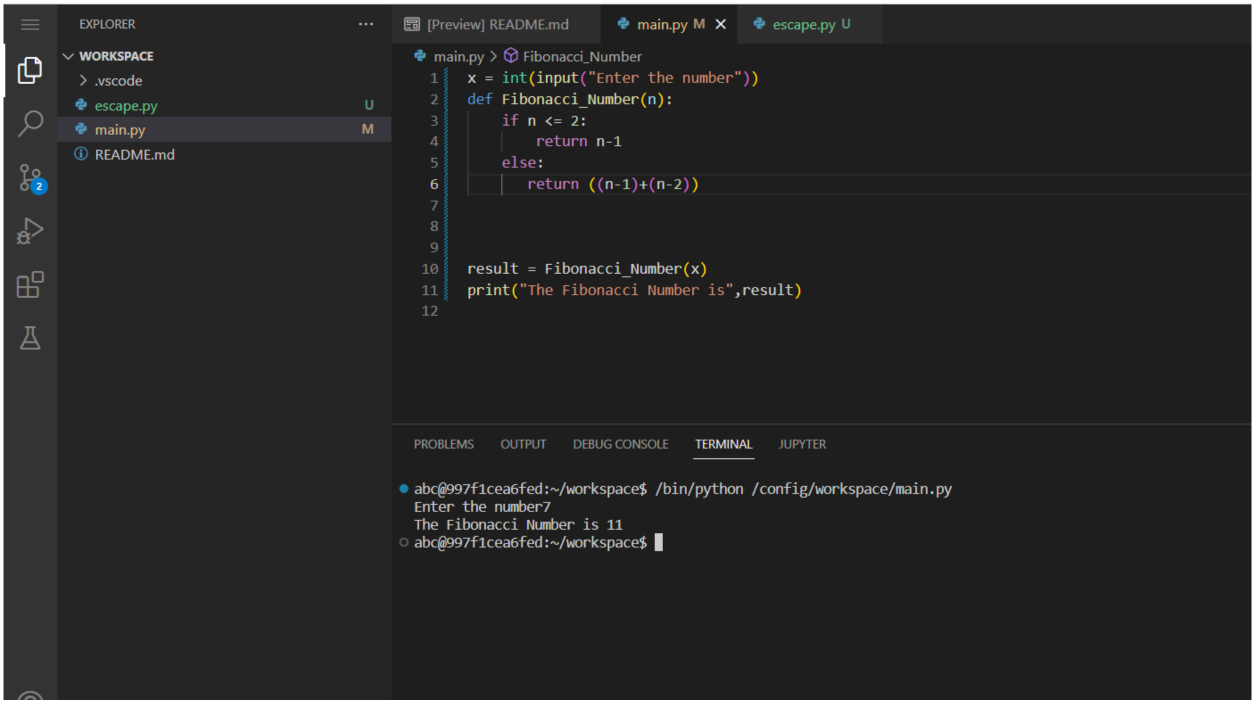
80. Write a Python program to check Armstrong Number.



```python
num = int(input("Enter a number: "))
sum = 0

temp = num
while temp > 0:
    digit = temp % 10
    sum += digit ** 3
    temp //= 10

if num == sum:
    print(num,"is an Armstrong number")
else:
    print(num,"is not an Armstrong number")
```

```
abc@cce62760f739:~/workspace$ /bin/python /config/workspace/ast.py
Enter a number: 153
153 is an Armstrong number
abc@cce62760f739:~/workspace$ /bin/python /config/workspace/ast.py
Enter a number: 164
164 is not an Armstrong number
abc@cce62760f739:~/workspace$ 
```

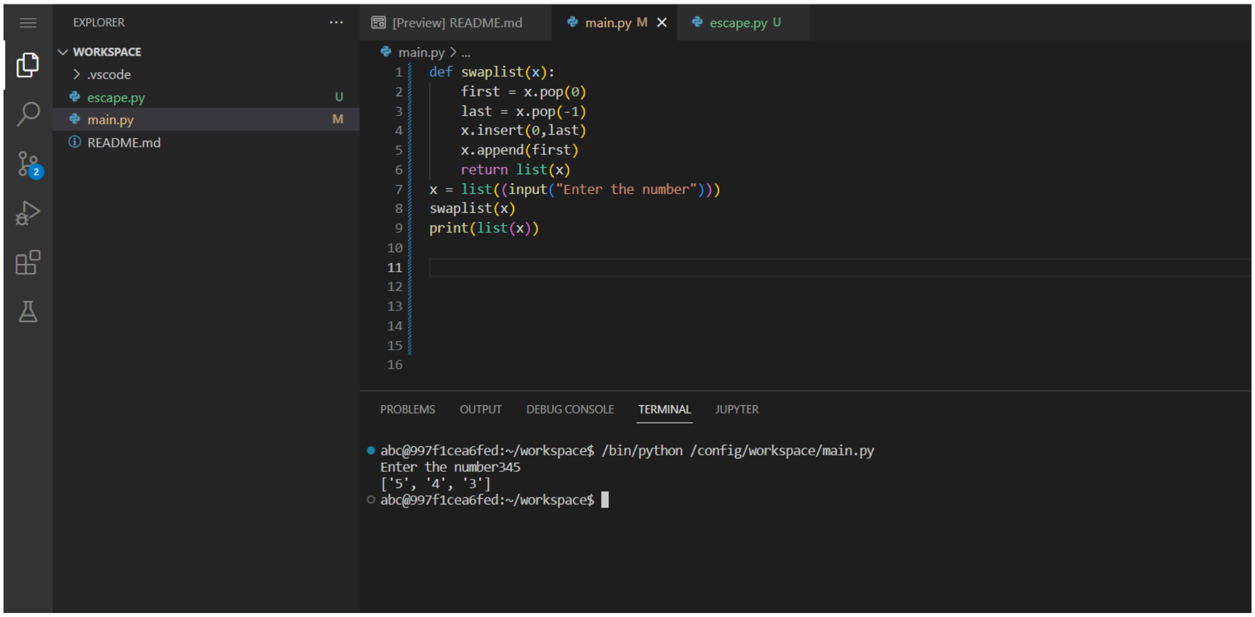
81. Write a Python program to find the n-th Fibonacci Number.



```python
x = int(input("Enter the number"))
def Fibonacci_Number(n):
    if n <= 2:
        return n-1
    else:
        return ((n-1)+(n-2))



result = Fibonacci_Number(x)
print("The Fibonacci Number is",result)

```

```
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
Enter the number7
The Fibonacci Number is 11
abc@997f1cea6fed:~/workspace$ 
```

