

Indian Institute of Information Technology (IIIT) Pune

Python Lab.

3rd Semester

Academic Session 2024-2025

Lab - 2

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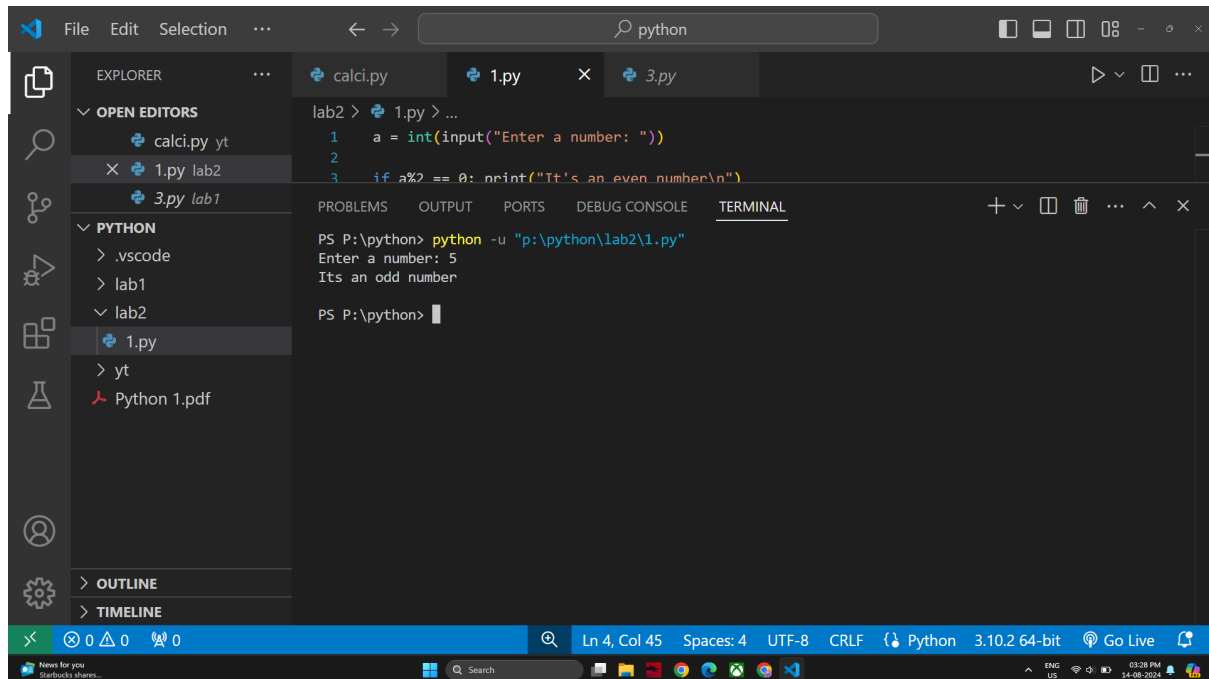
MIS NO. : 112315144

‘Group 4’

1) Write a Program for checking whether the given number is an even number or not.

