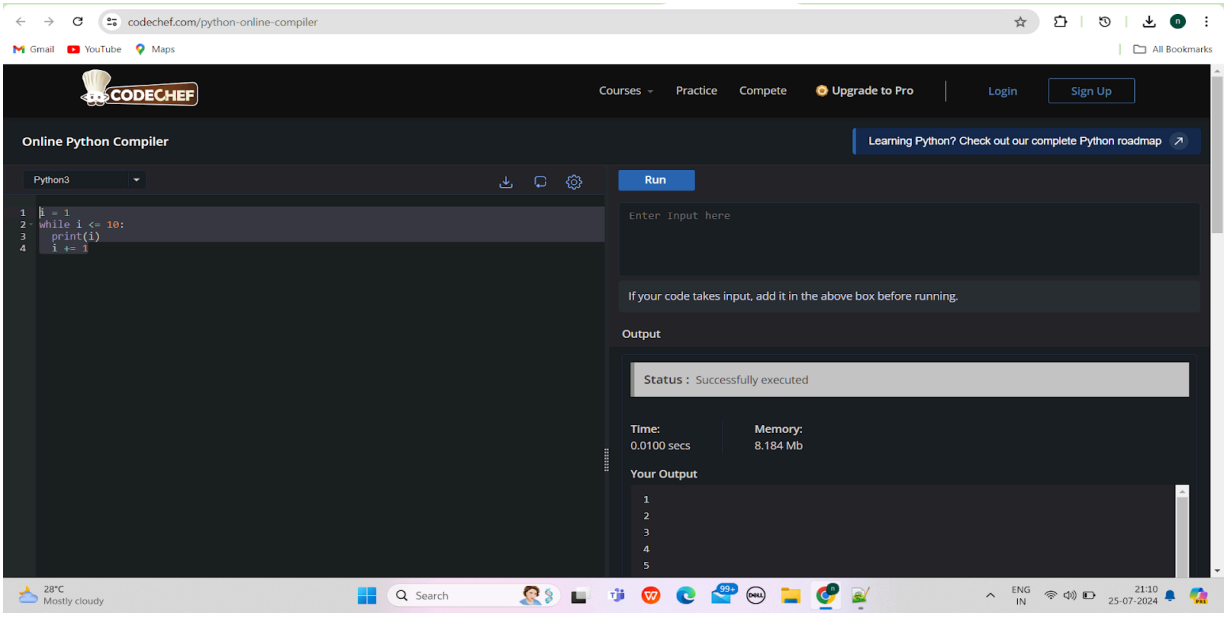
LOOPS IN PYTHON

1.Print First 10 natural numbers using while loop

Help: [while loop in Python]

Expected output:

```
1
2
3
4
5
6
7
8
9
10
```

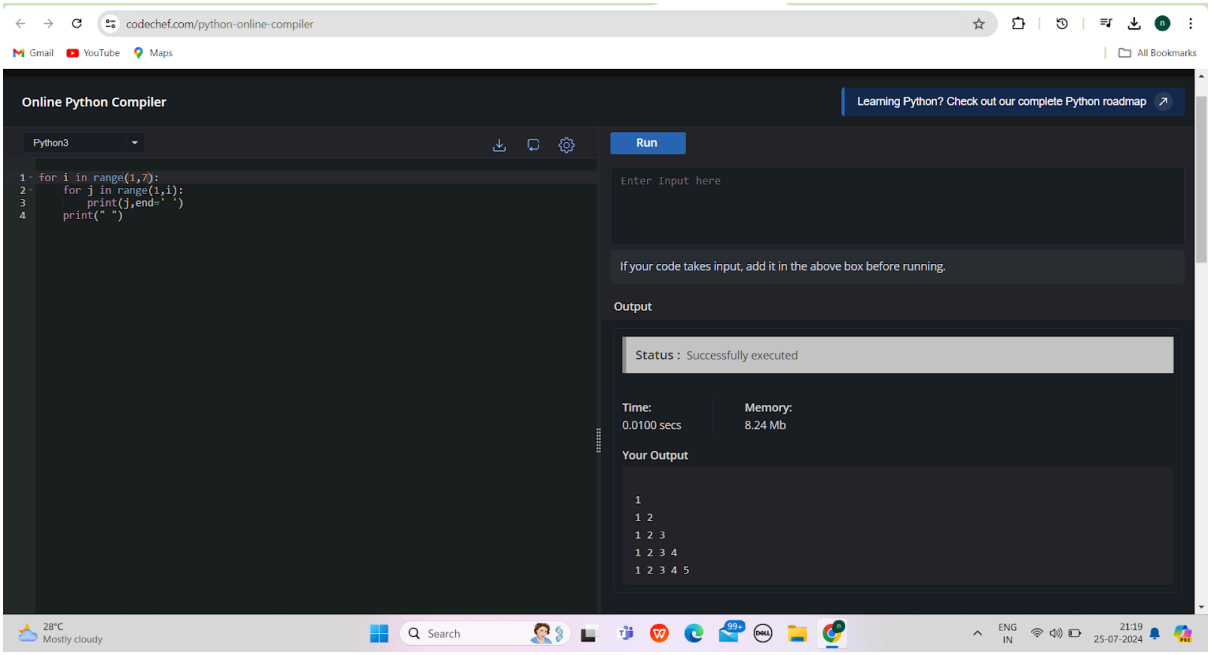


2 . Print the following pattern

Write a program to print the following number pattern using a loop.

```
1
1  2
```

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



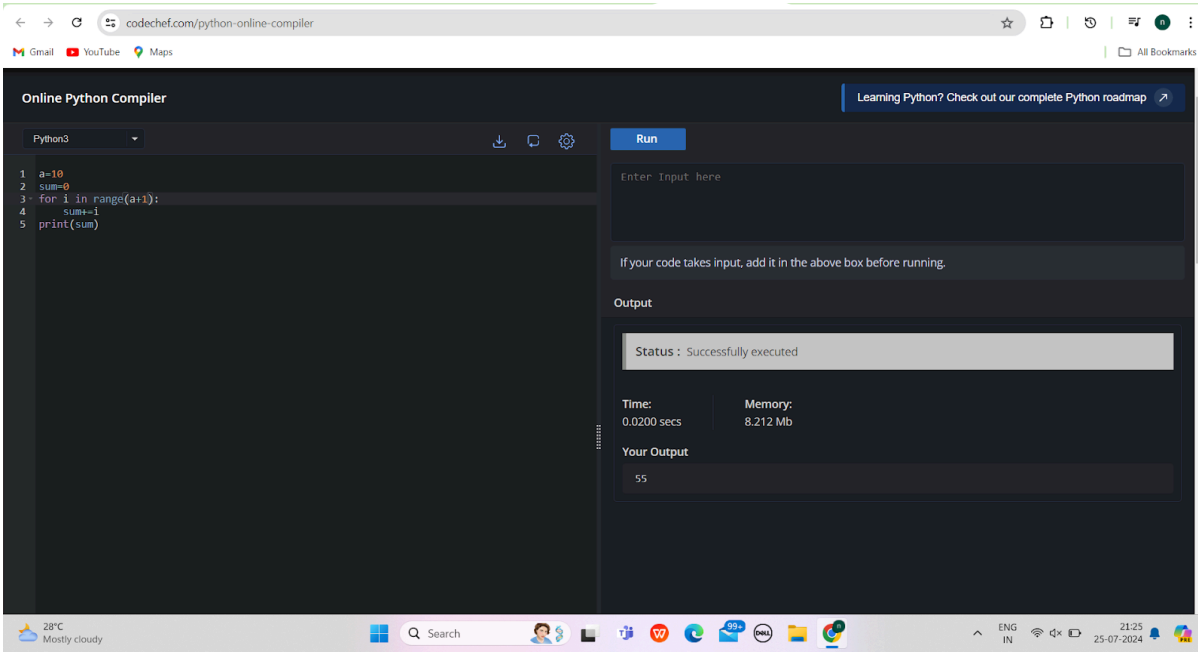
Exercise 3: Calculate the sum of all numbers from 1 to a given number

