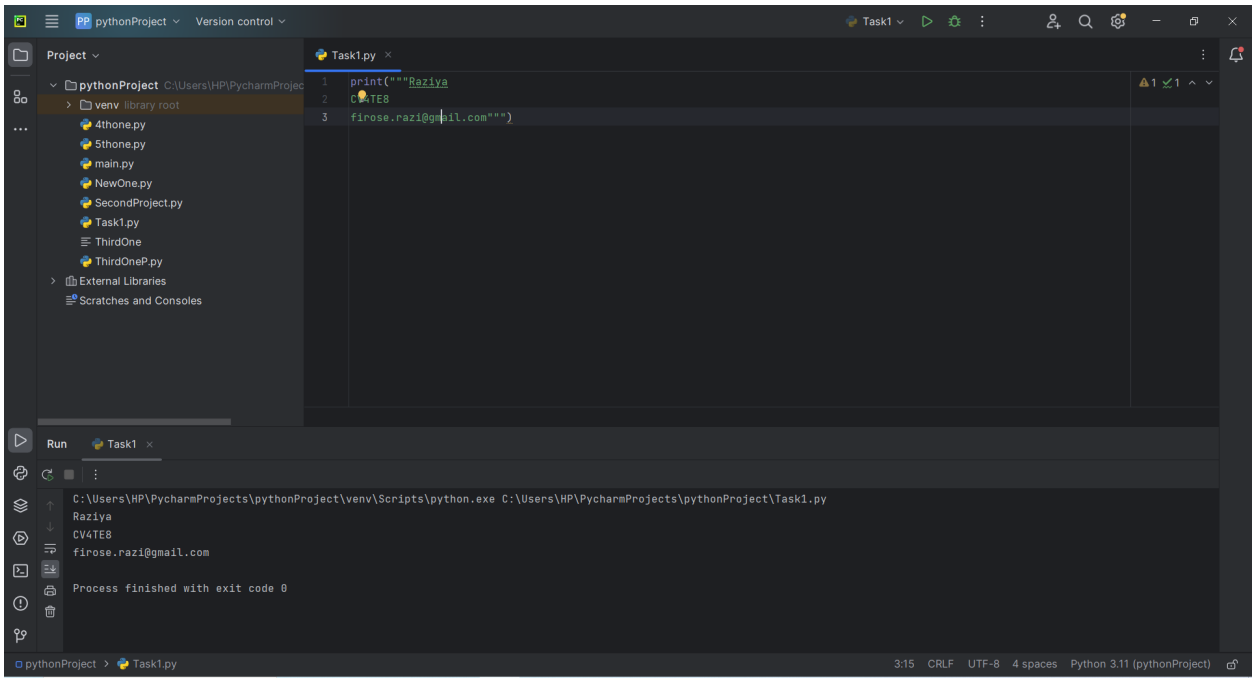
PYTHON ASSIGNMENTS D16

The task for class conducted on 25-08-2023
Task 1: Print function
Python code that prints your name, student number and email address.
An example runs of the program:
Bob
ST1001
bob@gmail.com

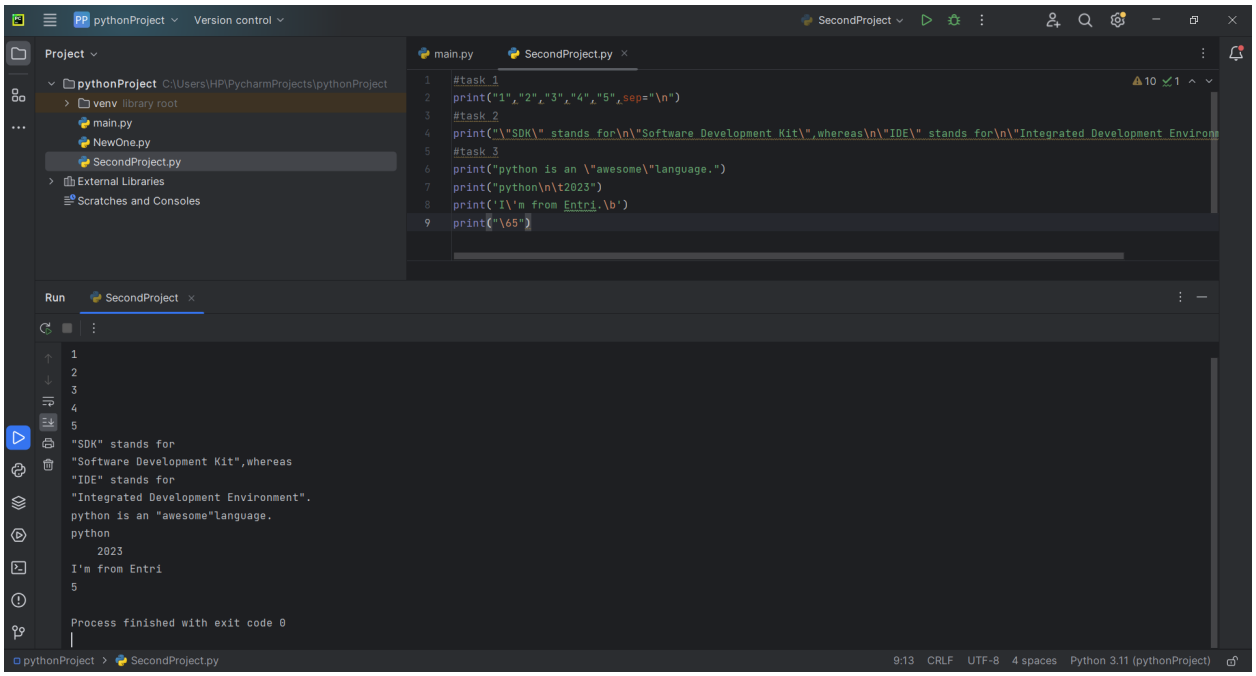


Task 2 The task for class conducted on 01-09-2023
Escape sequences:
Exercise 1:
Write a Python code that displays the numbers from 1 to 5 as steps.
An example runs of the program:

1
2
3
4
5

Exercise 2:
Write a Python code that outputs the following sentence (including the quotation marks and line break) to the screen:
An example run of the program:
"SDK" stands for

"Software Development Kit", whereas
"IDE" stands for
"Integrated Development Environment".
Exercise 3:
Practice and check the output
print("python is an \"awesome\" language.")
print("python\n\t2023")
print('I\'m from Entri.\b')
print("\65")



Task 3 The task for class conducted on 04-09-2023
Datatypes, User-interactive command
Exercise 1
Write Python code that asks the user to enter his/her name and then output/prints his/her name with a greeting.
An example runs of the program:
Please enter your name: Tony
Hi Tony, welcome to Python programming :)
Exercise 2
Name your file: ***PoundsToDollars.py***
Write a program that asks the user to enter an amount in pounds (£) and the program calculates and converts an amount in dollars ($)
An example runs of the program:
Please enter the amount in pounds: XXX
£ XXX are $ XXX

Exercise 3

Name your file: ***MyInfoInput.py***

Write a program that asks the user to enter his/her name, student number, and email address and display it as in the example run.