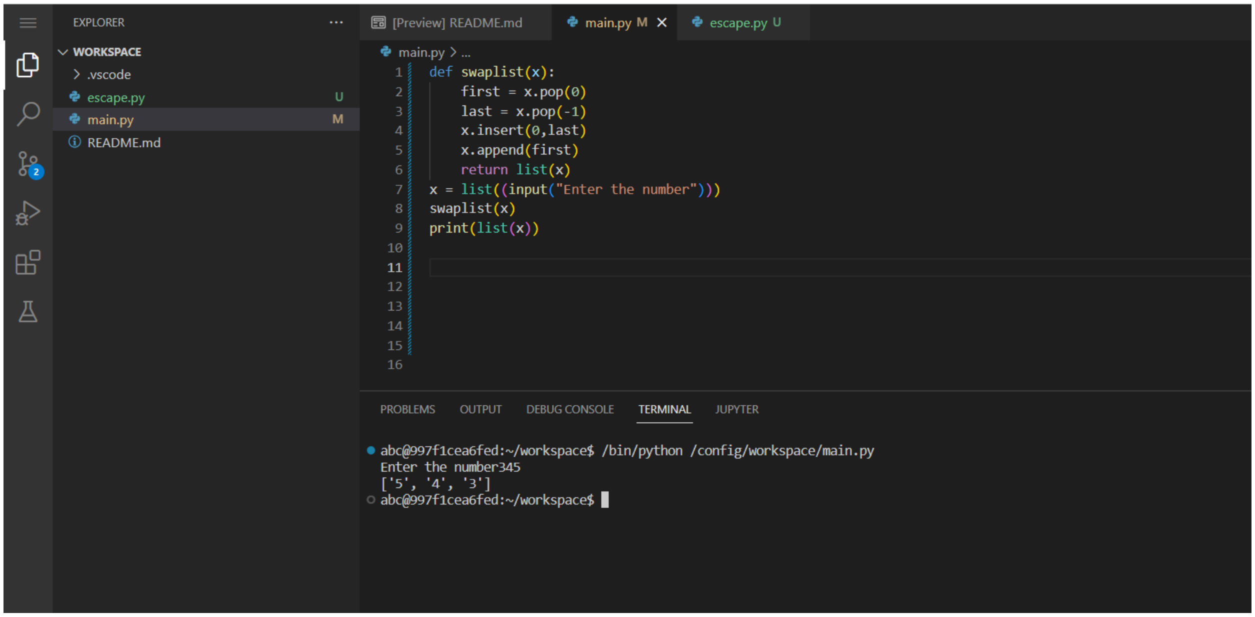
82. Write a Python program to interchange the first and last element in a list.



```python
def swaplist(x):
    first = x.pop(0)
    last = x.pop(-1)
    x.insert(0,last)
    x.append(first)
    return list(x)
x = list((input("Enter the number")))
swaplist(x)
print(list(x))
```

```
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
Enter the number345
['5', '4', '3']
abc@997f1cea6fed:~/workspace$
```

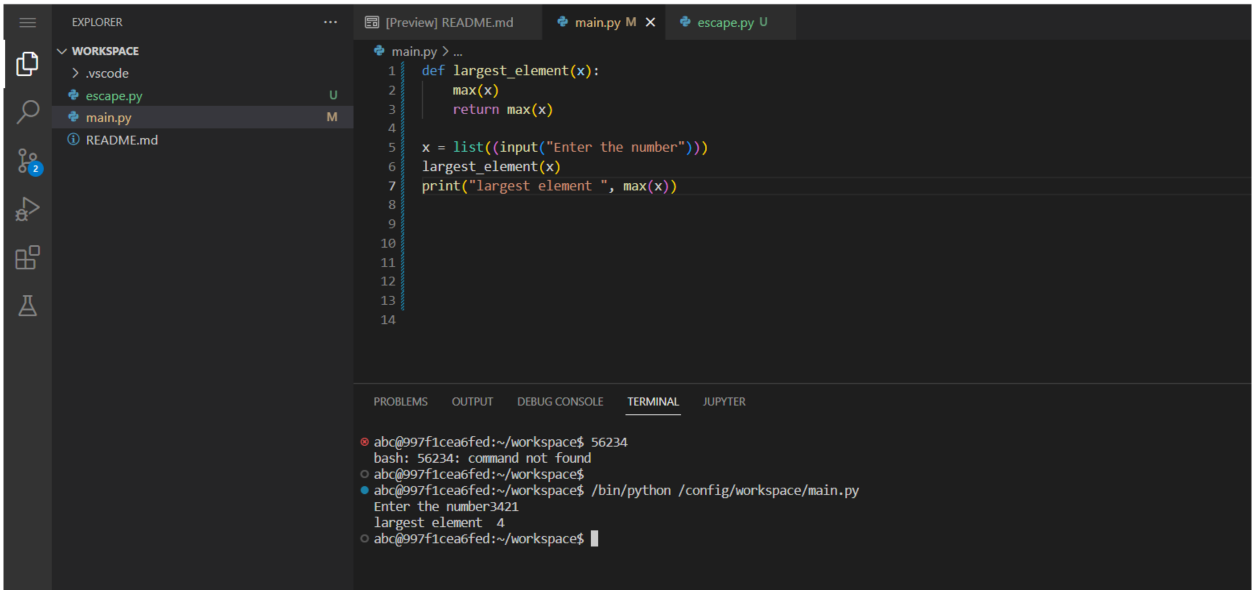
83. Write a Python program to swap two elements in a list.



```python
def swaplist(x):
    first = x.pop(0)
    last = x.pop(-1)
    x.insert(0,last)
    x.append(first)
    return list(x)
x = list((input("Enter the number")))
swaplist(x)
print(list(x))
```

```
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
Enter the number345
['5', '4', '3']
abc@997f1cea6fed:~/workspace$
```

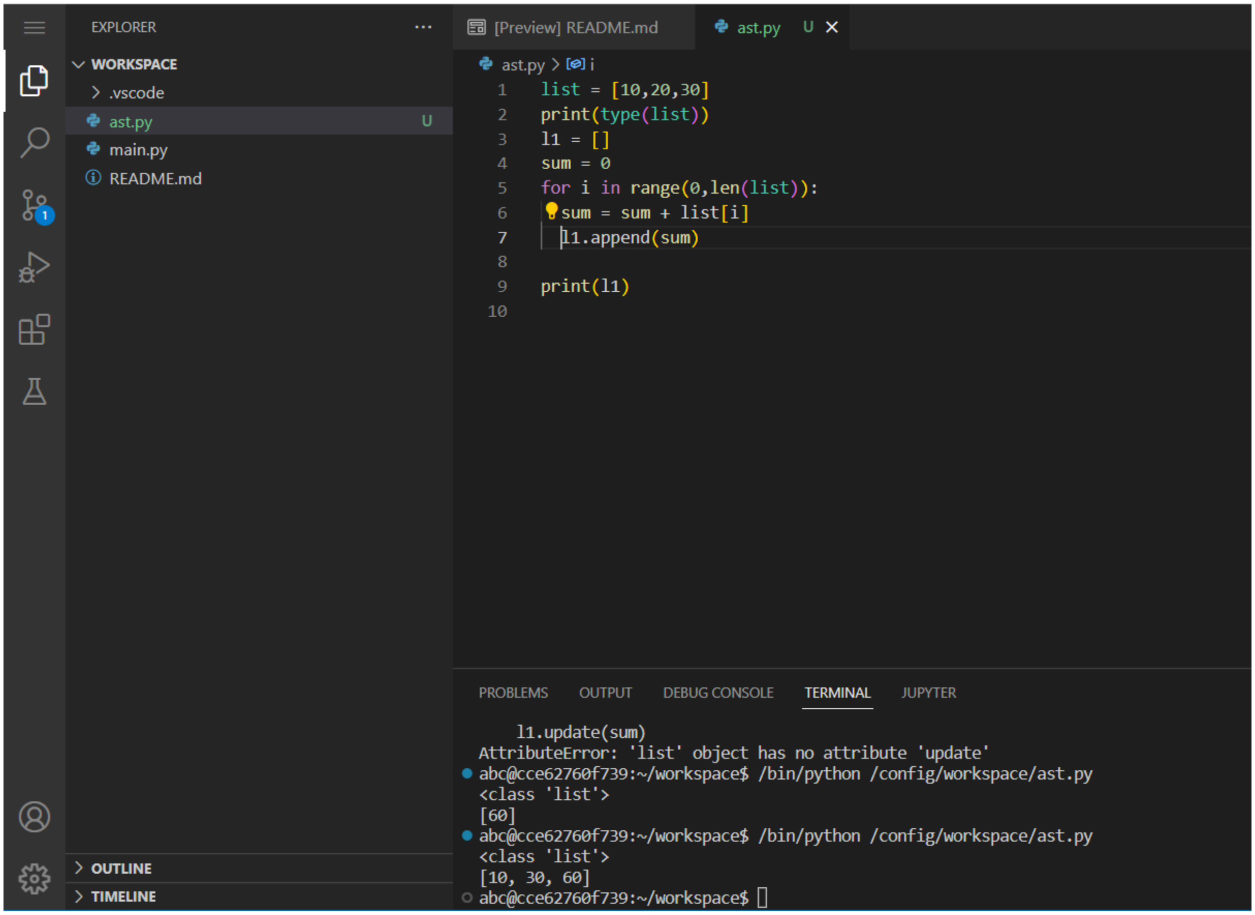
84. Write a Python program to find N largest element from a list.



```python
def largest_element(x):
    max(x)
    return max(x)

x = list((input("Enter the number")))
largest_element(x)
print("largest element ", max(x))
```

```
abc@997f1cea6fed:~/workspace$ 56234
bash: 56234: command not found
abc@997f1cea6fed:~/workspace$
abc@997f1cea6fed:~/workspace$ /bin/python /config/workspace/main.py
Enter the number3421
largest element  4
abc@997f1cea6fed:~/workspace$
```