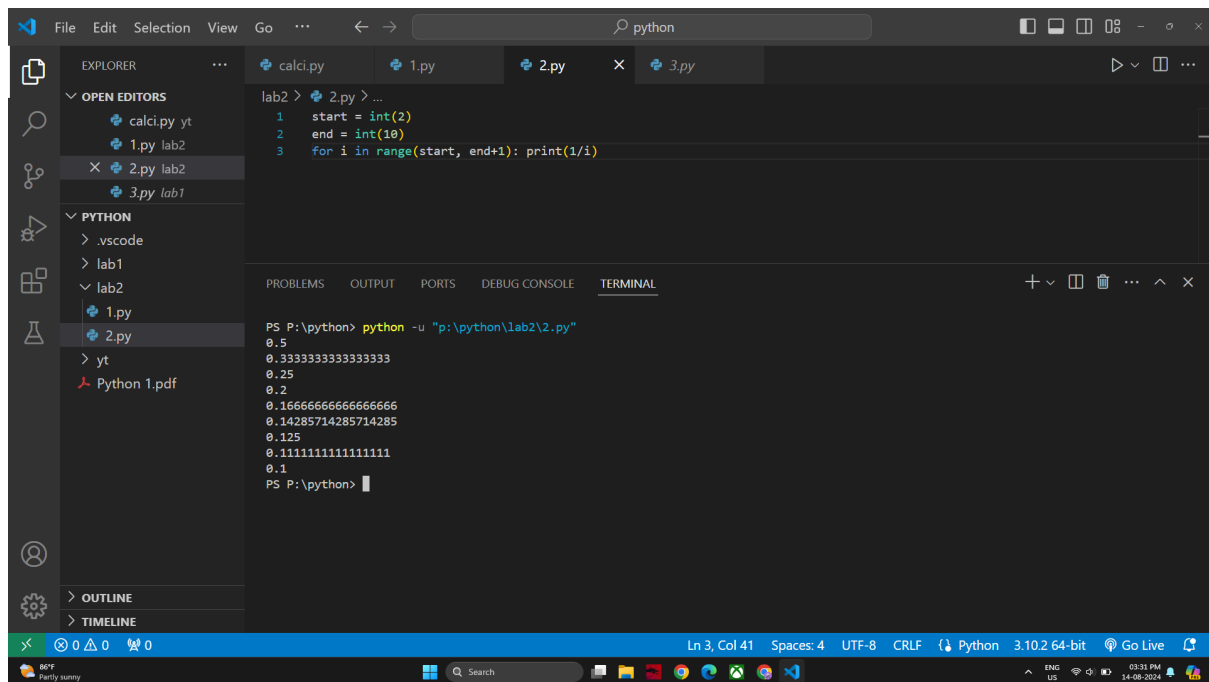
```
a = int(input("Enter a number: "))

if a%2 == 0: print("It's an even number\n")
elif a%2 == 1: print("It's an odd number\n")
```



2) Using for loop, write a program that prints out the decimal equivalents of $1/2$, $1/3$, $1/4$, . . . , $1/10$.

```
start = int(2)
end = int(10)
for i in range(start, end+1): print(1/i)
```



The screenshot shows the Visual Studio Code (VS Code) interface. The Explorer panel on the left shows a project structure with folders 'lab1' and 'lab2'. The 'lab2' folder is expanded, showing files '1.py', '2.py', and '3.py'. The '2.py' file is selected and its content is displayed in the editor. The code in '2.py' is:

```
1 start = int(2)
2 end = int(10)
3 for i in range(start, end+1): print(1/i)
```

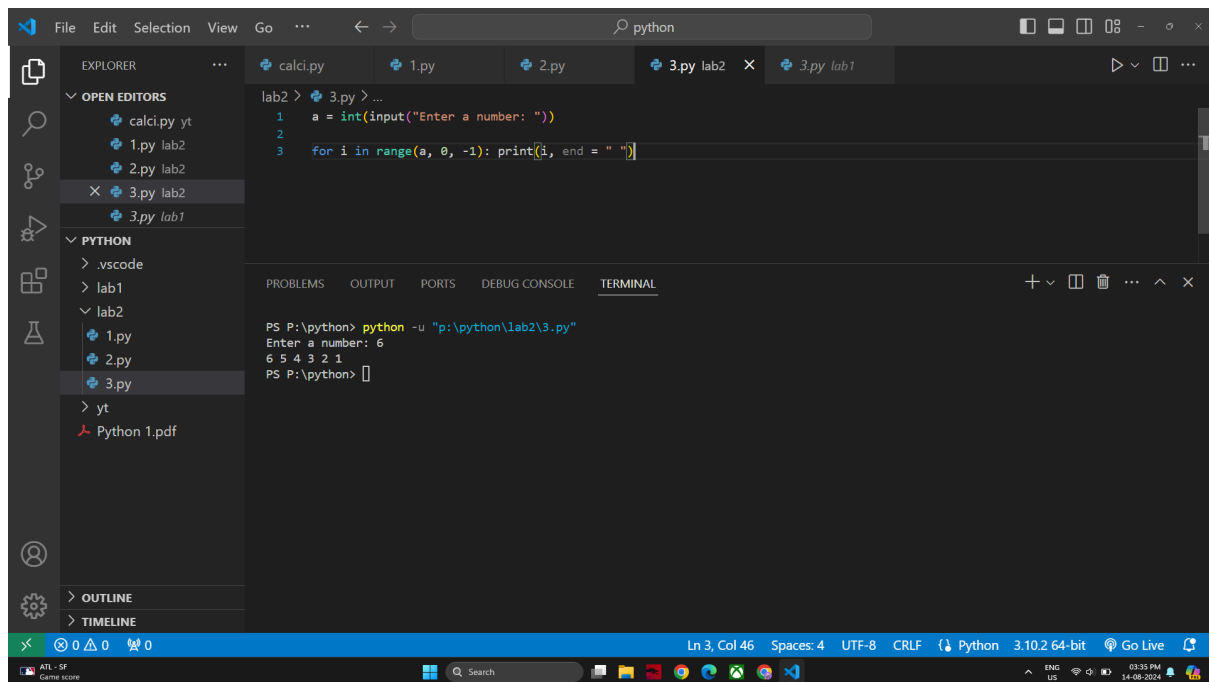
The TERMINAL panel at the bottom shows the output of running the script. The command executed is `python -u "p:\python\lab2\2.py"`. The output is:

```
0.5
0.3333333333333333
0.25
0.2
0.16666666666666666
0.14285714285714285
0.125
0.11111111111111111
0.1
```