An example runs of the program:

Enter your name: Bob

Enter your student number: ST1001

Enter your email address: bob@gmail.com

Hello Bob, thanks for entering your details. We will email you at bob@gmail.com with subject id: ST1001 for further information.

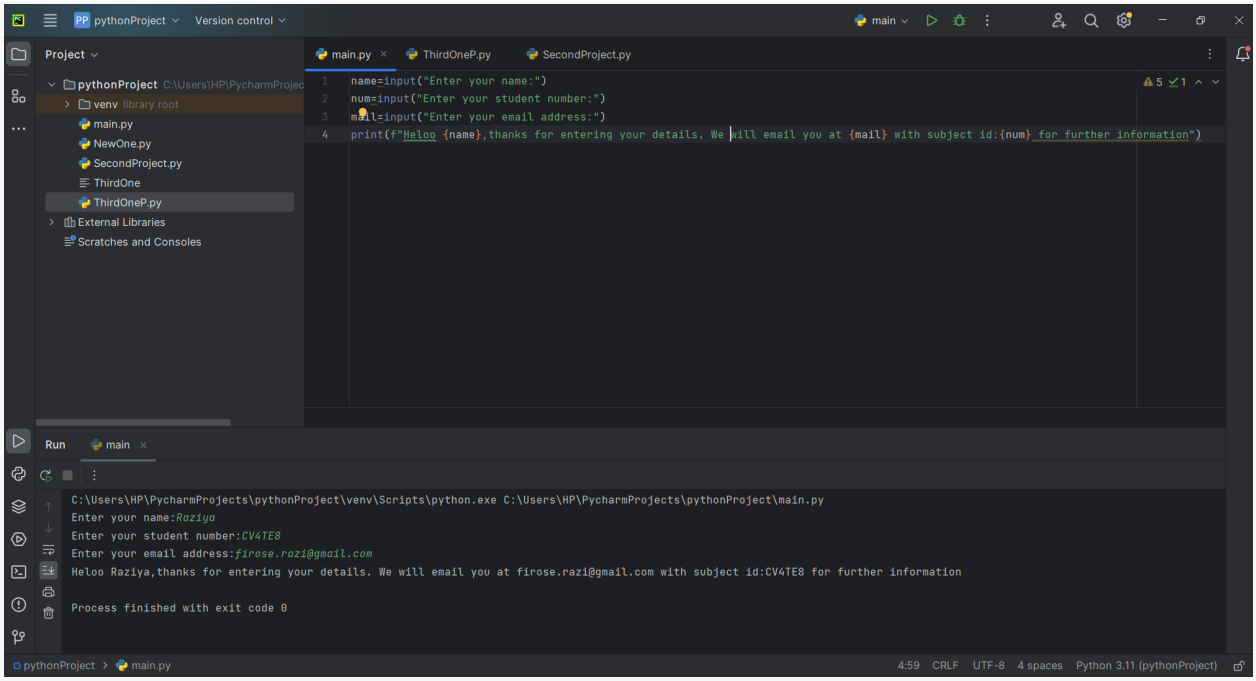
Exercise 4

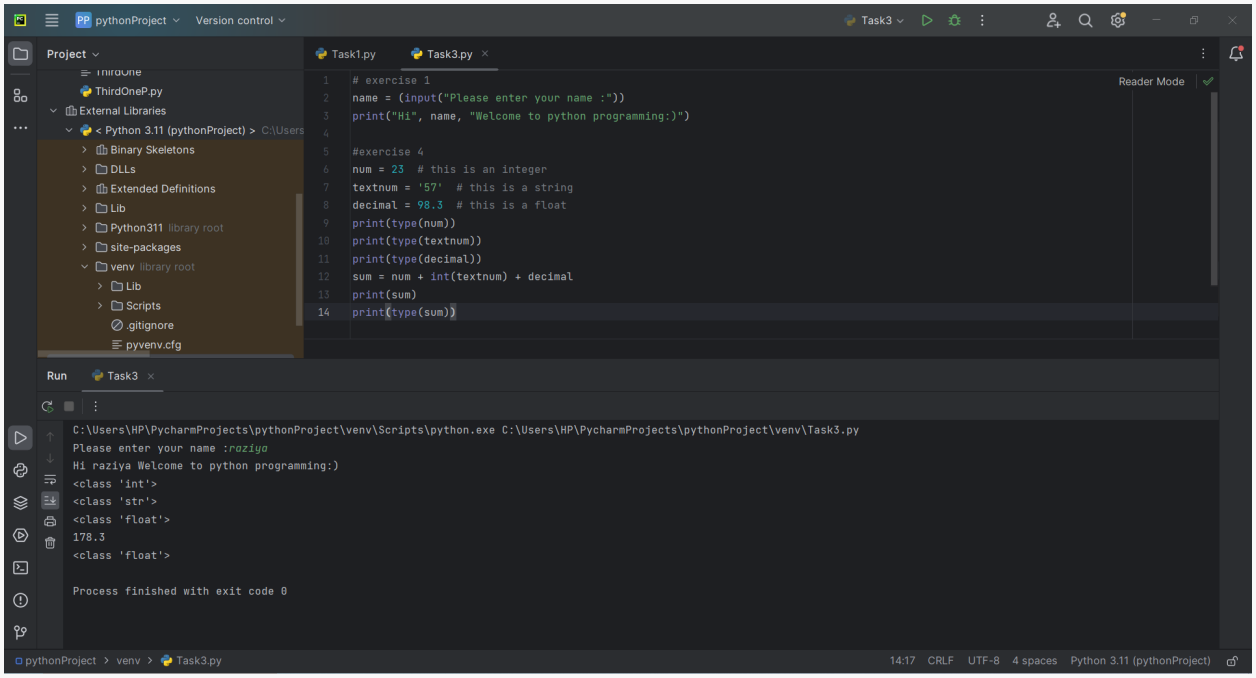
Define the variables below. Print the types of each variable. What is the sum of your variables? (*Hint:* use a type conversion function.) What data type is the sum?