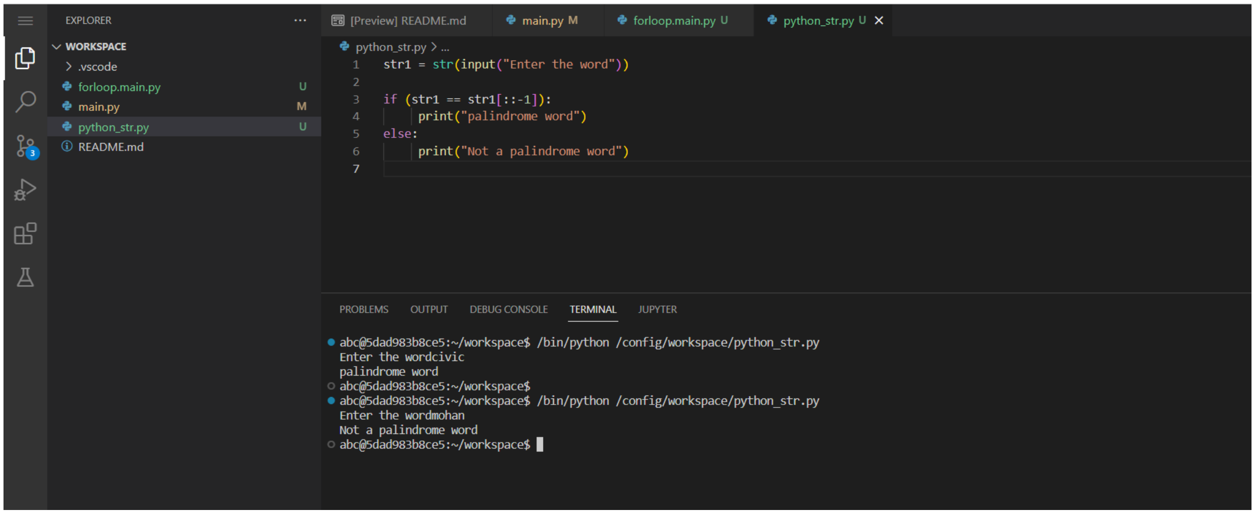
85. Write a Python program to find cumulative sum of a list.



```python
list = [10,20,30]
print(type(list))
l1 = []
sum = 0
for i in range(0,len(list)):
    sum = sum + list[i]
    l1.append(sum)

print(l1)
```

```
    l1.update(sum)
AttributeError: 'list' object has no attribute 'update'
abc@cce62760f739:~/workspace$ /bin/python /config/workspace/ast.py
<class 'list'>
[60]
abc@cce62760f739:~/workspace$ /bin/python /config/workspace/ast.py
<class 'list'>
[10, 30, 60]
abc@cce62760f739:~/workspace$
```

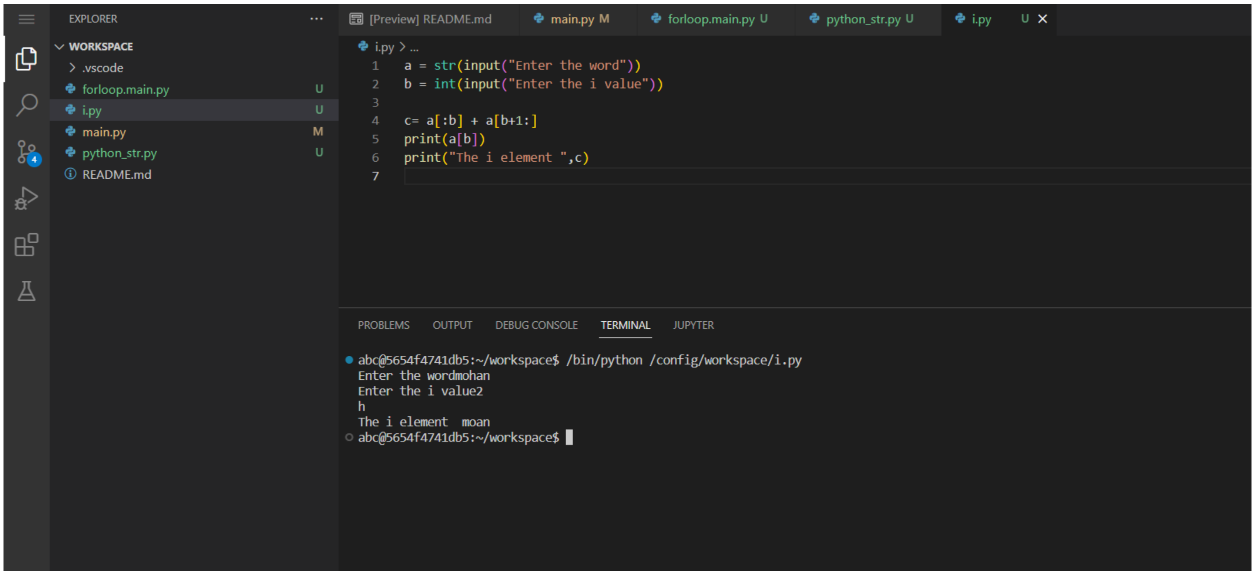
86. Write a Python program to check if a string is palindrome or not.



```python
str1 = str(input("Enter the word"))

if (str1 == str1[::-1]):
    print("palindrome word")
else:
    print("Not a palindrome word")
```

```
abc@5dad983b8ce5:~/workspace$ /bin/python /config/workspace/python_str.py
Enter the wordcivic
palindrome word
abc@5dad983b8ce5:~/workspace$
abc@5dad983b8ce5:~/workspace$ /bin/python /config/workspace/python_str.py
Enter the wordmohan
Not a palindrome word
abc@5dad983b8ce5:~/workspace$
```

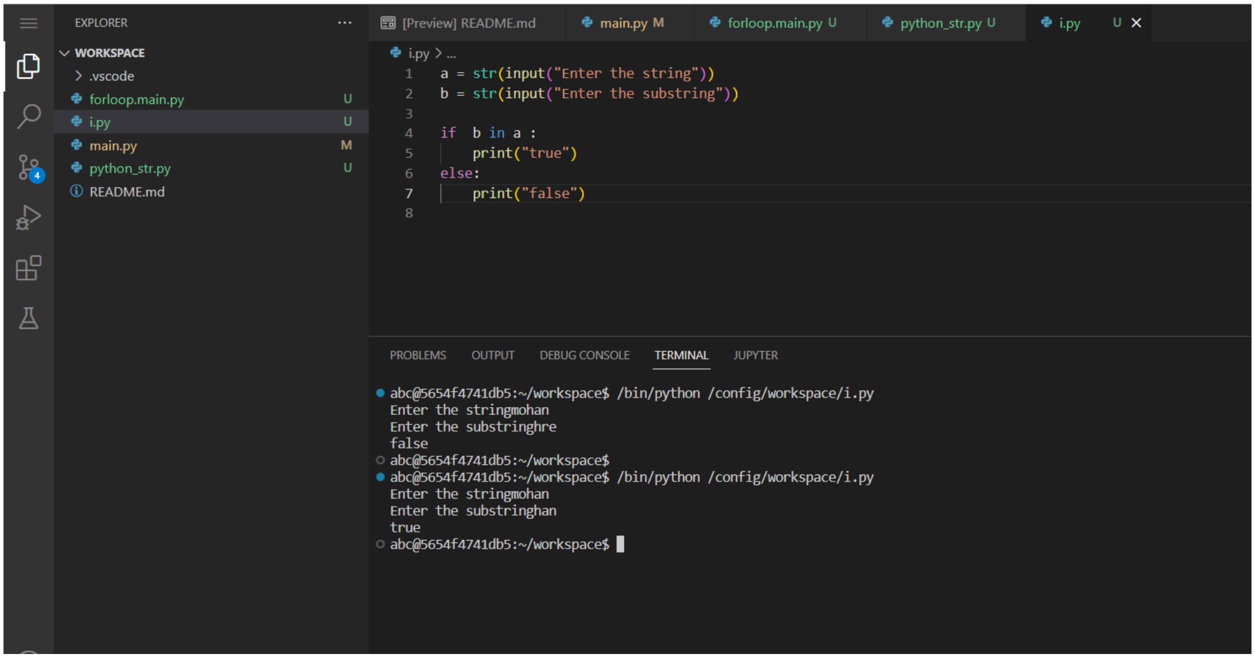
87. Write a Python program to remove i'th element from a string.



```python
a = str(input("Enter the word"))
b = int(input("Enter the i value"))

c= a[:b] + a[b+1:]
print(a[b])
print("The i element ",c)
```

```
abc@5654f4741db5:~/workspace$ /bin/python /config/workspace/i.py
Enter the wordmohan
Enter the i value2
h
The i element  moan
abc@5654f4741db5:~/workspace$
```