Write a program to accept a number from a user and calculate the sum of all numbers from 1 to a given number

For example, if the user entered **10** the output should be **55** (`1+2+3+4+5+6+7+8+9+10`)

Expected Output:

```
Enter number 10
Sum is:  55
```



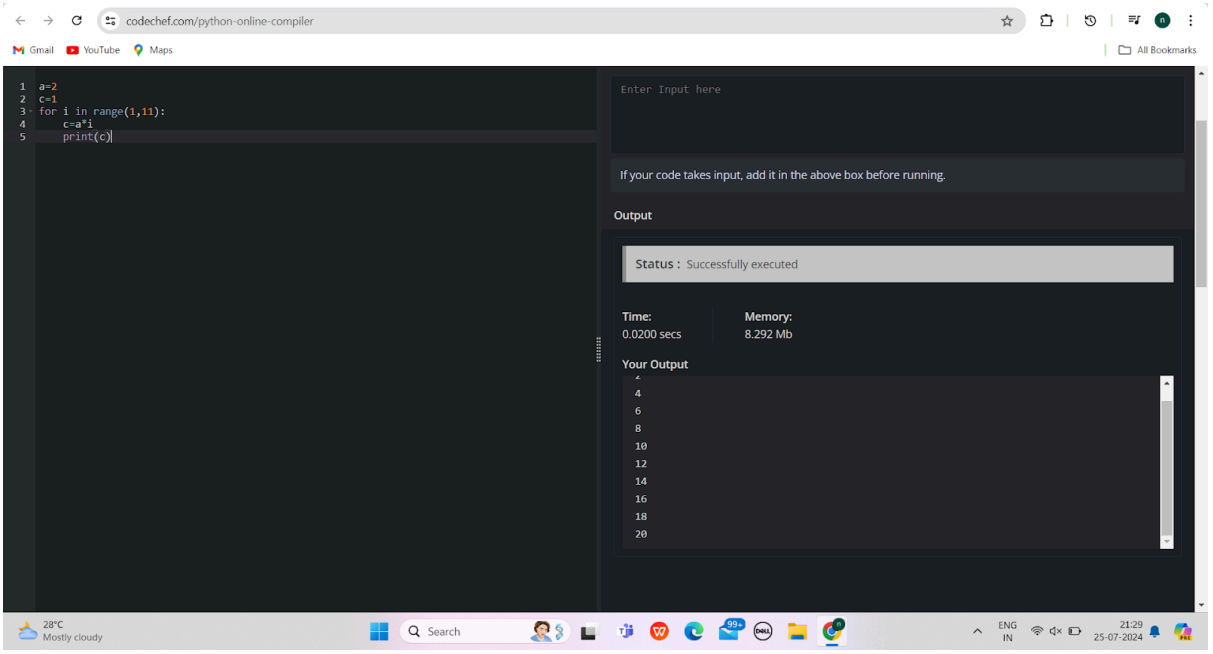
Exercise 4: Write a program to print multiplication table of a given number

Given:

```
num = 2
```

Expected output is:

```
2
4
6
8
10
12
14
16
18
20
```



Exercise 5: Display numbers from a list using loop

Write a program to display only those numbers from a list that satisfy the following conditions

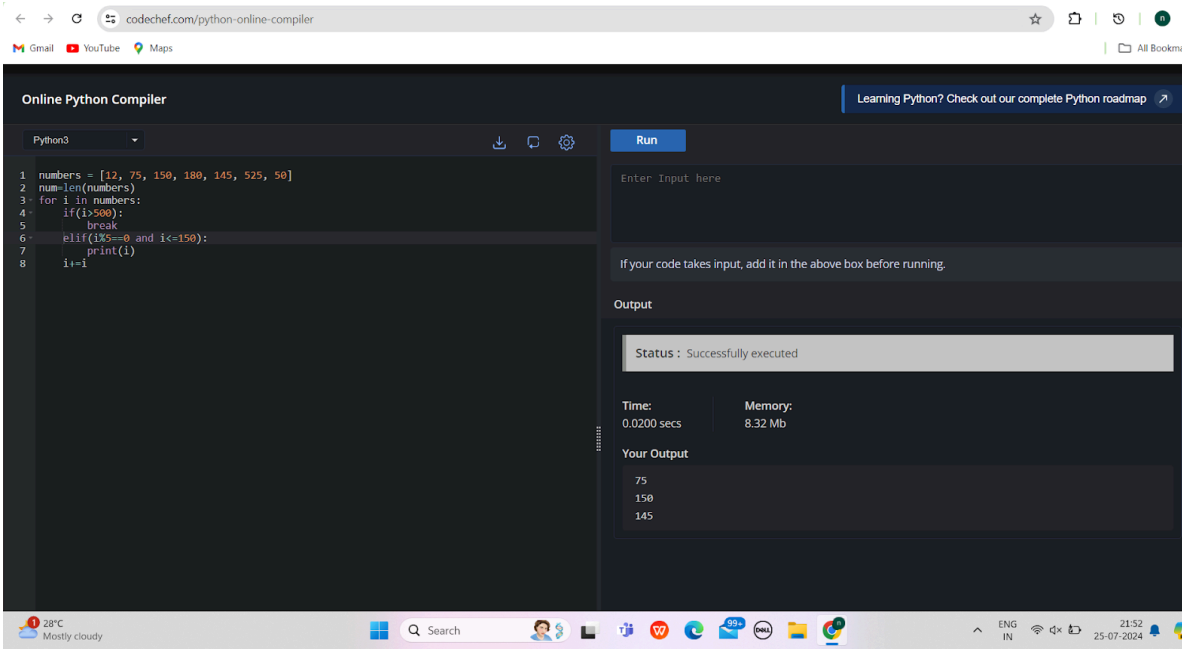
- The number must be divisible by five
- If the number is greater than 150, then skip it and move to the next number
- If the number is greater than 500, then stop the loop

Given:

```
numbers = [12, 75, 150, 180, 145, 525, 50]
```

Expected output:

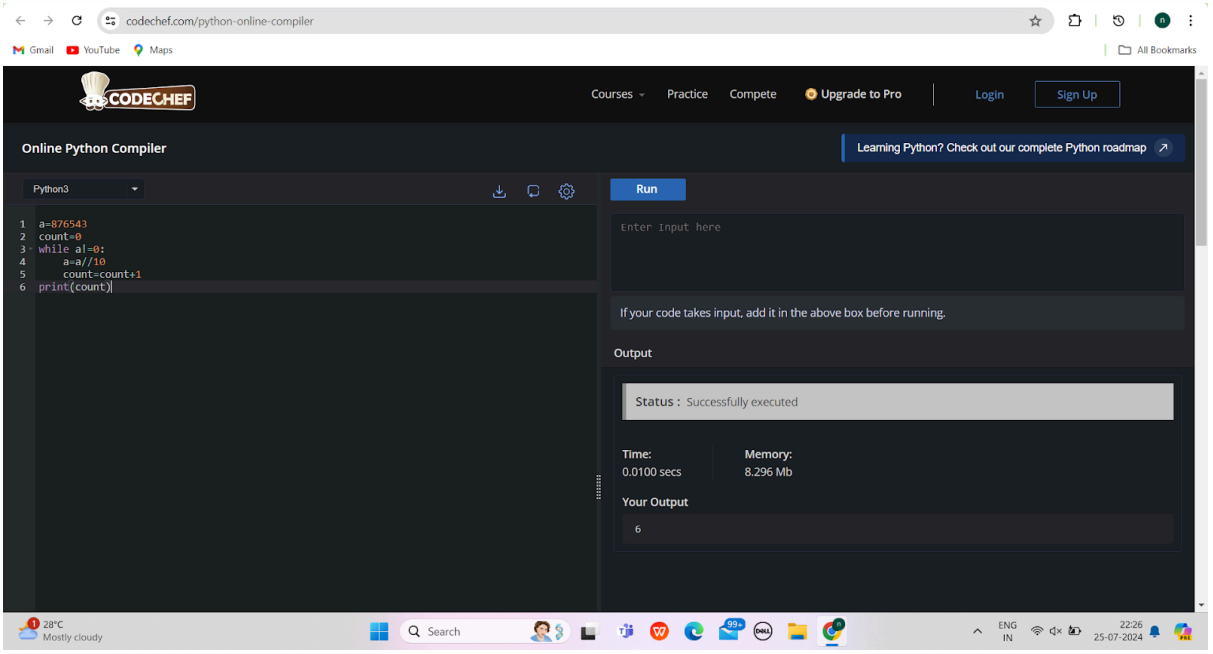
```
75
150
145
```



Exercise 6: Count the total number of digits in a number

Write a program to count the total number of digits in a number using a [while loop](#).