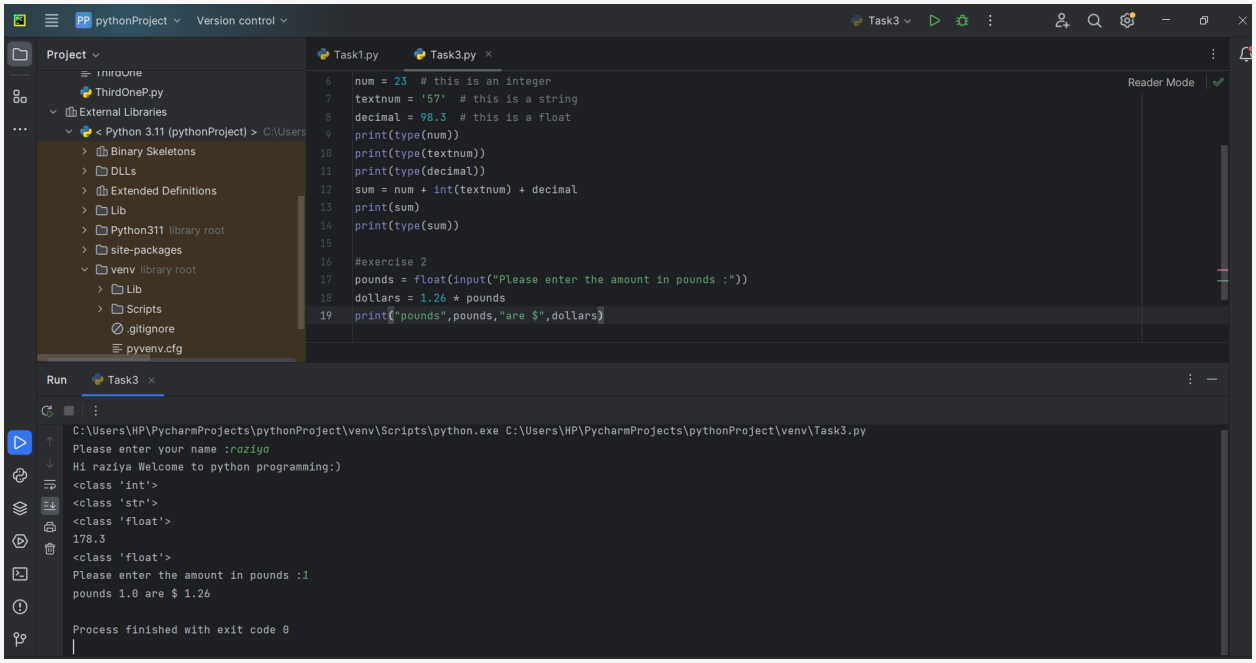
num=23

textnum="57"

decimal=98.3 (edited)







Task 4 Task for class conducted on 08-09-2023

Selection Statements and Loops:

SELECTION STATEMENTS:

Exercise 1

Name your file: MonthNames.py

Write a program that reads an integer value between 1 and 12 from the user and prints output for the corresponding month of the year.

An example run of the program (numbers in bold are typed in by the user)

Enter the month: 3

Month 3 is March

Exercise 2

Name your file: EvenOddNumbers.py

Write a program that reads an integer value from the user and prints output whether it is odd or even.

An example run of the program (numbers in bold are typed in by the user)

Enter a number: 13

13 is “even”

Exercise 3

Name your file: CinemaTickets.py

A certain cinema currently sells tickets for the full price of 6 pounds, but always sells tickets for half price to people who are less than 16 years old, and for a third of the price for people who are 60 years old or more.

An example run of the program (numbers in bold are typed in by the user)

Enter your age: 63

Your ticket costs £2.00

Exercise 4

Name your file: BodyMassIndex.py

Write a program to calculate your BMI and give weight status. Body Mass Index (BMI) is an internationally used measurement to check if you are a healthy weight for your height. The metric BMI formula accepts weight in kilograms and height in meters:

BMI= weight(kg)/height2(m2)

BMI Weight Status Categories table

BMI range - kg/m2	Category
Below 18.5	Underweight
18.5 -24.9	Normal
25 - 29.9	Overweight
30 & Above	Obese

An example run of the program (numbers in bold are typed in by the user)