The status bar at the bottom indicates the current file is 'Ln 3, Col 41', the encoding is 'UTF-8', and the line endings are 'CRLF'. The Python version is '3.10.2 64-bit'.

3) Write a program using a while loop that asks the user for a number, and prints a countdown from that number to zero.

```
a = int(input("Enter a number: "))  
  
for i in range(a, 0, -1): print(i, end = " ")
```

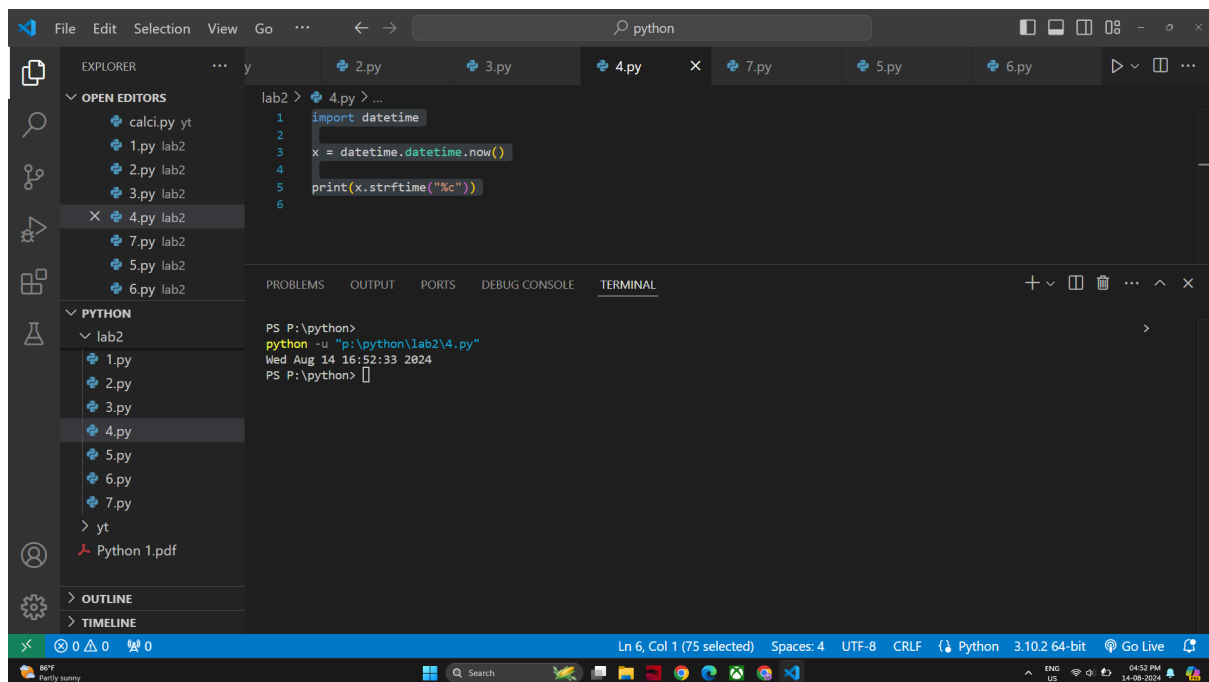


4) Write a python script to print the current date in the following format “Mon August 12 02:26:23 IST 2024”.

```
import datetime

x = datetime.datetime.now()

print(x.strftime("%c"))
```