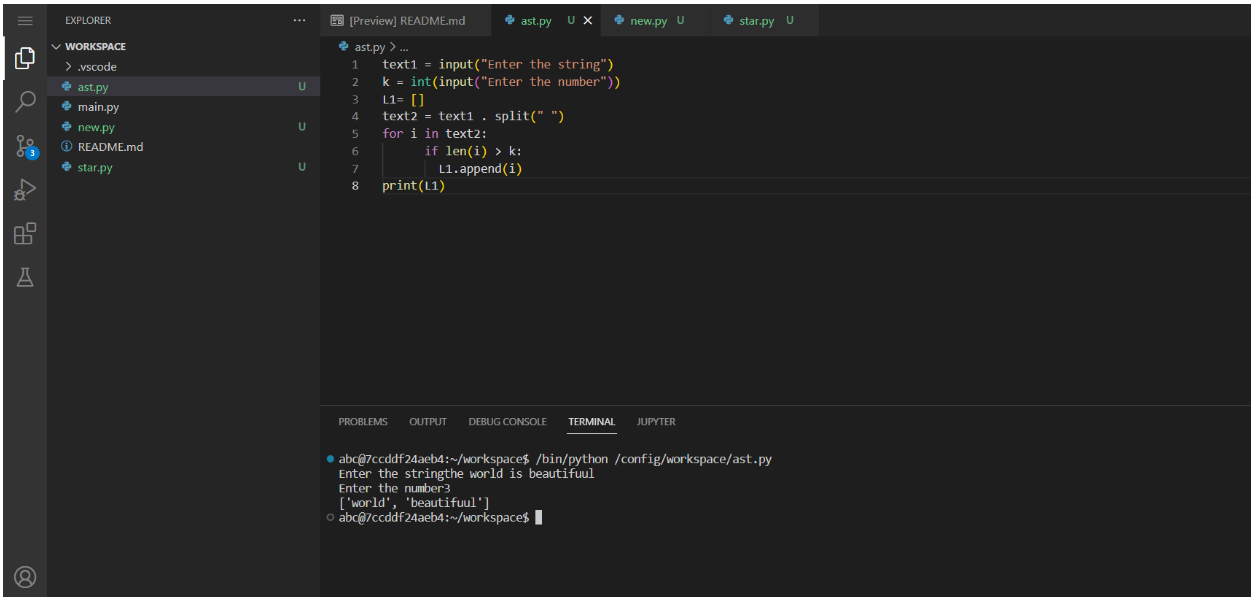
88. Write a Python program to check if a substring is present in a given string.



```python
a = str(input("Enter the string"))
b = str(input("Enter the substring"))

if  b in a :
    print("true")
else:
    print("false")
```

```
abc@5654f4741db5:~/workspace$ /bin/python /config/workspace/i.py
Enter the stringmohan
Enter the substringhre
false
abc@5654f4741db5:~/workspace$
abc@5654f4741db5:~/workspace$ /bin/python /config/workspace/i.py
Enter the stringmohan
Enter the substringhan
true
abc@5654f4741db5:~/workspace$
```

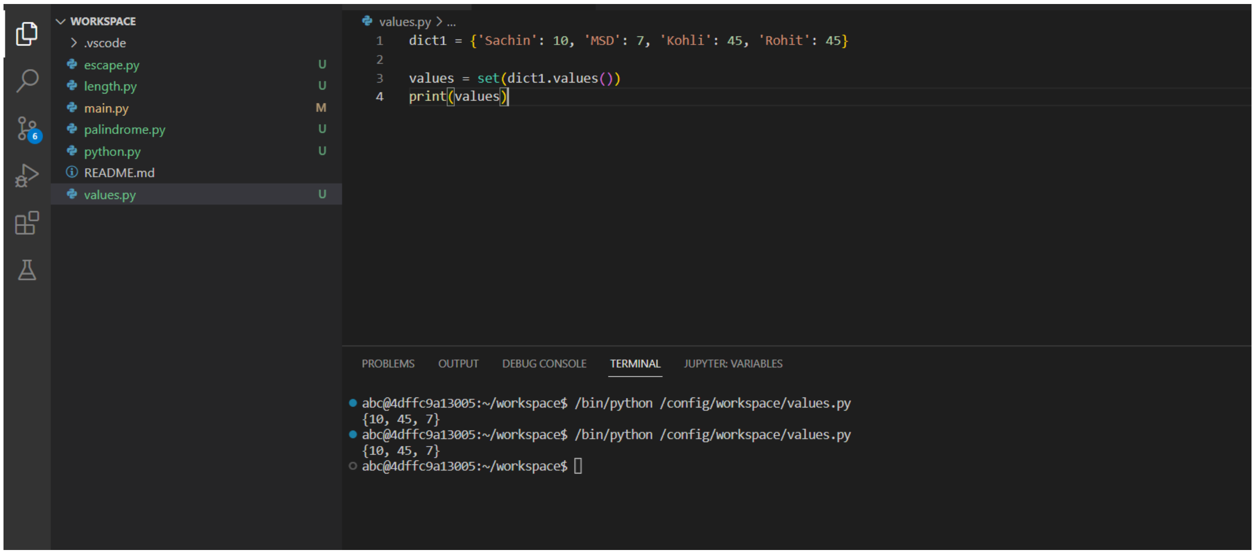
Q89. Write a Python program to find words which are greater than given length k.



```python
text1 = input("Enter the string")
k = int(input("Enter the number"))
L1= []
text2 = text1 . split(" ")
for i in text2:
        if len(i) > k:
          L1.append(i)
print(L1)
```

```
abc@7ccddf24aeb4:~/workspace$ /bin/python /config/workspace/ast.py
Enter the stringthe world is beautifuul
Enter the number3
['world', 'beautifuul']
abc@7ccddf24aeb4:~/workspace$
```