Enter your weight in (kg): 75

Enter your height in (m): 1.70

Your BMI is: 25.95

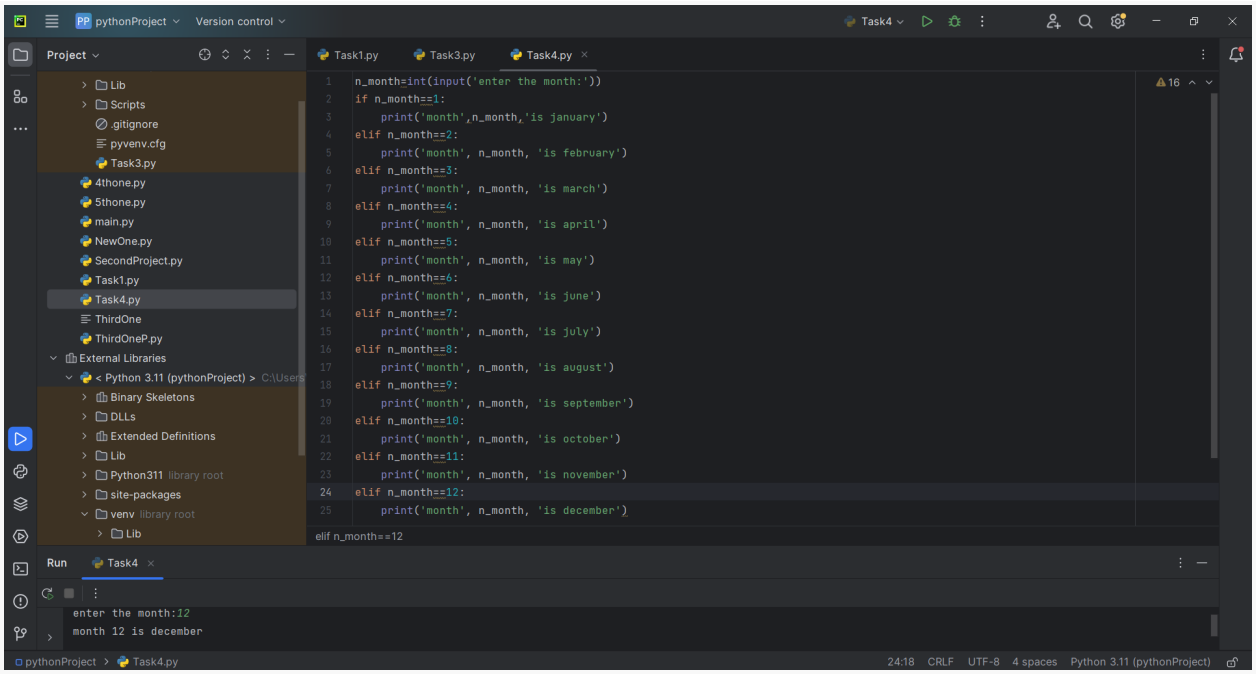
You are in the “overweight” range.

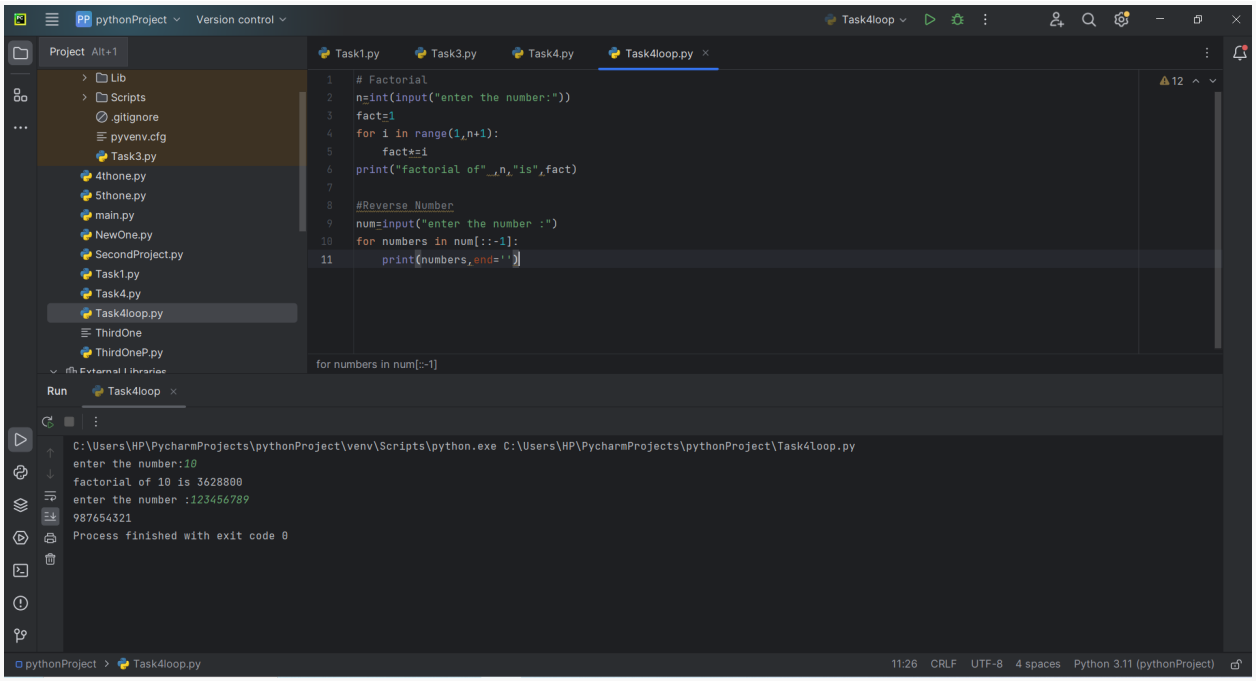
LOOPS:

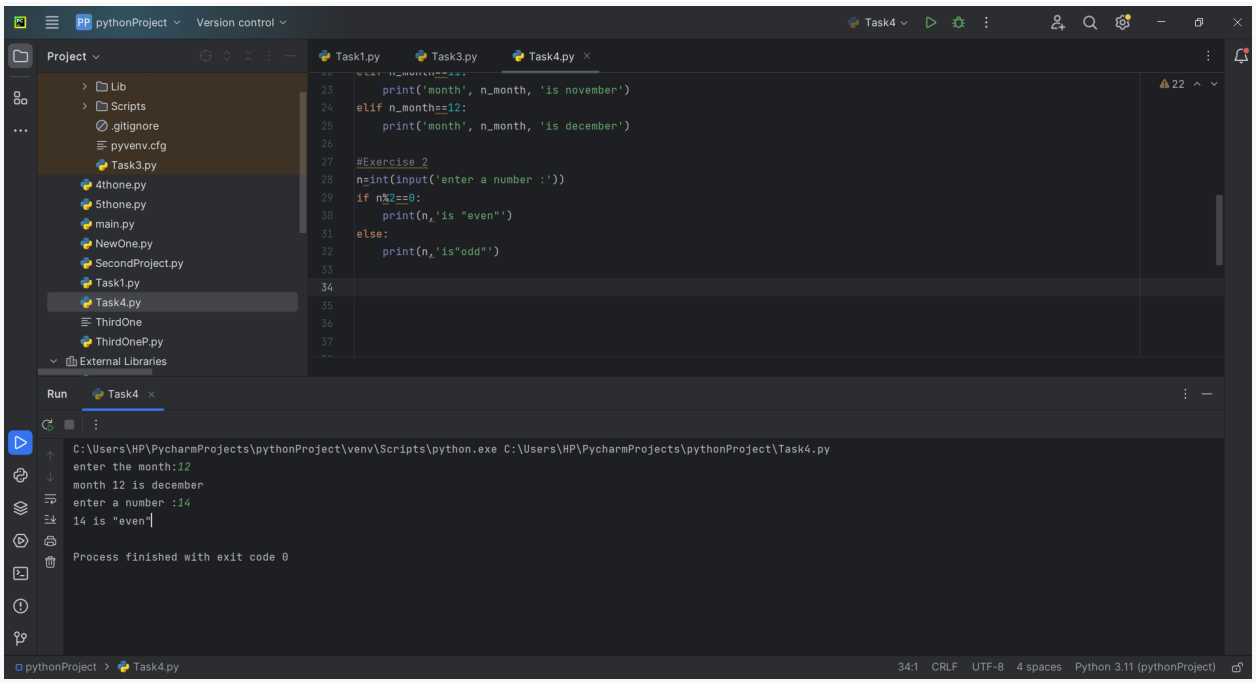
1. Find the factorial of a given number using loops(note the number is received from the user)