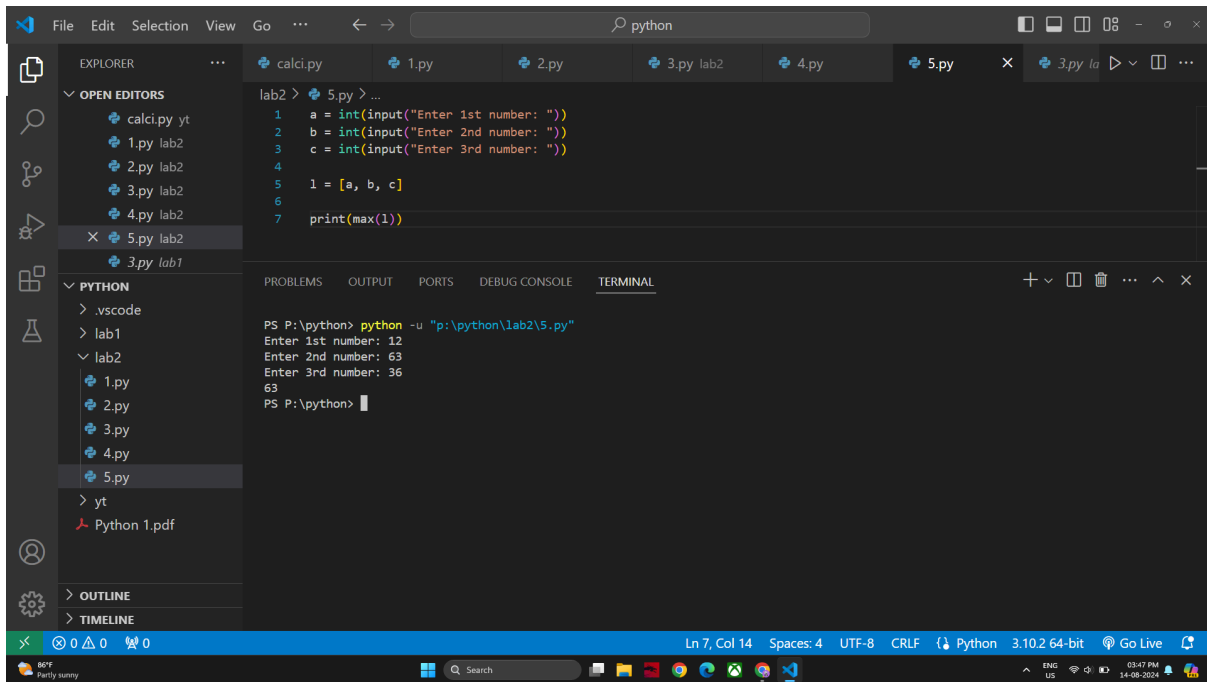


5) Write a python program to find largest of three numbers.

```
a = int(input("Enter 1st number: "))
b = int(input("Enter 2nd number: "))
c = int(input("Enter 3rd number: "))

l = [a, b, c]

print(max(l))
```