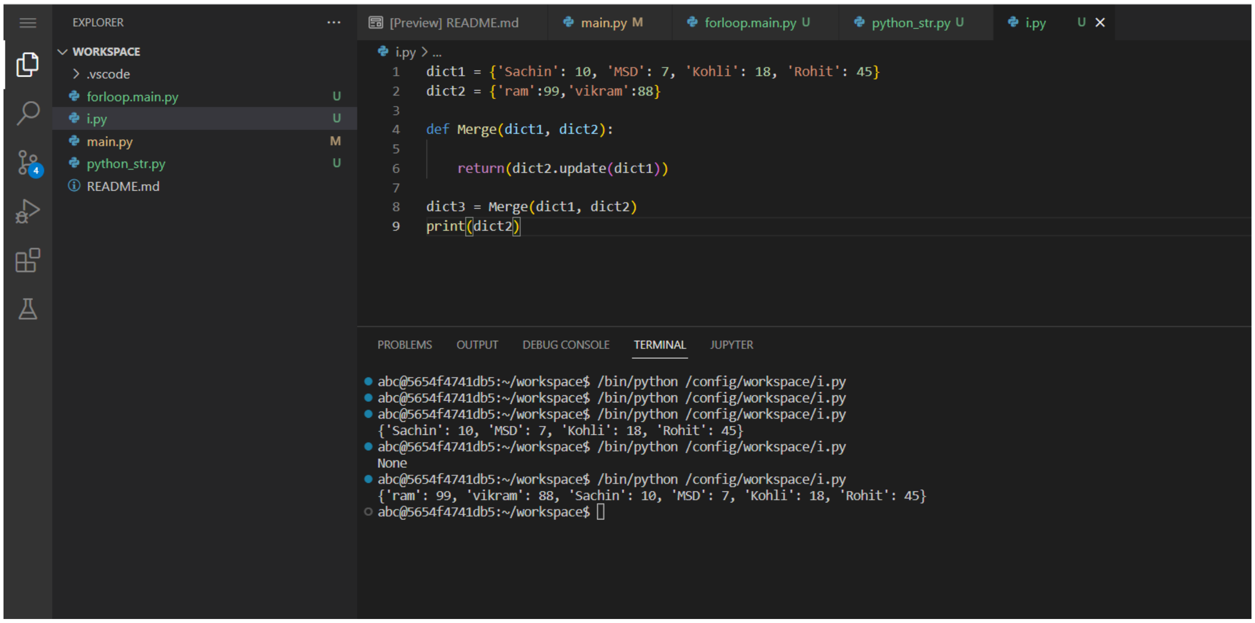
Q90. Write a Python program to extract unquire dictionary values.



```python
dict1 = {'Sachin': 10, 'MSD': 7, 'Kohli': 45, 'Rohit': 45}

values = set(dict1.values())
print(values)
```

```
abc@4dffc9a13005:~/workspace$ /bin/python /config/workspace/values.py
{10, 45, 7}
abc@4dffc9a13005:~/workspace$ /bin/python /config/workspace/values.py
{10, 45, 7}
abc@4dffc9a13005:~/workspace$
```

Q91. **Write a Python program to merge two dictionary.**

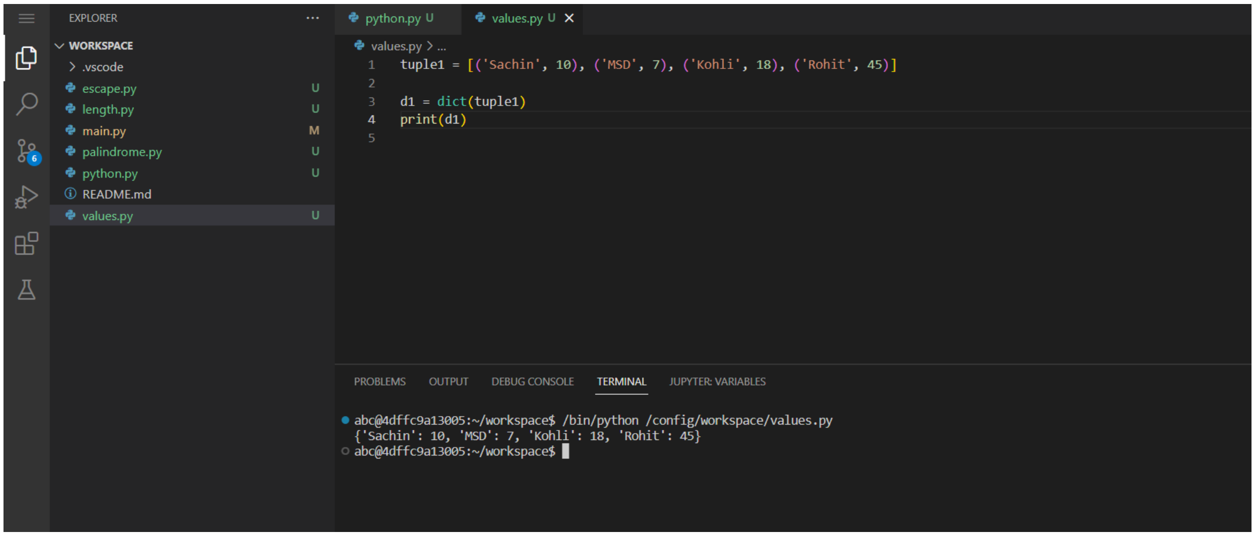


```python
dict1 = {'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}
dict2 = {'ram':99,'vikram':88}

def Merge(dict1, dict2):

    return(dict2.update(dict1))

dict3 = Merge(dict1, dict2)
print(dict2)
```

```
abc@5654f4741db5:~/workspace$ /bin/python /config/workspace/i.py
abc@5654f4741db5:~/workspace$ /bin/python /config/workspace/i.py
abc@5654f4741db5:~/workspace$ /bin/python /config/workspace/i.py
{'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}
abc@5654f4741db5:~/workspace$ /bin/python /config/workspace/i.py
None
abc@5654f4741db5:~/workspace$ /bin/python /config/workspace/i.py
{'ram': 99, 'vikram': 88, 'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}
abc@5654f4741db5:~/workspace$
```

92. Write a Python program to convert a list of tuples into dictionary.

```
Input : [('Sachin', 10), ('MSD', 7), ('Kohli', 18), ('Rohit', 45)]
Output : {'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}
```

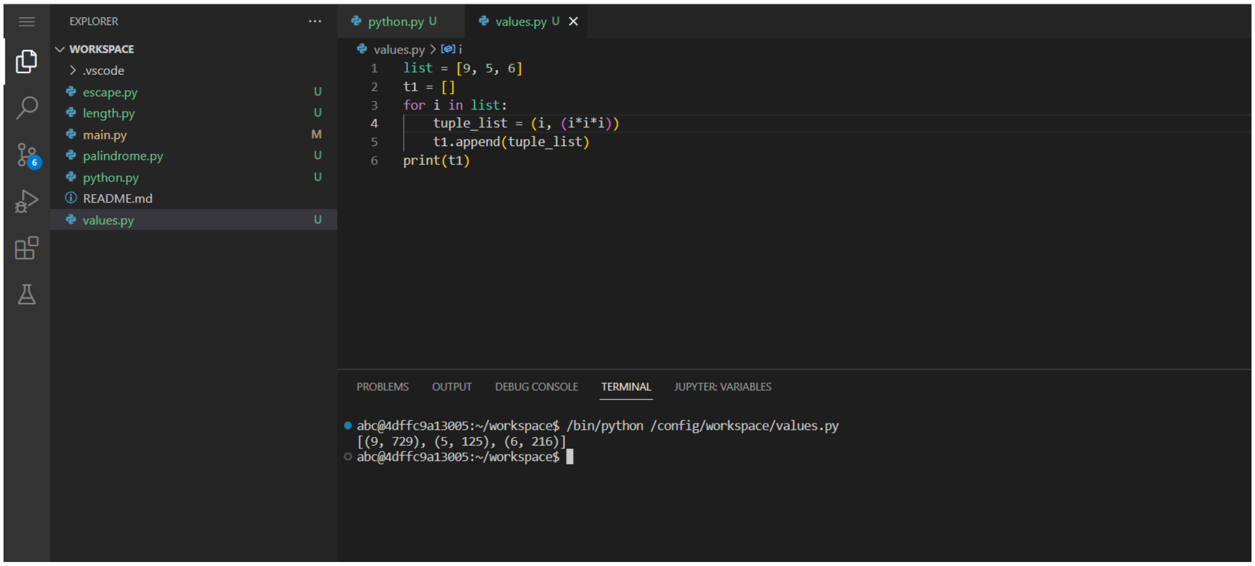


```python
tuple1 = [('Sachin', 10), ('MSD', 7), ('Kohli', 18), ('Rohit', 45)]

d1 = dict(tuple1)
print(d1)
```

```
abc@4dffc9a13005:~/workspace$ /bin/python /config/workspace/values.py
{'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}
abc@4dffc9a13005:~/workspace$
```