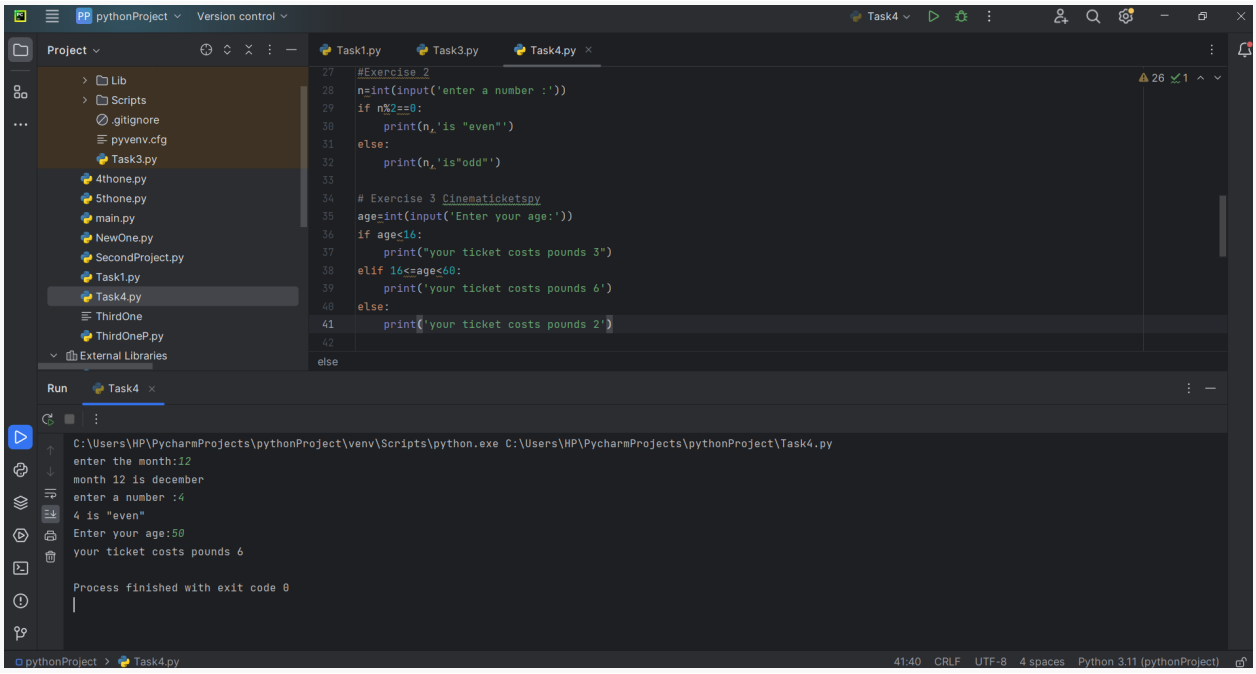
2. Finding the multiples of a number using a loops.

3.Write a program to find the reverse of a number using loops. (edited)