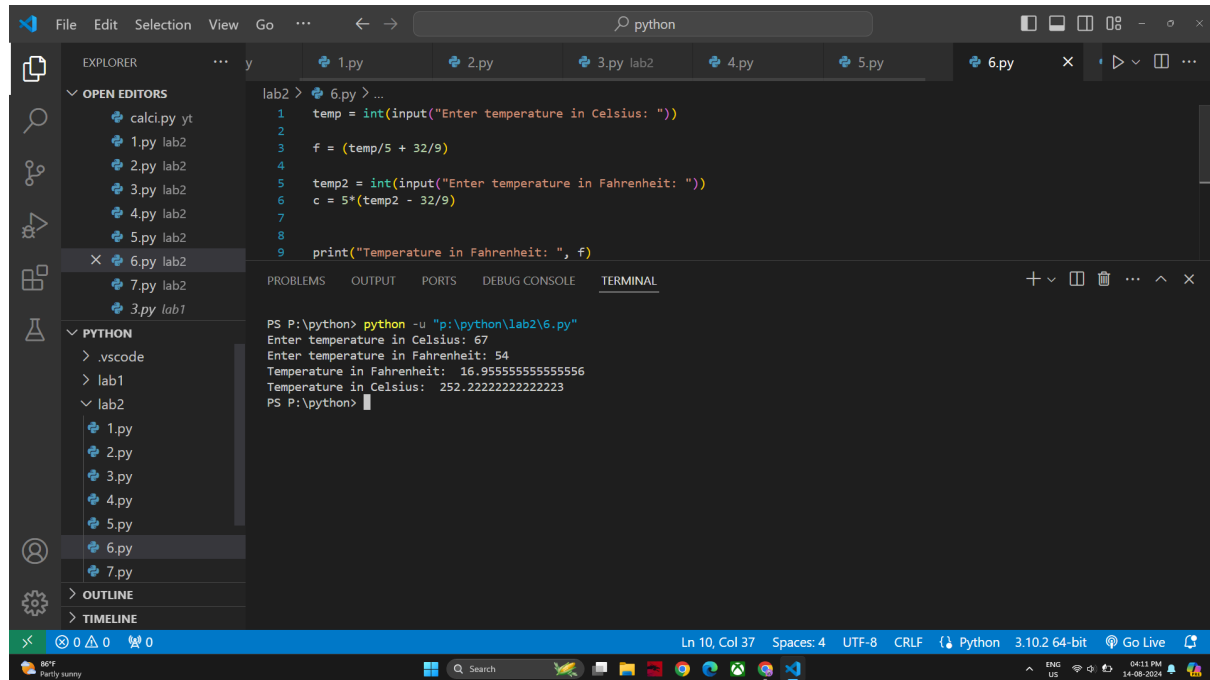
6) Write a Python program to convert temperatures to and from Celsius, Fahrenheit. [Formula : $c/5 = f-32/9$]

```
temp = int(input("Enter temperature in Celsius: "))

f = (temp/5 + 32/9)

temp2 = int(input("Enter temperature in Fahrenheit: "))
c = 5*(temp2 - 32/9)
```

```
print("Temperature in Fahrenheit: ", f)
print("Temperature in Celsius: ", c)
```



The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left shows a project structure with files 1.py through 7.py in a folder named 'lab2'. The main editor window displays the code for '6.py', which is a temperature conversion script. The script prompts the user for temperature in Celsius, converts it to Fahrenheit, prompts for temperature in Fahrenheit, converts it to Celsius, and prints both results. The output window at the bottom shows the execution of the script, with the following output:

```
PS P:\python> python -u "p:\python\lab2\6.py"
Enter temperature in Celsius: 67
Enter temperature in Fahrenheit: 54
Temperature in Fahrenheit: 16.955555555555556
Temperature in Celsius: 252.22222222222223
PS P:\python>
```

7) Write a Python script that prints prime numbers less than 20.