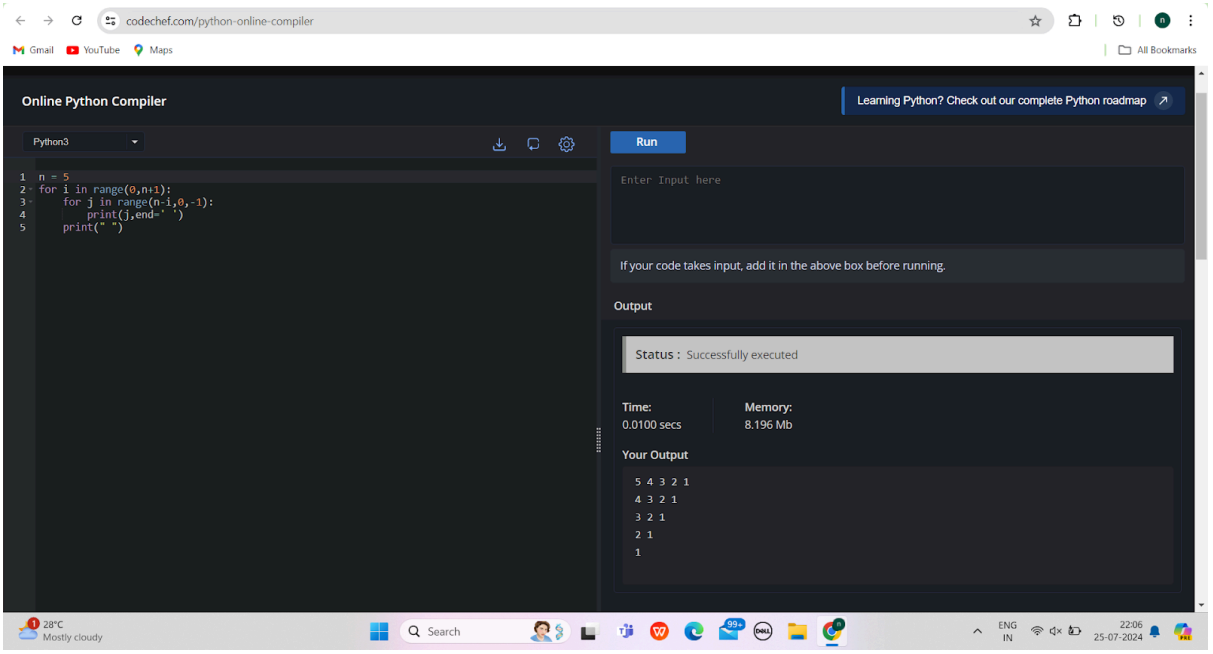
For example, the number is **75869**, so the output should be **5**.



Exercise 7: Print the following pattern

Write a program to use `for` loop to print the following reverse number pattern

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



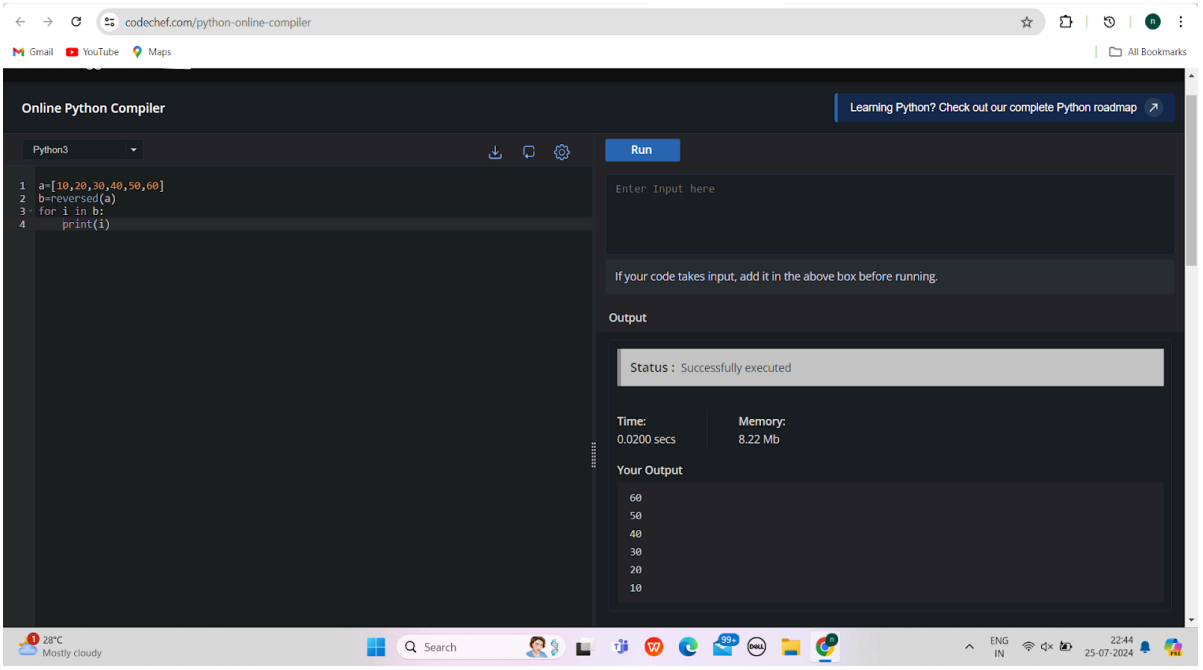
Exercise 8: Print list in reverse order using a loop

Given:

```
list1 = [10, 20, 30, 40, 50]
```

Expected output:

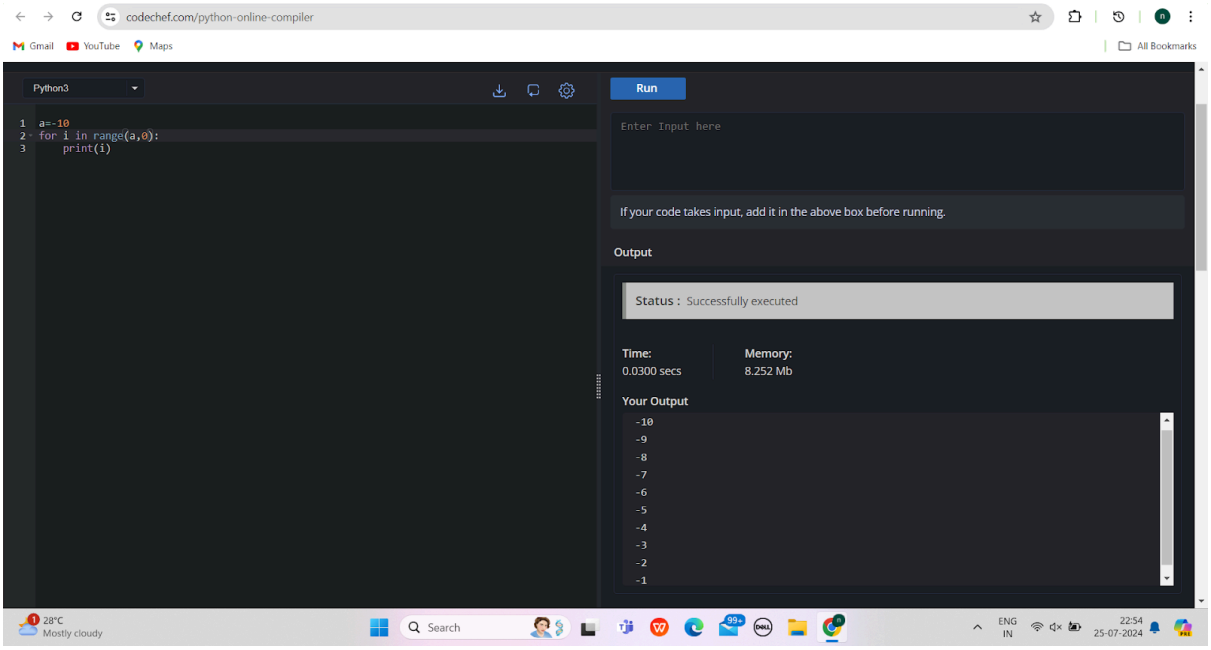
```
50
40
30
20
10
```



Exercise 9: Display numbers from -10 to -1 using for loop

Expected output:

```
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1
```



Exercise 10: Use else block to display a message “Done” after successful execution of for loop

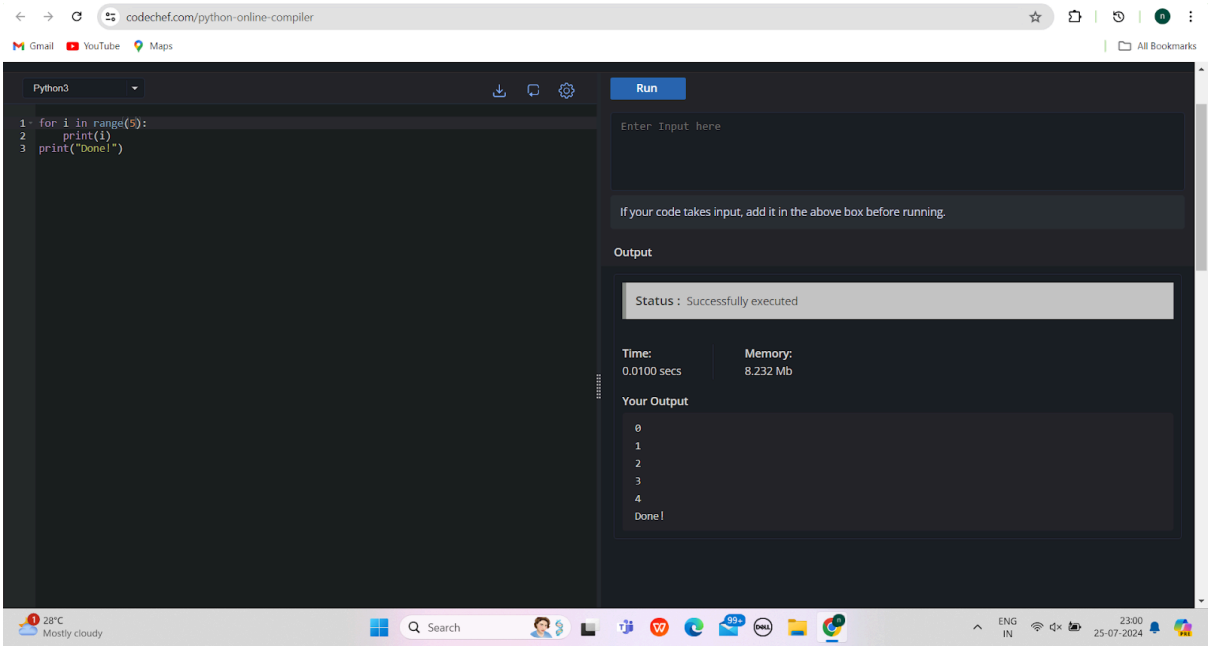
For example, the following loop will execute without any error.

Given:

```
for i in range(5):
    print(i)
```

Expected output:

```
0
1
2
3
4
Done!
```



Exercise 11: Write a program to display all prime numbers within a range

Note: A Prime Number is a number that cannot be made by multiplying other whole numbers. A prime number is a natural number greater than 1 that is not a product of two smaller natural numbers

Examples:

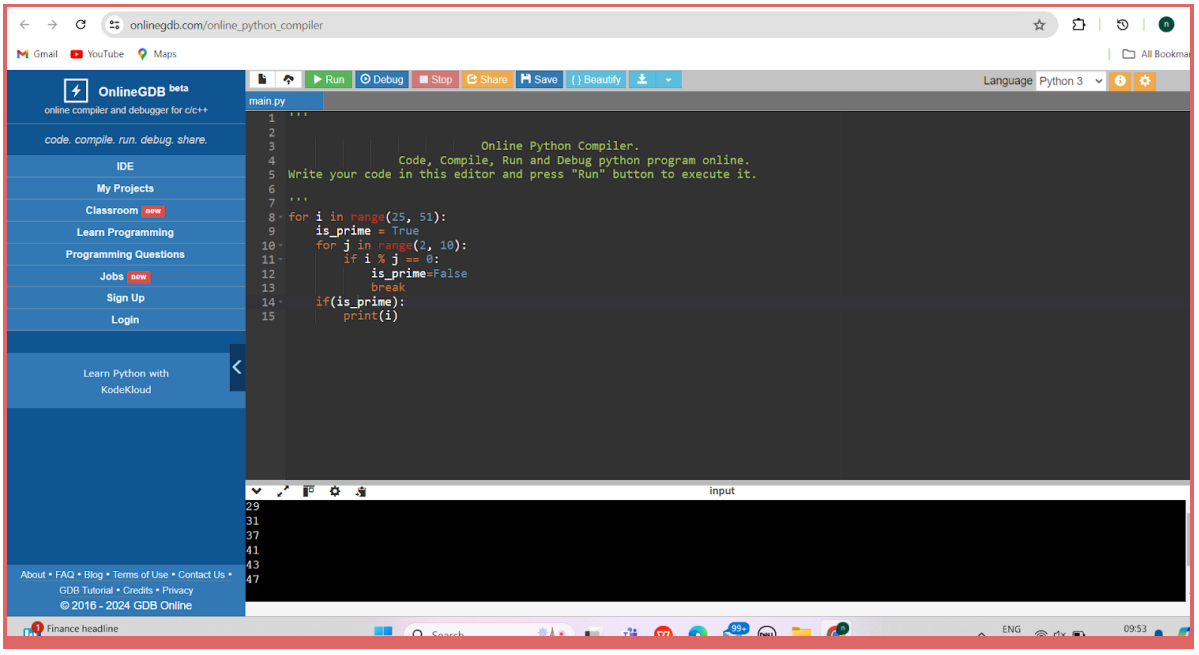
- 6 is not a prime mumber because it can be made by 2×3 = 6
- 37 is a prime number because no other whole numbers multiply together to make it.