pythonProject
Version control
Task4
Project
Task1.py
Task3.py
Task4.py
Lib
Scripts
.gitignore
pyvenv.cfg
Task3.py
4thone.py
5thone.py
main.py
NewOne.py
SecondProject.py
Task1.py
Task4.py
ThirdOne
ThirdOneP.py
External Libraries
print('month', n_month, 'is november')
elif n_month==12:
print('month', n_month, 'is december')
#Exercise 2
n=int(input('enter a number :'))
if n%2==0:
print(n,'is "even"')
else:
print(n,'is"odd"')
Run
Task4
C:\Users\HP\PycharmProjects\pythonProject\venv\Scripts\python.exe C:\Users\HP\PycharmProjects\pythonProject\Task4.py
enter the month:12
month 12 is december
enter a number :14
14 is "even"
Process finished with exit code 0
pythonProject
Task4.py
34:1
CRLF
UTF-8
4 spaces
Python 3.11 (pythonProject)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#Exercise 2
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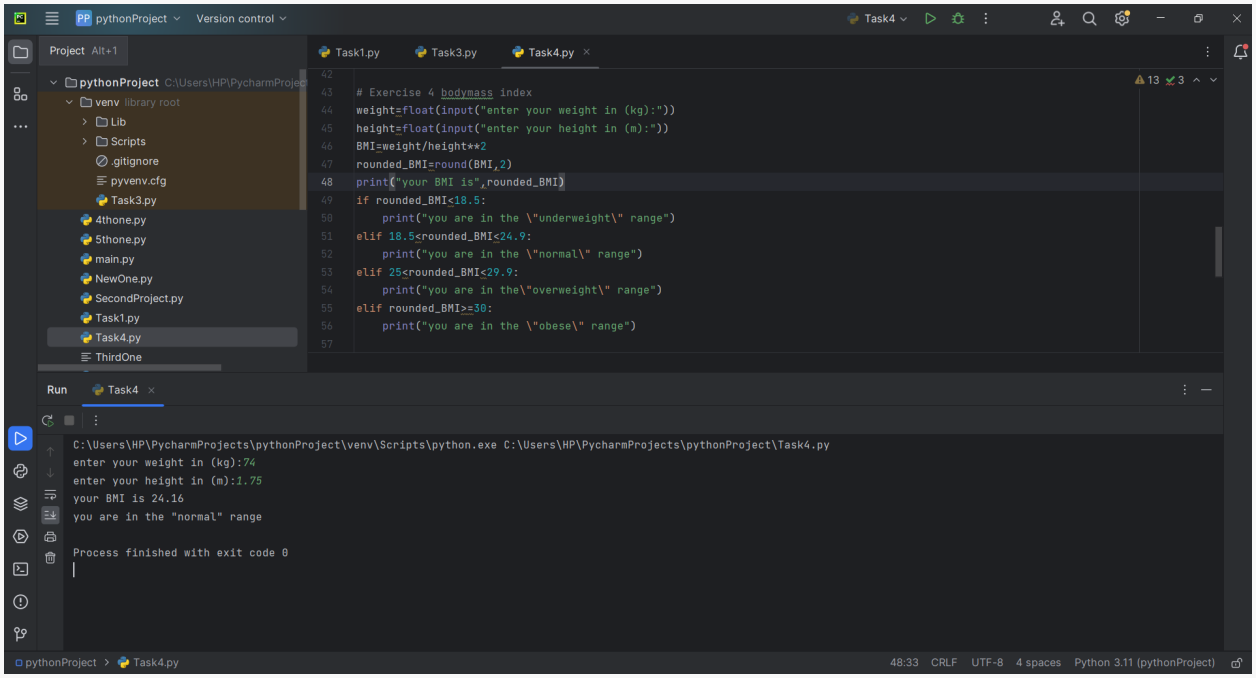
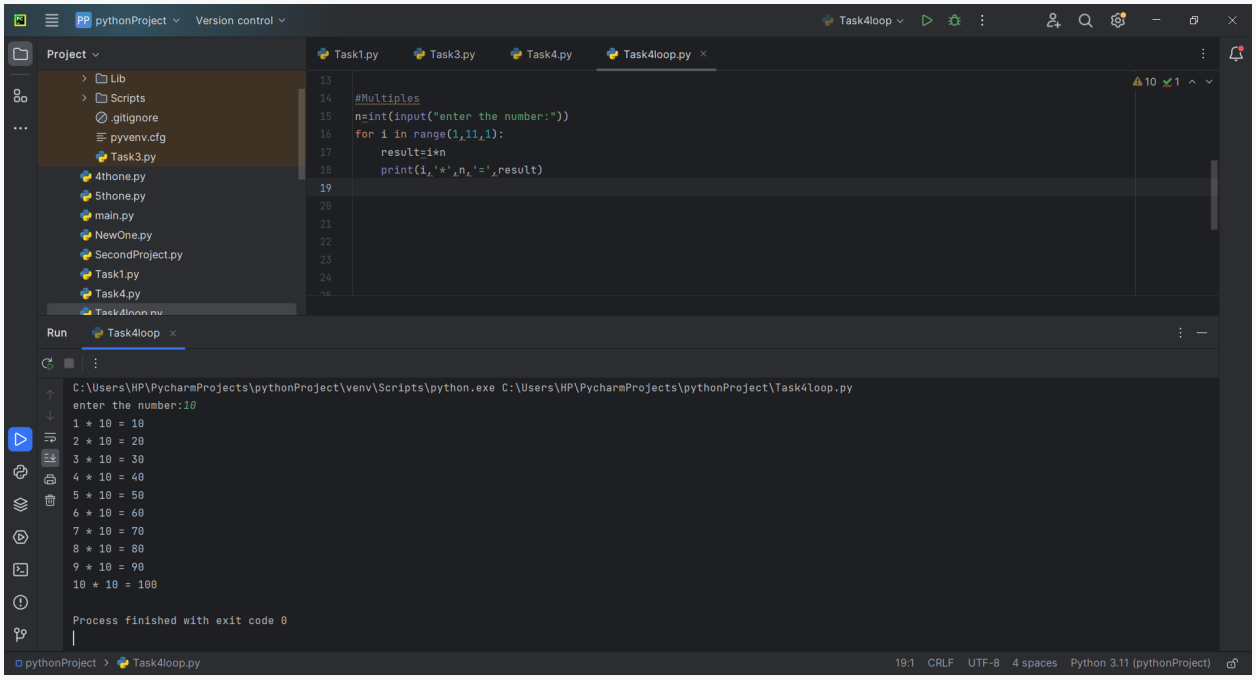
if n%2==0:
print(n,'is "even"')
else:
print(n,'is"odd"')
# Exercise 3 Cinematicketspy
age=int(input('Enter your age:'))
if age<16:
print("your ticket costs pounds 3")
elif 16<=age<60:
print('your ticket costs pounds 6')
else:
print('your ticket costs pounds 2')
else
Run
Task4
C:\Users\HP\PycharmProjects\pythonProject\venv\Scripts\python.exe C:\Users\HP\PycharmProjects\pythonProject\Task4.py
enter the month:12
month 12 is december
enter a number :4
4 is "even"
Enter your age:50
your ticket costs pounds 6
Process finished with exit code 0
pythonProject
Task4.py
41:40
CRLF
UTF-8
4 spaces
Python 3.11 (pythonProject)





Task 5The task for class conducted on 11-09-2023

Break and Continue & Nested Loops

1 Name your file: TrianglePattern.py

Write a program that display a triangle made up of asterisk symbols.