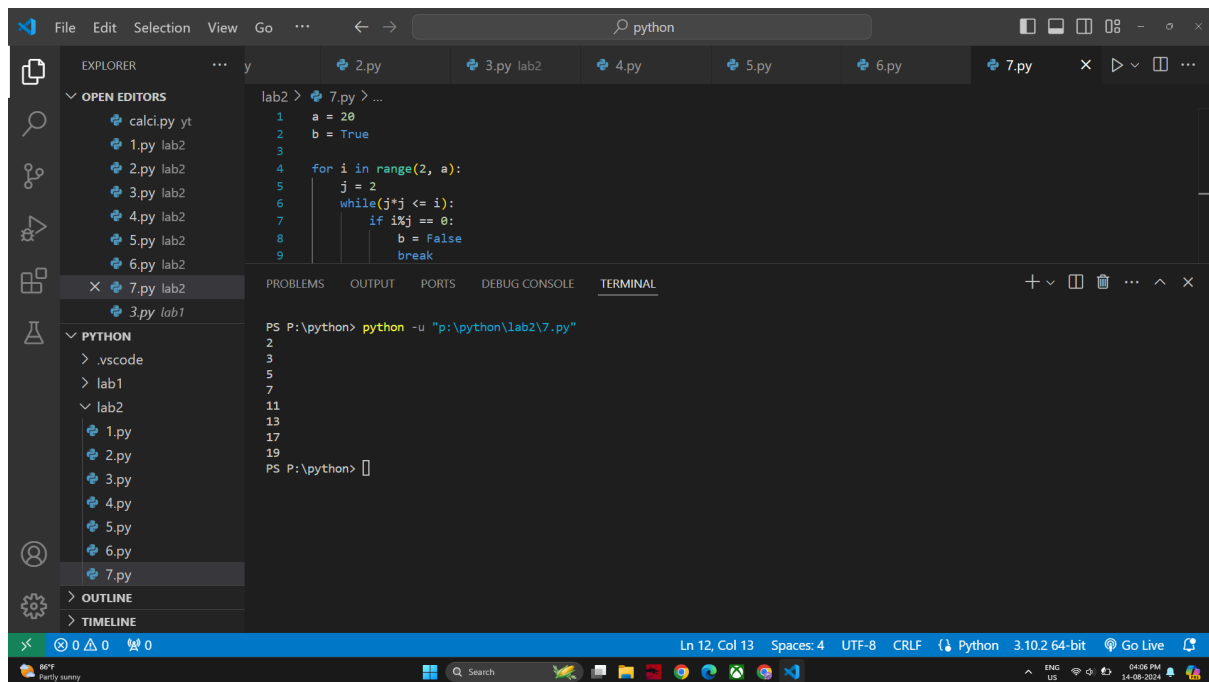
```
a = 20
b = True
```



```

for i in range(2, a):
    j = 2
    while(j*j <= i):
        if i%j == 0:
            b = False
            break
        j+=1
    if b == True: print(i)
b = True

```



8) Write a program that accepts the lengths of three sides of a triangle as inputs. The program output should indicate whether or not the triangle is a right triangle (Recall from the Pythagorean Theorem that in a right triangle, the square of one side equals the sum of the squares of the other two sides).

```

a = int(input("Enter length side. "))
b = int(input("Enter breadth side. "))
c = int(input("Enter hypotenuse side. "))

if c*c == (a*a+b*b): print("This is a right angled triangle")
else:    print("This is not a right angled triangle")

```

The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left displays a project structure with a folder named 'lab2' containing files '1.py' through '7.py'. The main editor window shows the Python code for checking a right-angled triangle. The TERMINAL panel at the bottom shows the execution of the program. It prompts for 'length side.', 'breadth side.', and 'hypotenuse side.'. The first run uses inputs 3, 4, and 5, which correctly identifies it as a right-angled triangle. The second run uses inputs 12, 13, and 14, which correctly identifies it as not a right-angled triangle.

9) Write a python program to find the best of two test average marks out of three test's marks accepted from the user.

Expected Result:

Enter marks for test1 : 45

Enter marks for test2 : 39

Enter marks for test3 : 48

Average of best two test marks out of three test's marks is 46.5

```

a = int(input("Enter marks1: "))
b = int(input("Enter marks2: "))
c = int(input("Enter marks3: "))

avg1 = (a+b)/2
avg2 = (a+c)/2
avg3 = (b+c)/2

print(max(avg1, max(avg2, avg3)))

```

```

lab2 > 7.py > ...
28
29
30 # ques 9
31
32 a = int(input("Enter marks1: "))
33 b = int(input("Enter marks2: "))
34 c = int(input("Enter marks3: "))
35
36 avg1 = (a+b)/2

```

PROBLEMS OUTPUT PORTS DEBUG CONSOLE TERMINAL

```

PS P:\python> python -u "p:\python\lab2\7.py"
Enter marks1: 45
Enter marks2: 39
Enter marks3: 48
46.5
PS P:\python>

```

Ln 34, Col 33 Spaces: 4 UTF-8 CRLF Python 3.10.2 64-bit Go Live

10) Develop a Python program to check whether a given number is palindrome or not and also count the number of occurrences of each digit in the input number.