Given:

```
# range
start = 25
end = 50
```

Expected output:

```
Prime numbers between 25 and 50 are:
29
31
37
41
43
47
```



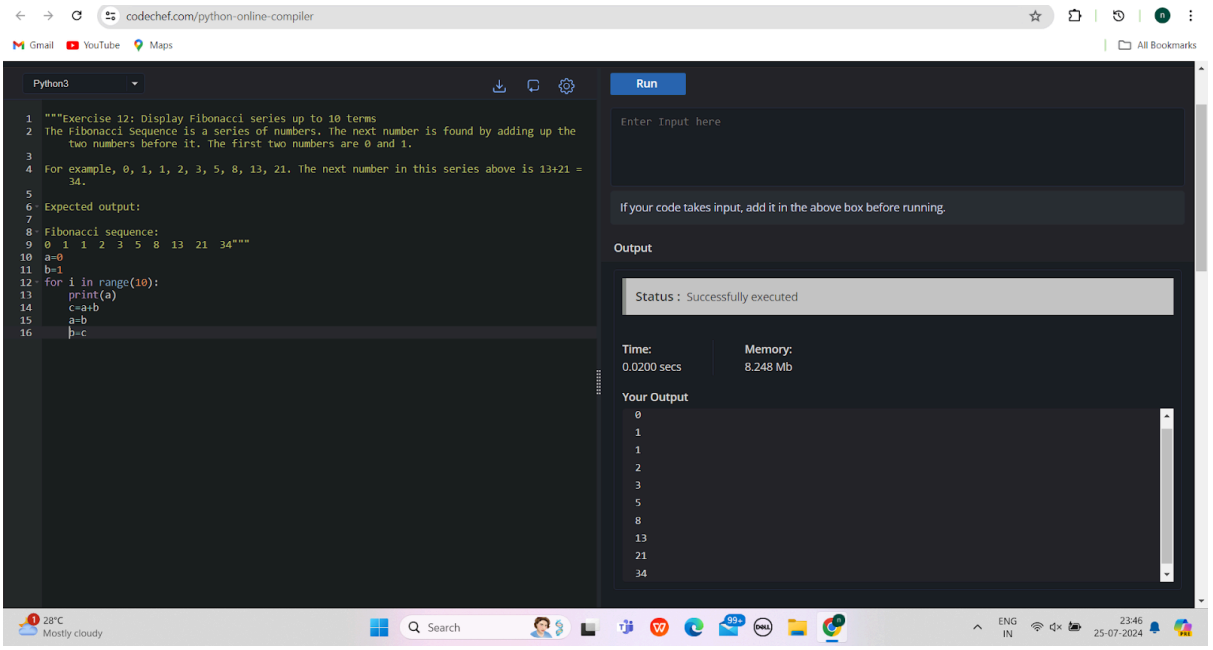
Exercise 12: Display Fibonacci series up to 10 terms

The Fibonacci Sequence is a series of numbers. The next number is found by adding up the two numbers before it. The **first two numbers are 0 and 1**.

For example, 0, 1, 1, 2, 3, 5, 8, 13, 21. The next number in this series above is 13+21 = 34.

Expected output:

```
Fibonacci sequence:
0  1  1  2  3  5  8  13  21  34
```



Exercise 13: Find the factorial of a given number

Write a program to use the loop to find the factorial of a given number.

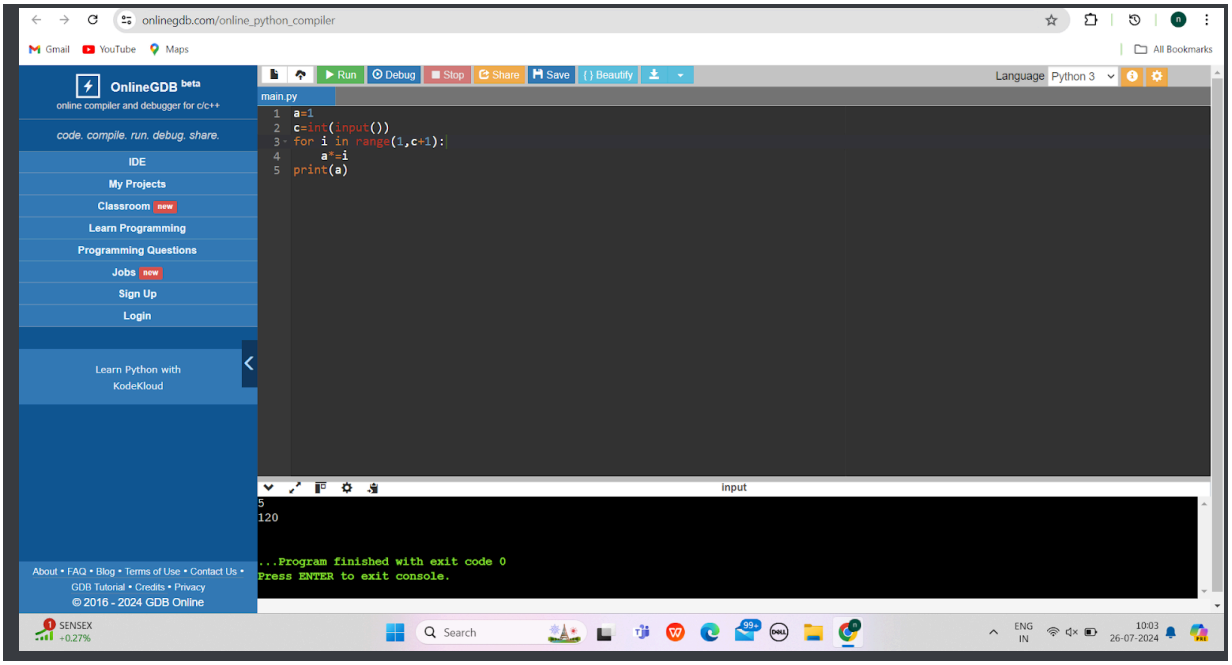
The factorial (symbol: !) means to multiply all whole numbers from the chosen number down to 1.

For example: calculate the factorial of 5

5! = 5 x 4 x 3 x 2 x 1 = 120

Expected output:

120



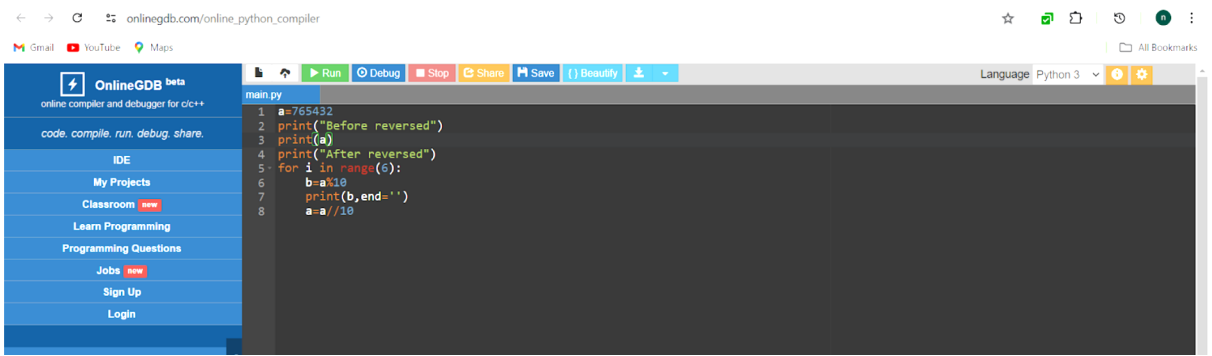
Exercise 14: Reverse a given integer number

Given:

76542

Expected output:

24567



Exercise 15: Use a loop to display elements from a given list present at odd index positions