An example runs of the program

*

* *

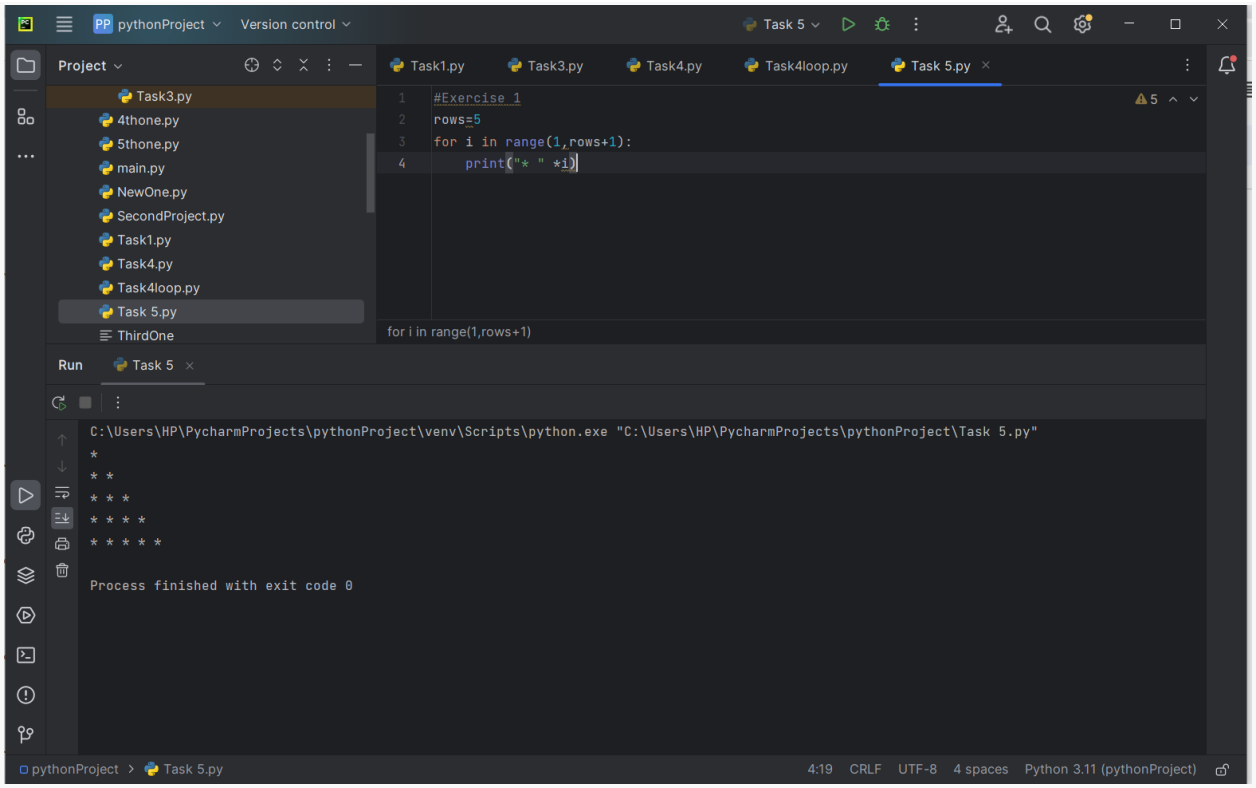
* * *

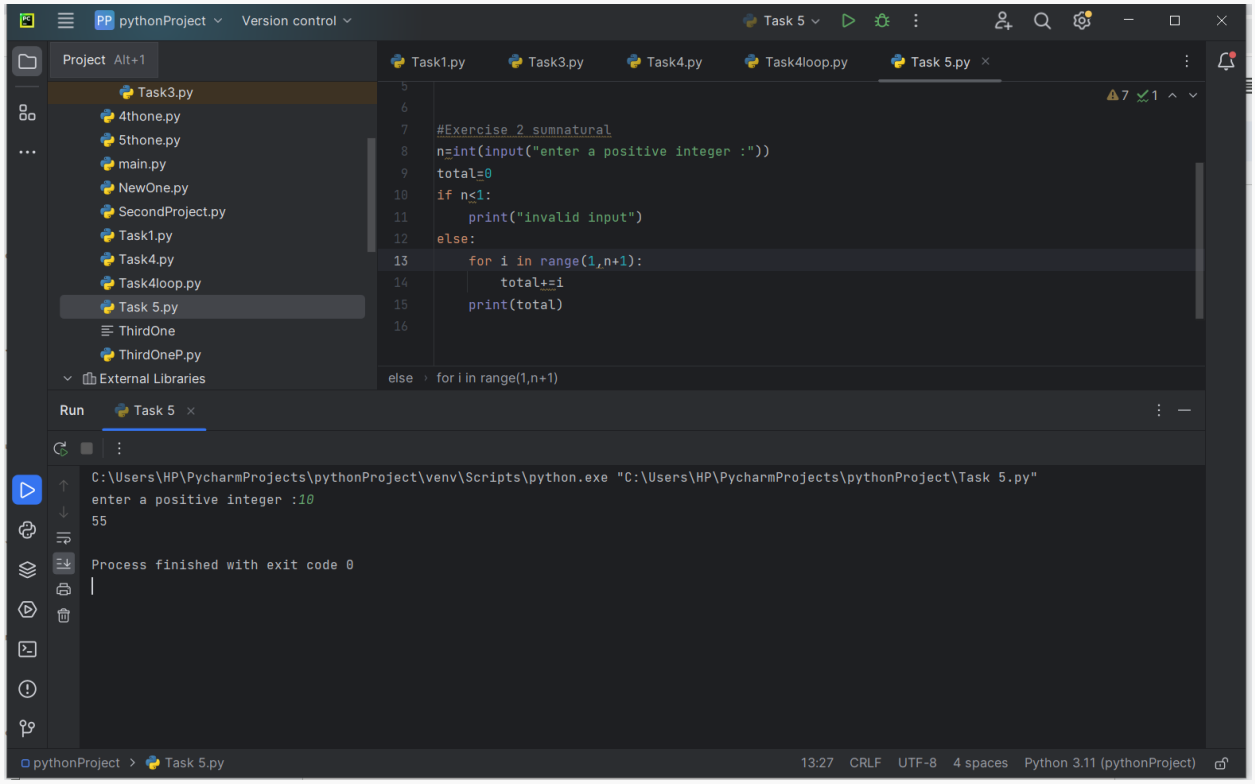
* * * *

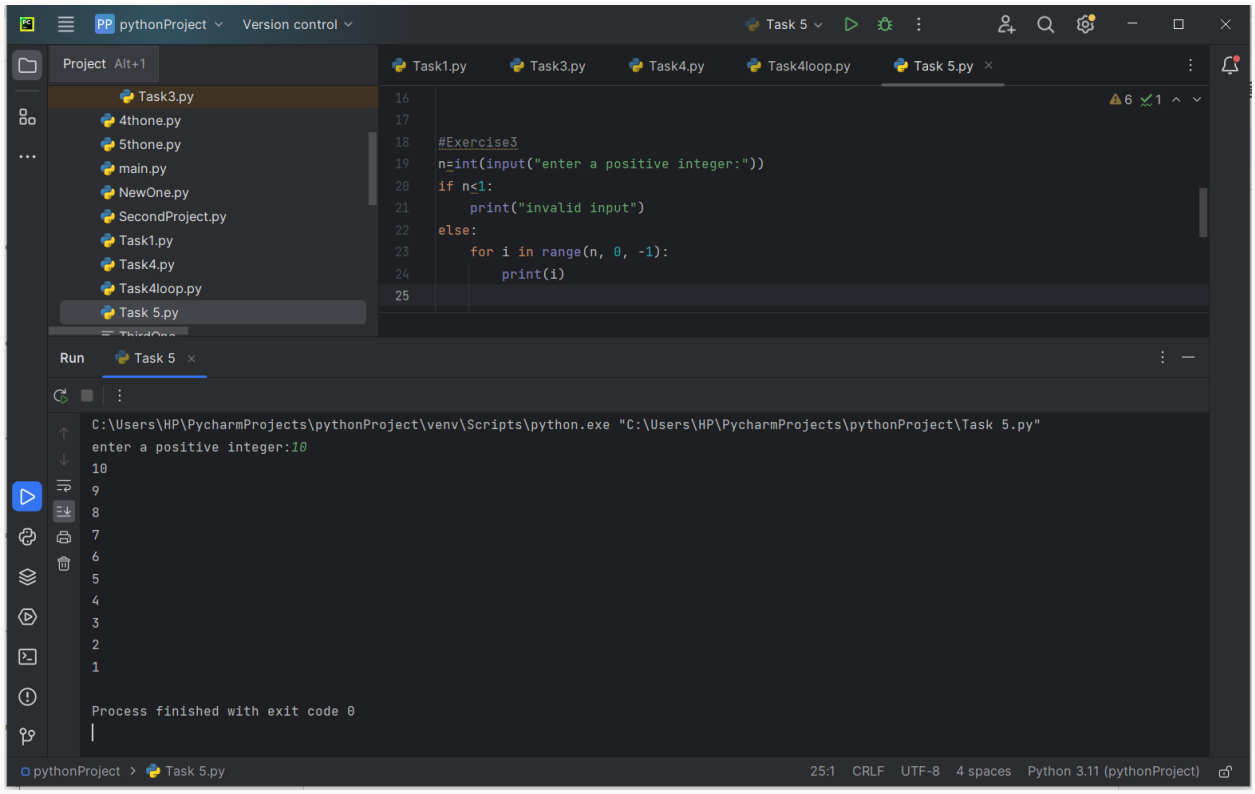
* * * * *

2 Write a program that prompts the user for a positive integer, and then outputs a list of all positive integers that are less than or equal to the input value. However, if the input value is less than 1, the program should print "Invalid Input" and break.

3 Write a program that calculates the sum of the first n natural numbers. The program should prompt the user for a positive integer n, and then output the sum of the first n natural numbers. However, if the input value is less than 1, the program should print "Invalid Input" and break.