Expected Result:

Enter a value : 1234234

Not Palindrome

1 appears 1 times

2 appears 2 times

3 appears 2 times

4 appears 2 times

Enter a value : 12321

Palindrome

1 appears 2 times

2 appears 2 times

3 appears 1 times

```
a = input("Enter thr number: ")
b = a[::-1]

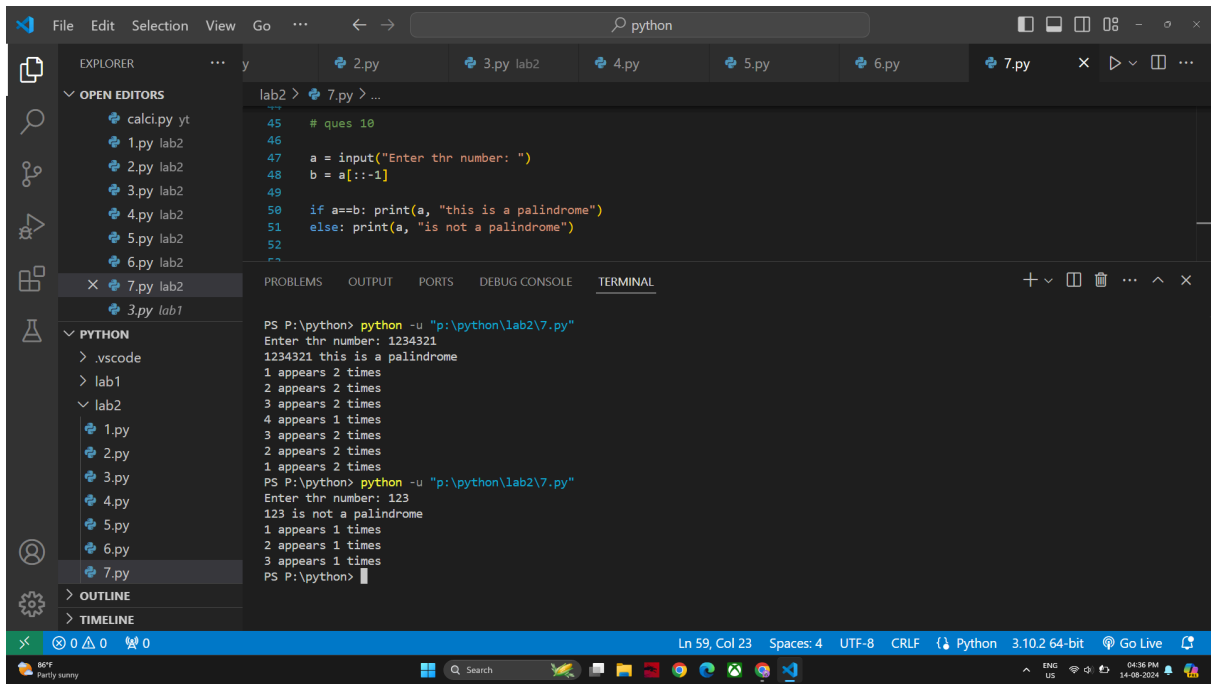
if a==b: print(a, "this is a palindrome")
else: print(a, "is not a palindrome")

# i = 0
# j = len(a)-1
# f = True

# while i<=j:
#     if a[i] != a[j]:
#         print(a, " is Not a palindrome ")
#         f = False
#         break
#     else:
#         i+=1
#         j-=1

# if f == True:  print(a," is a palindrome")

for i in a: print(i, "appears", a.count(i),
```



11) Write a Python program that accepts a sentence and find the number of words, digits, uppercase letters and lowercase letters.

Expected Result:

Enter a sentence : Rama went to Devaraja market to pick 2 kgs of vegetable

This sentence has 11 words

This sentence has 1 digits

2 upper case letters

42 lower case letters

```
a = input("Enter sentence: ")

words = 0
digits = 0
upper = 0
lower = 0

words = a.split(" ")

for i in a:
    if i.isdigit():    digits+=1
    if i.isupper():    upper+=1
    if i.islower():    lower+=1

print("This sentence has", len(words), "words")
print("This sentence has", digits, "digits")
print(lower, "lower case letters")
print(upper, "upper case letters")
```