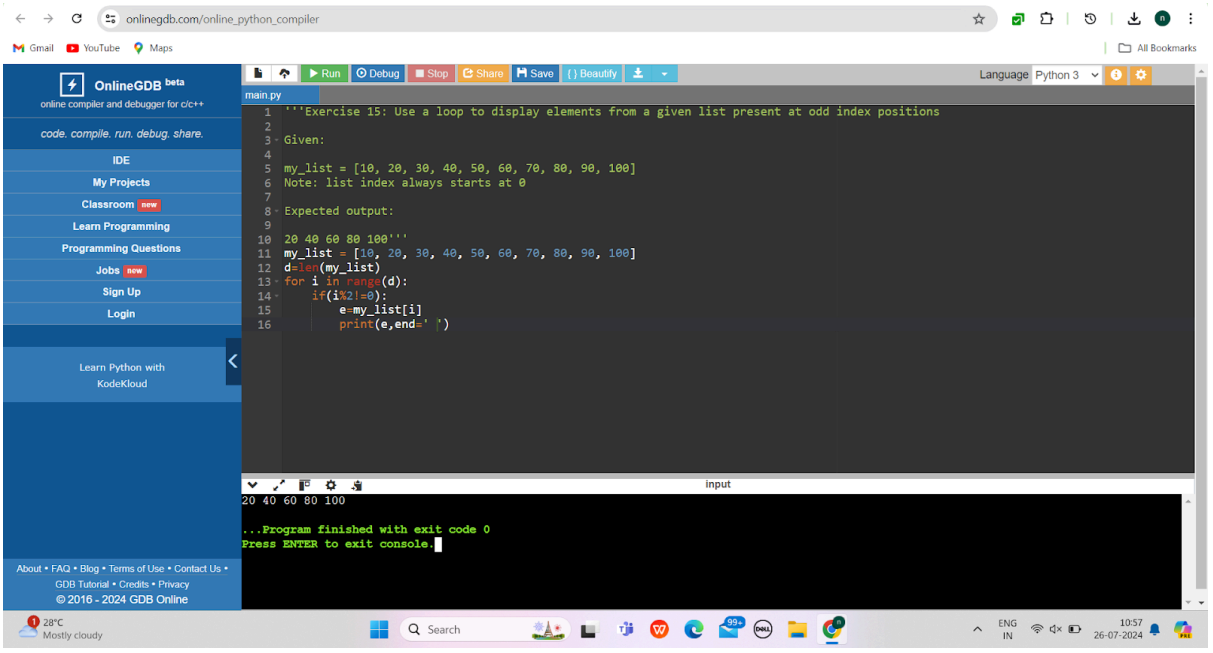
Given:

```
my_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
```

Note: list index always starts at 0

Expected output:

```
20 40 60 80 100
```



Exercise 16: Calculate the cube of all numbers from 1 to a given number

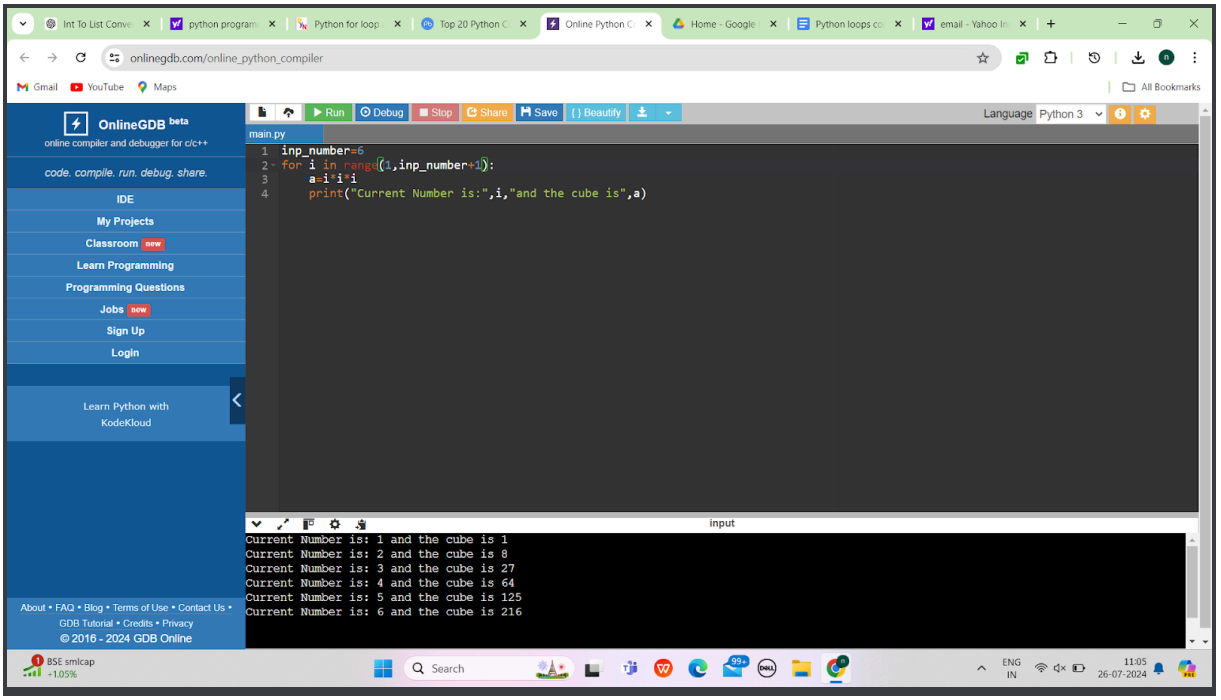
Write a program to rint the cube of all numbers from 1 to a given number

Given:

```
input_number = 6
```

Expected output:

```
Current Number is : 1  and the cube is 1
Current Number is : 2  and the cube is 8
Current Number is : 3  and the cube is 27
Current Number is : 4  and the cube is 64
Current Number is : 5  and the cube is 125
Current Number is : 6  and the cube is 216
```



Exercise 17: Find the sum of the series upto n terms

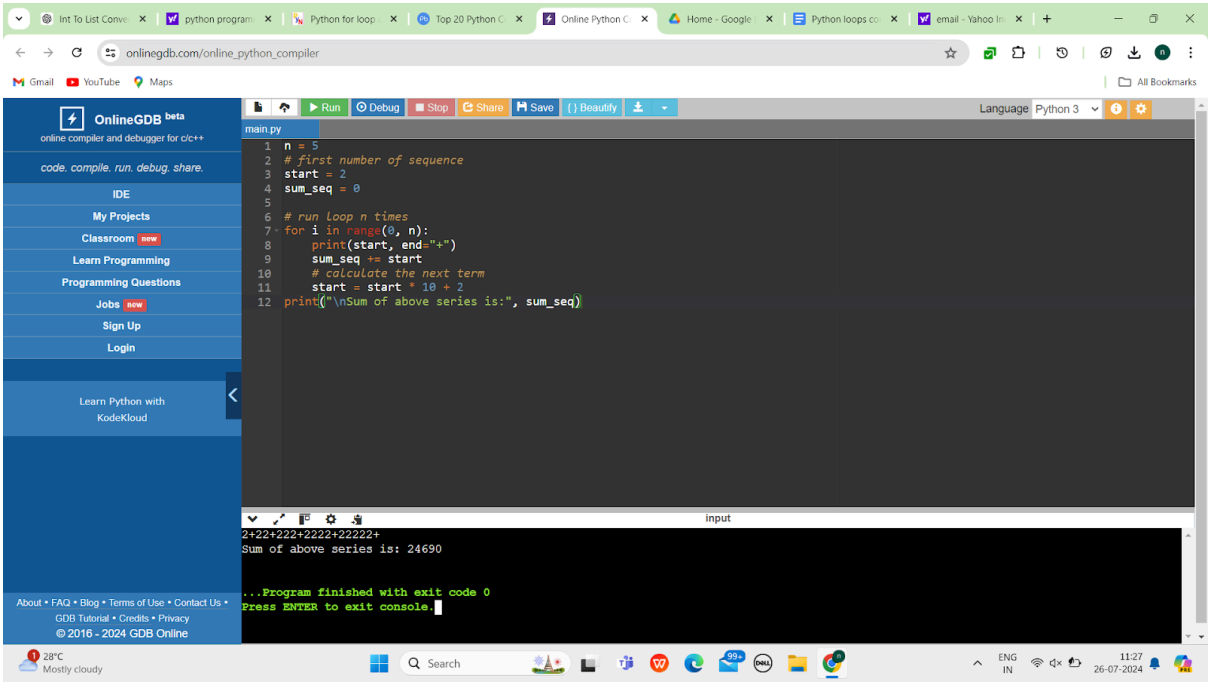
Write a program to calculate the sum of series up to n term. For example, if `n =5` the series will become 2 + 22 + 222 + 2222 + 22222 = 24690