93. Write a Python program to create a list of tuples from given list having number and its cube in each tuple.

```
Input: list = [9, 5, 6]
Output: [(9, 729), (5, 125), (6, 216)]
```

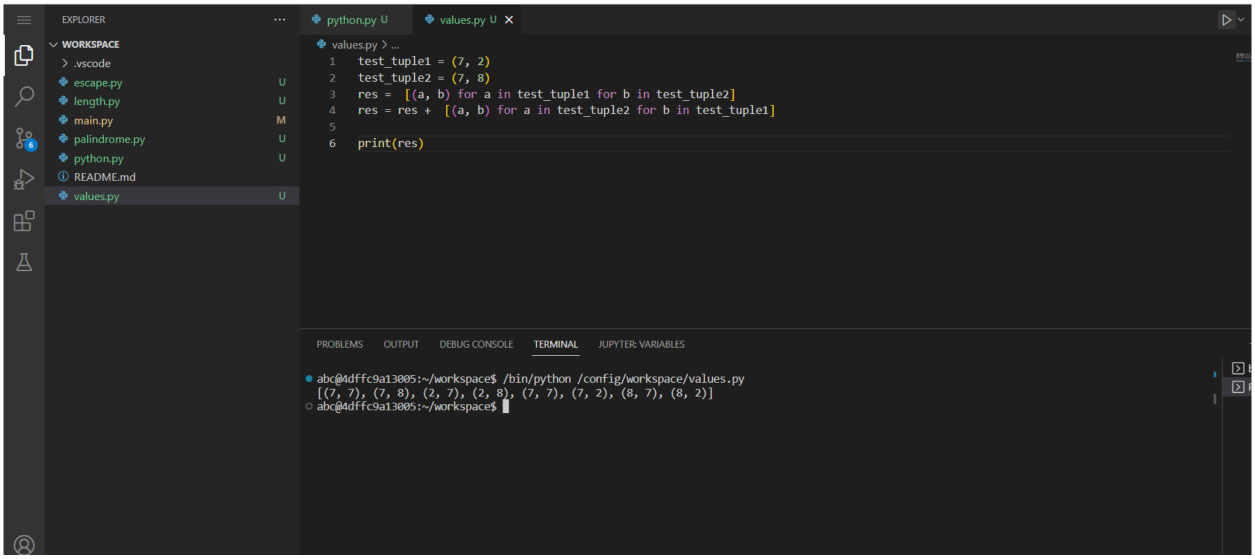


```python
list = [9, 5, 6]
t1 = []
for i in list:
    tuple_list = (i, (i*i*i))
    t1.append(tuple_list)
print(t1)
```

```
abc@4dffc9a13005:~/workspace$ /bin/python /config/workspace/values.py
[(9, 729), (5, 125), (6, 216)]
abc@4dffc9a13005:~/workspace$
```

94. Write a Python program to get all combinations of 2 tuples.

```
Input : test_tuple1 = (7, 2), test_tuple2 = (7, 8)
Output : [(7, 7), (7, 8), (2, 7), (2, 8), (7, 7), (7, 2), (8, 7), (8, 2)]
```

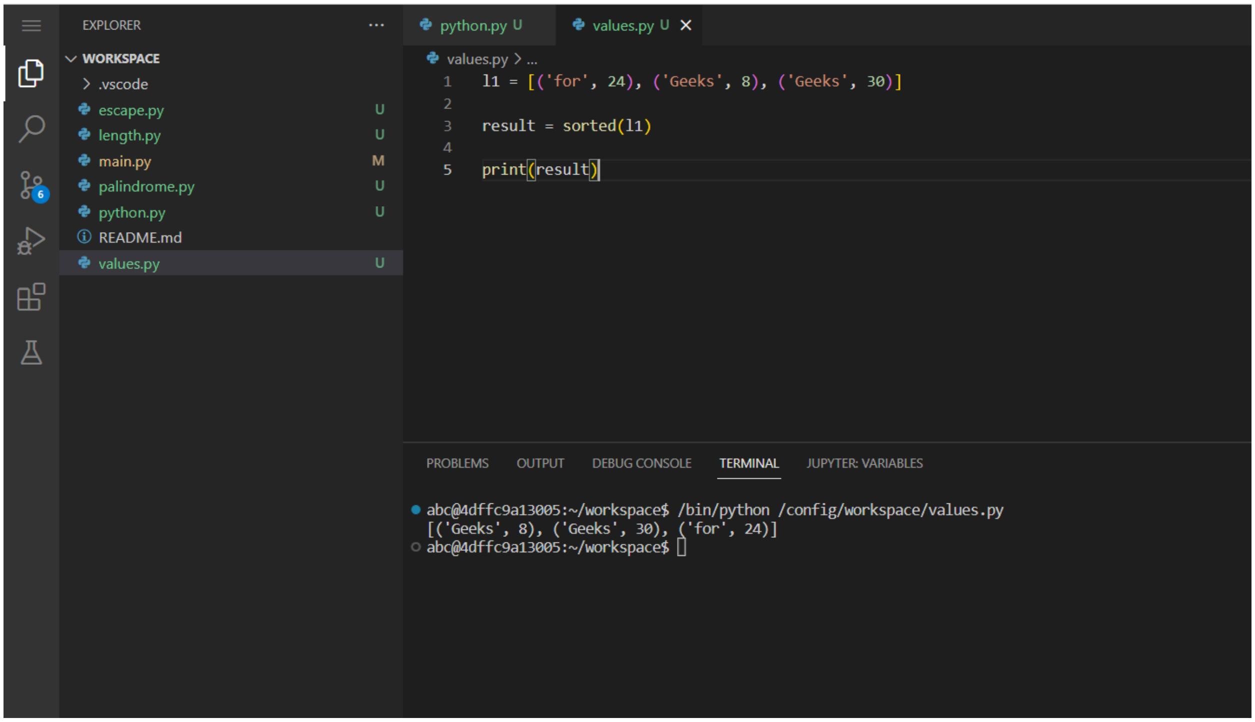


```python
test_tuple1 = (7, 2)
test_tuple2 = (7, 8)
res =  [(a, b) for a in test_tuple1 for b in test_tuple2]
res = res +  [(a, b) for a in test_tuple2 for b in test_tuple1]

print(res)
```

```
abc@4dffc9a13005:~/workspace$ /bin/python /config/workspace/values.py
[(7, 7), (7, 8), (2, 7), (2, 8), (7, 7), (7, 2), (8, 7), (8, 2)]
abc@4dffc9a13005:~/workspace$ 
```

95. Write a Python program to sort a list of tuples by second item.

```
Input : [('for', 24), ('Geeks', 8), ('Geeks', 30)]
Output : [('Geeks', 8), ('for', 24), ('Geeks', 30)]
```