Given:

```
# number of terms
n = 5
```

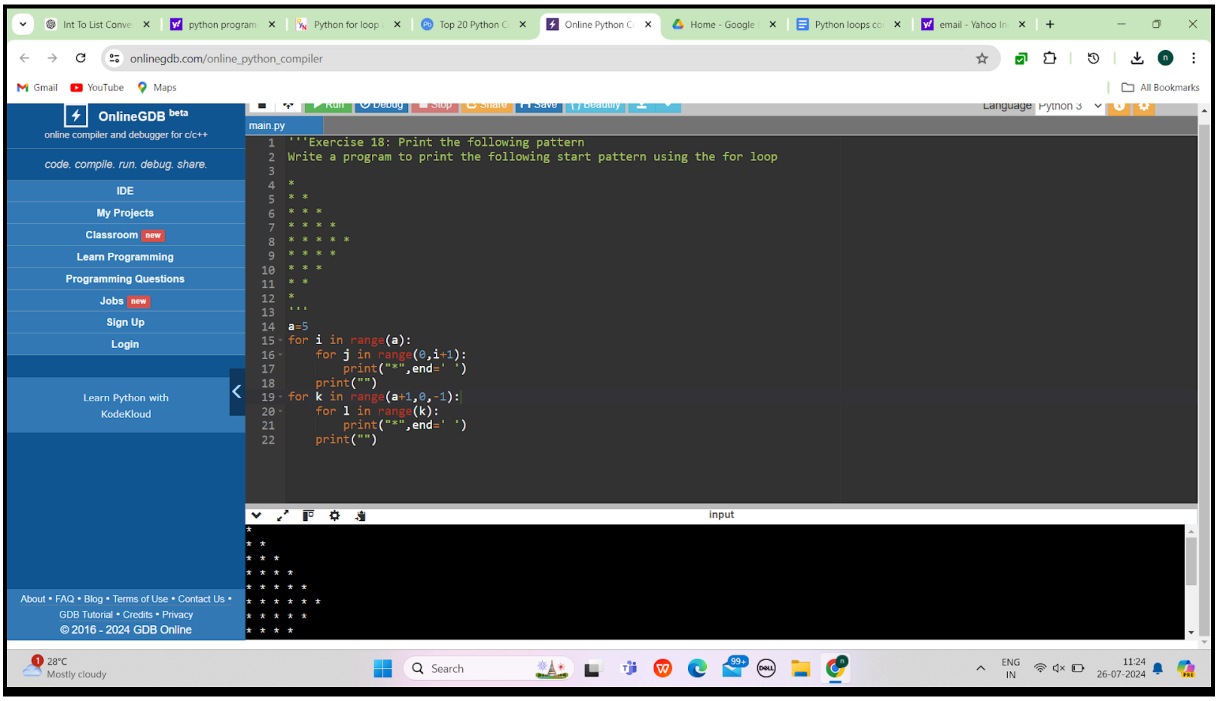
Expected output:

```
24690
```



Exercise 18: Print the following pattern

Write a program to print the following start pattern using the `for` loop



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main.py
'''Exercise 18: Print the following pattern
Write a program to print the following start pattern using the for loop

*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
'''
a=5
for i in range(a):
    for j in range(0,i+1):
        print("*",end=' ')
    print("")
for k in range(a+1,0,-1):
    for l in range(k):
        print("*",end=' ')
    print("")
input
*
* *
* * *
* * * *
* * * * *
* * * * * *
* * * * *
* * * *
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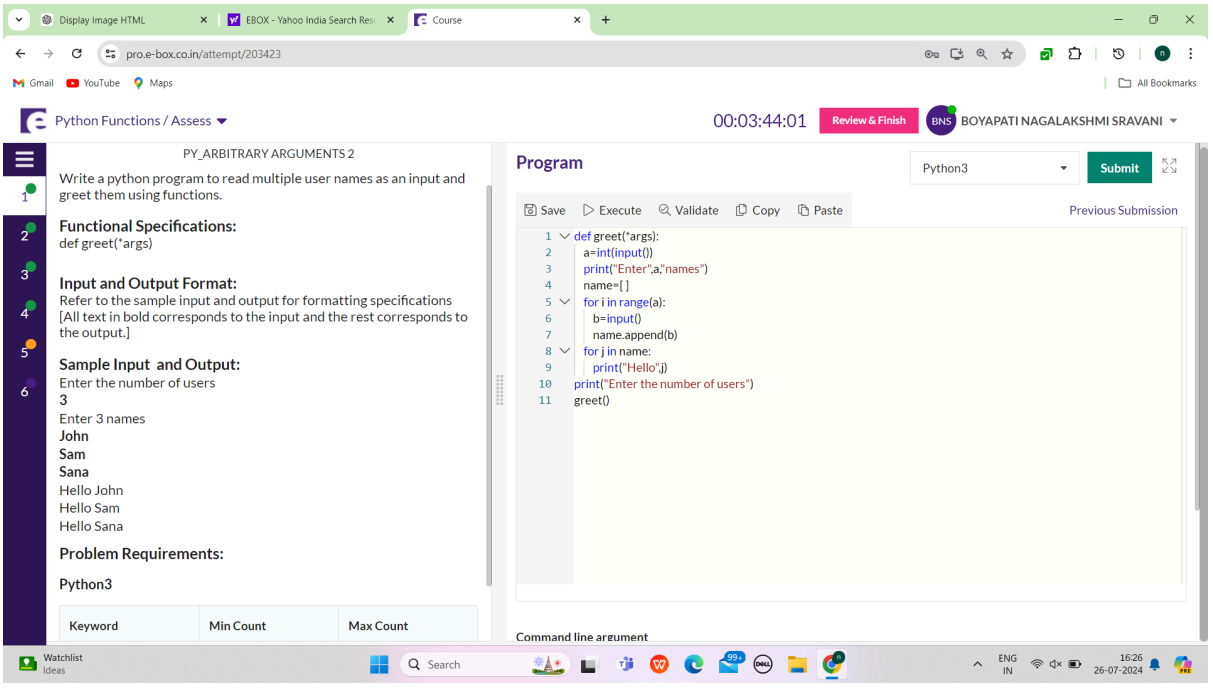

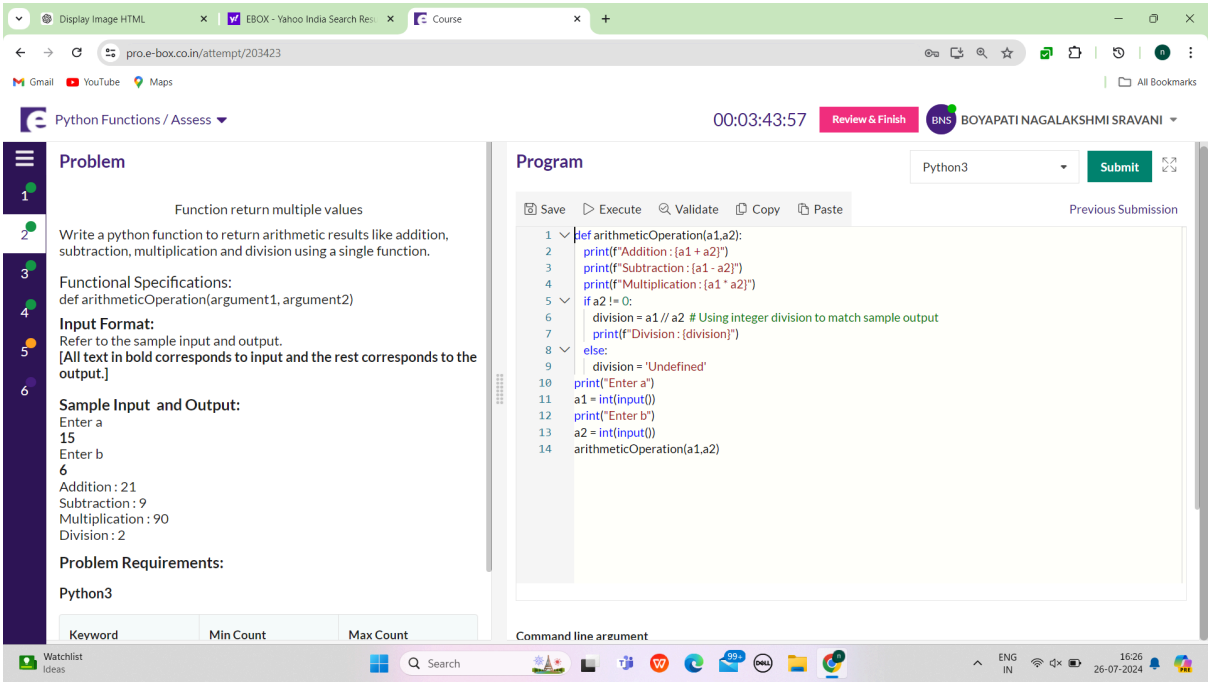

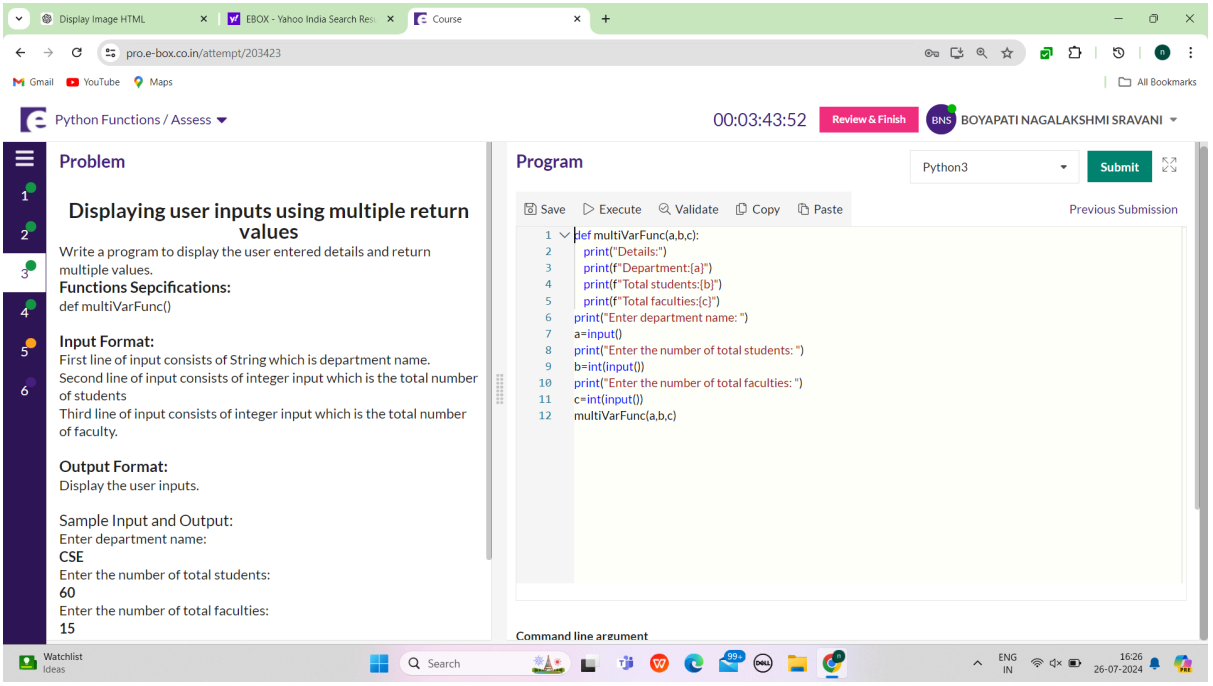
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Python Functions / Assess
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Review & Finish
BNS
BOYAPATI NAGALAKSHMI SRAVANI
Problem
Displaying user inputs using multiple return values
Write a program to display the user entered details and return multiple values.
Functions Sepcifications:
def multiVarFunc()
Input Format:
First line of input consists of String which is department name.
Second line of input consists of integer input which is the total number of students
Third line of input consists of integer input which is the total number of faculty.
Output Format:
Display the user inputs.
Sample Input and Output:
Enter department name:
CSE
Enter the number of total students:
60
Enter the number of total faculties:
15
Program
Python3
Submit
Save
Execute
Validate
Copy
Paste
Previous Submission
def multiVarFunc(a,b,c):
print("Details:")
print(f"Department:{a}")
print(f"Total students:{b}")
print(f"Total faculties:{c}")
print("Enter department name: ")
a=input()
print("Enter the number of total students: ")
b=int(input())
print("Enter the number of total faculties: ")
c=int(input())
multiVarFunc(a,b,c)
Command line argument
Watchlist
Ideas
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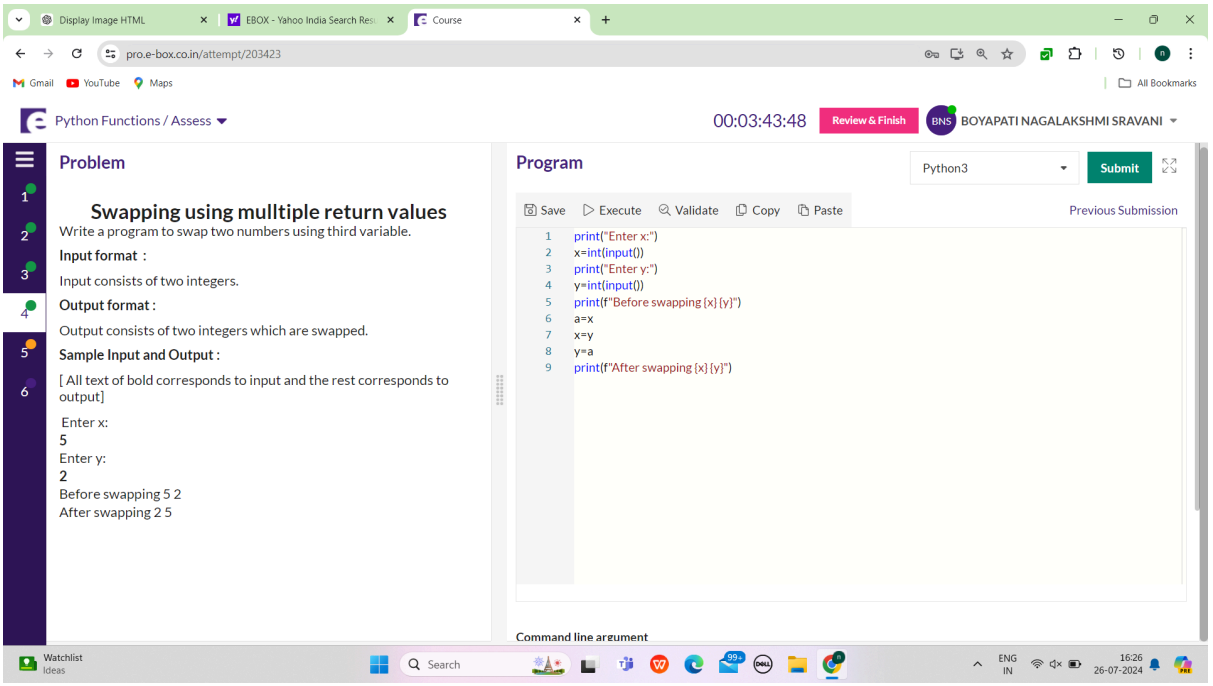
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Python Functions / Assess
00:03:43:48
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Problem
Swapping using mulltiple return values
Write a program to swap two numbers using third variable.
Input format :
Input consists of two integers.
Output format :
Output consists of two integers which are swapped.
Sample Input and Output :
[All text of bold corresponds to input and the rest corresponds to output]
Enter x:
5
Enter y:
2
Before swapping 5 2
After swapping 2 5
Program
Python3
Submit
Save
Execute
Validate
Copy
Paste
Previous Submission
print("Enter x:")
x=int(input())
print("Enter y:")
y=int(input())
print(f"Before swapping {x} {y}")
a=x
x=y
y=a
print(f"After swapping {x} {y}")
Command line argument
Watchlist
Ideas
Search
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26-07-2024