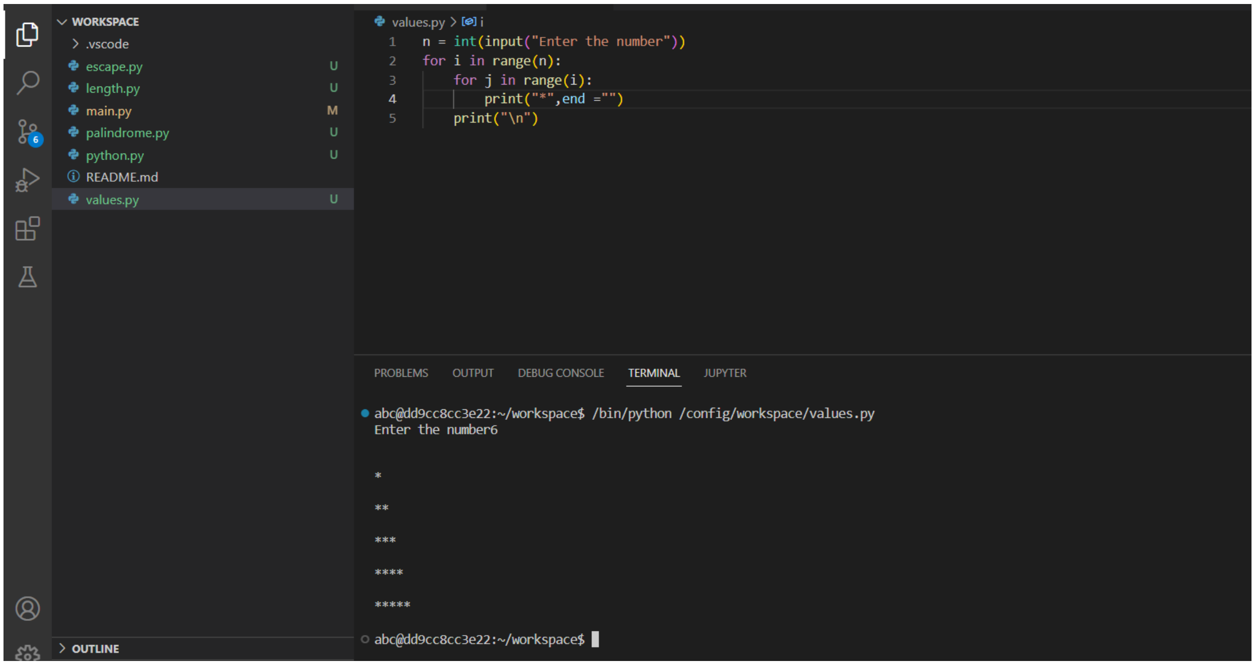


```python
l1 = [('for', 24), ('Geeks', 8), ('Geeks', 30)]

result = sorted(l1)

print(result)
```

```
abc@4dffc9a13005:~/workspace$ /bin/python /config/workspace/values.py
[('Geeks', 8), ('Geeks', 30), ('for', 24)]
abc@4dffc9a13005:~/workspace$ 
```

96. Write a python program to print below pattern.

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

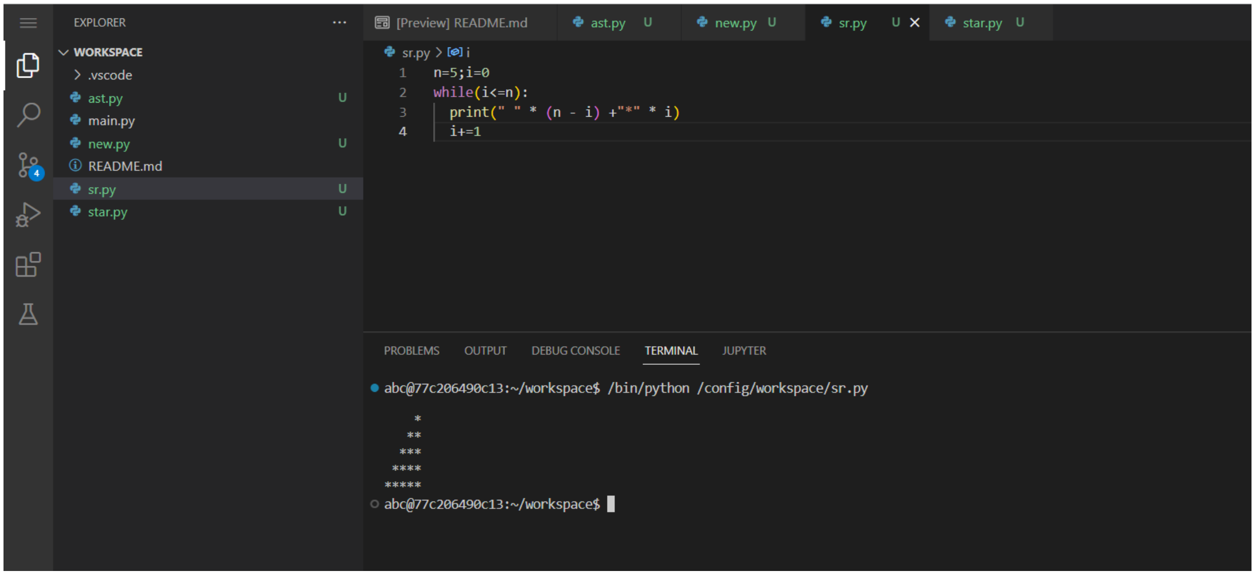


```python
n = int(input("Enter the number"))
for i in range(n):
    for j in range(i):
        print("*",end ="")
    print("\n")
```

```
abc@dd9cc8cc3e22:~/workspace$ /bin/python /config/workspace/values.py
Enter the number6


*

**

***

****

*****

abc@dd9cc8cc3e22:~/workspace$ 
```

97. Write a python program to print below pattern.

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

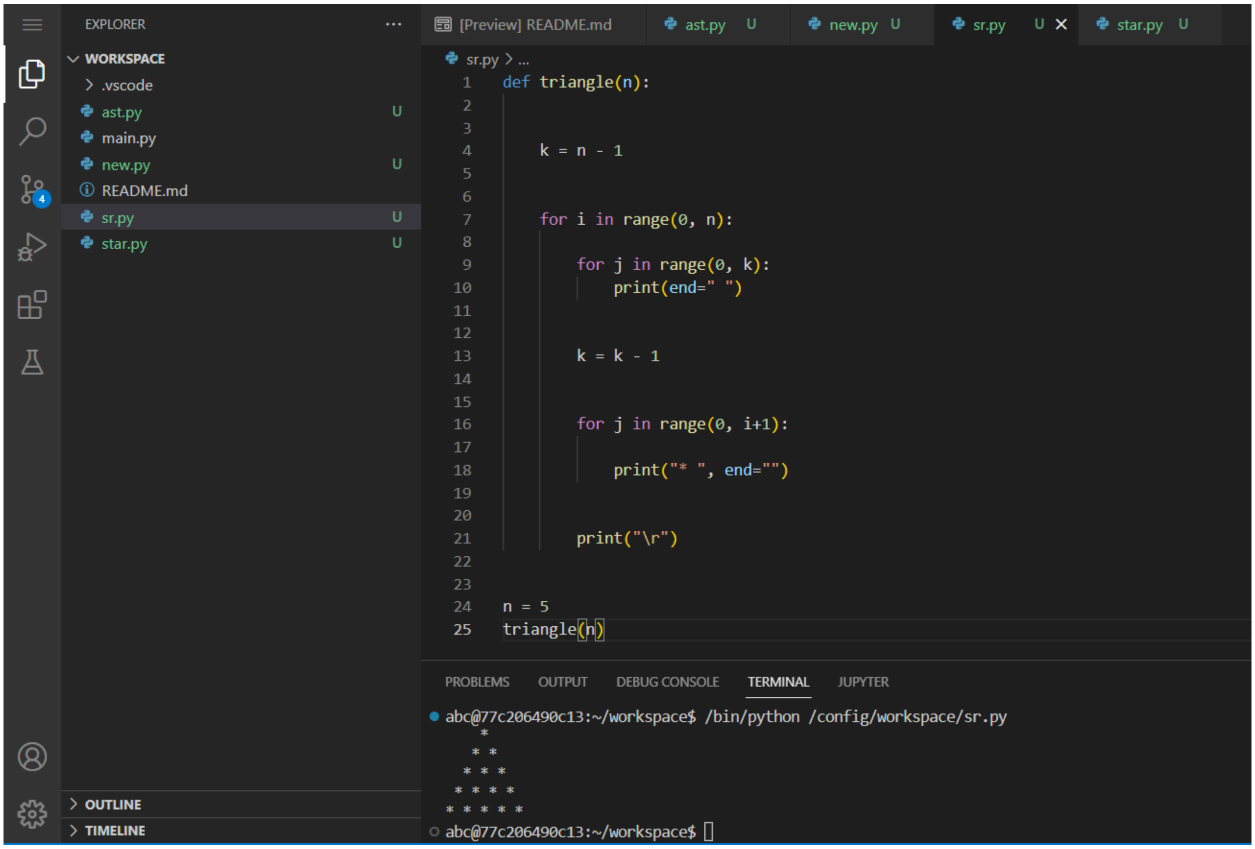


```python
n=5;i=0
while(i<=n):
  print(" " * (n - i) +"*" * i)
  i+=1
```

```
abc@77c206490c13:~/workspace$ /bin/python /config/workspace/sr.py

    *
   **
  ***
 ****
*****
abc@77c206490c13:~/workspace$ 
```

Q98. Write a python program to print below pattern.

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

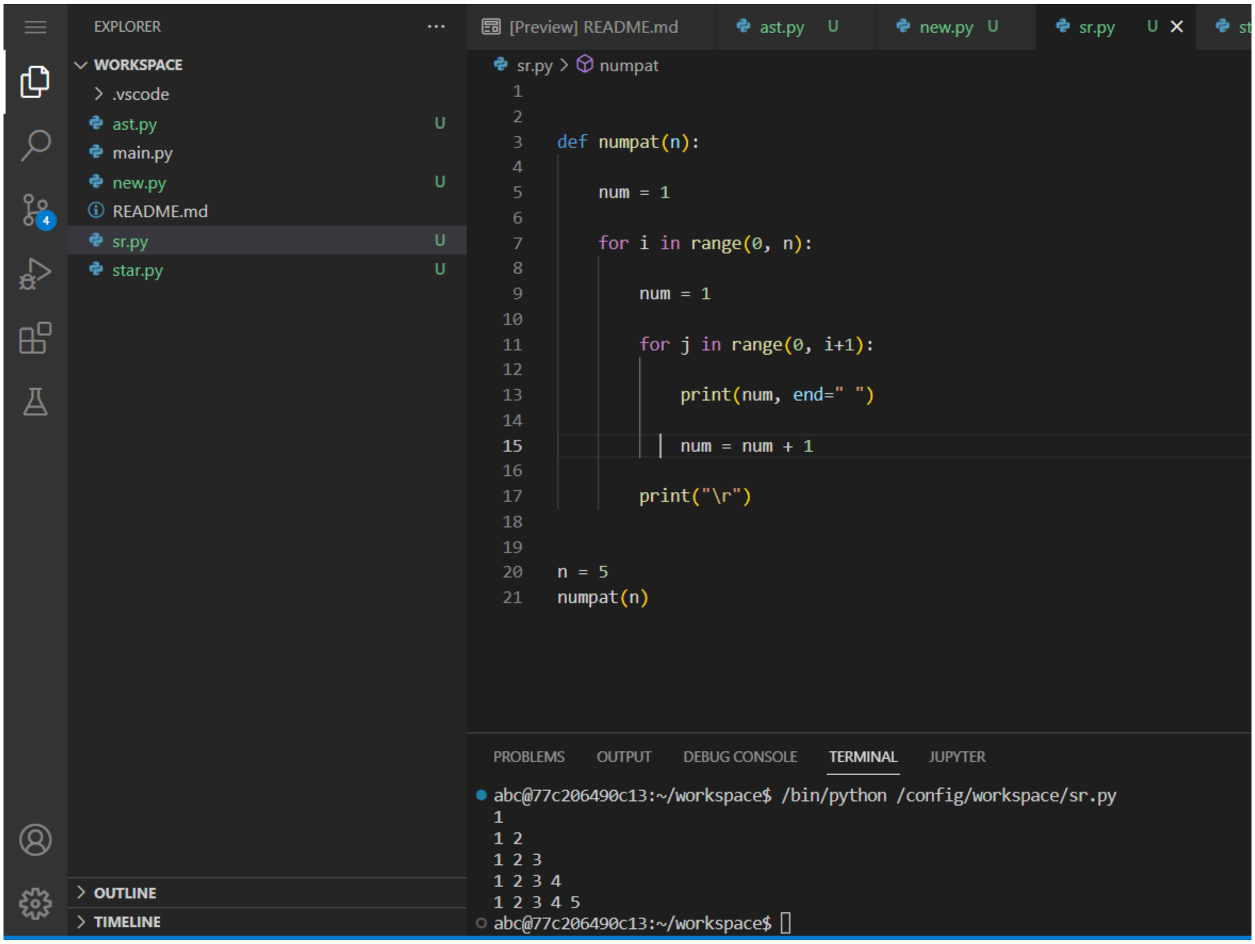


```python
def triangle(n):


    k = n - 1


    for i in range(0, n):

        for j in range(0, k):
            print(end=" ")


        k = k - 1


        for j in range(0, i+1):

            print("* ", end="")


        print("\r")


n = 5
triangle(n)
```

```
abc@77c206490c13:~/workspace$ /bin/python /config/workspace/sr.py
    *
   * *
  * * *
 * * * *
* * * * *
abc@77c206490c13:~/workspace$ 
```

Q99. Write a python program to print below pattern.

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

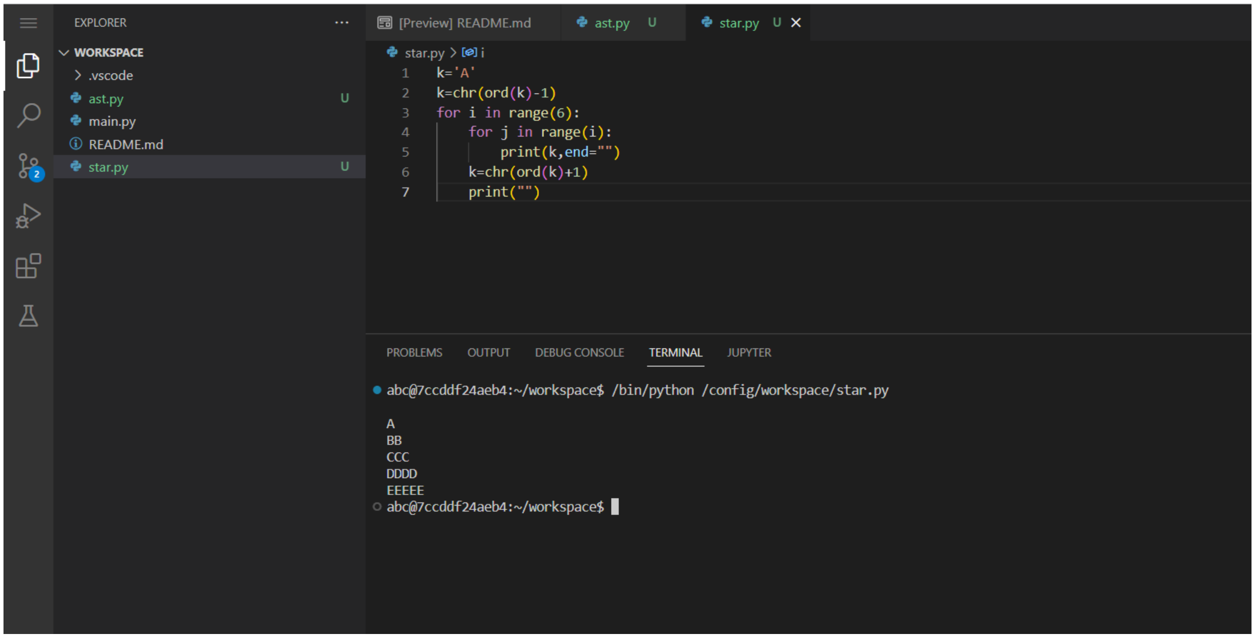


```python


def numpat(n):

    num = 1

    for i in range(0, n):

        num = 1

        for j in range(0, i+1):

            print(num, end=" ")

            num = num + 1

        print("\r")


n = 5
numpat(n)
```

```
abc@77c206490c13:~/workspace$ /bin/python /config/workspace/sr.py
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
abc@77c206490c13:~/workspace$ 
```

Q100. Write a python program to print below pattern.

```
A
B B
C C C
D D D D
E E E E E
```



```python
k='A'
k=chr(ord(k)-1)
for i in range(6):
    for j in range(i):
        print(k,end="")
    k=chr(ord(k)+1)
    print("")
```

```
abc@7ccddf24aeb4:~/workspace$ /bin/python /config/workspace/star.py

A
BB
CCC
DDDD
EEEEE
abc@7ccddf24aeb4:~/workspace$ 
```