Task 6The task for class conducted on 18-09-2023

List

Create a list and perform the following:

1 Insert 3 new values into the list and print the updated list.

2 Remove the second element from the list and print the updated list.

3 Sort the list in ascending order and print the sorted list.

4 Reverse the list and print the reversed list.

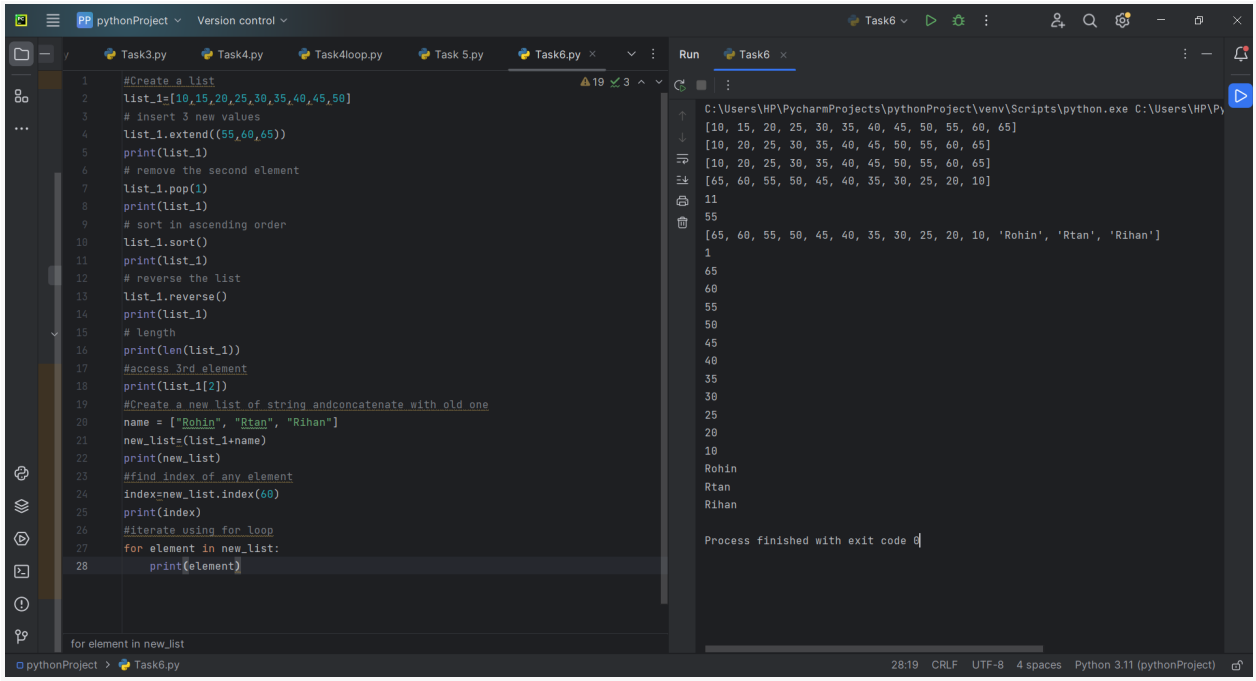
5 Find the length of the list and print the length.

6 Access the third element in the list and print the element.

7 Create a new list of strings and concatenate the two lists into a third list.

8 Find the index of a specific element in the list and print the index.

9 Use a for loop to print each element in the list.



Task 7 The task for class conducted on 22-09-2023

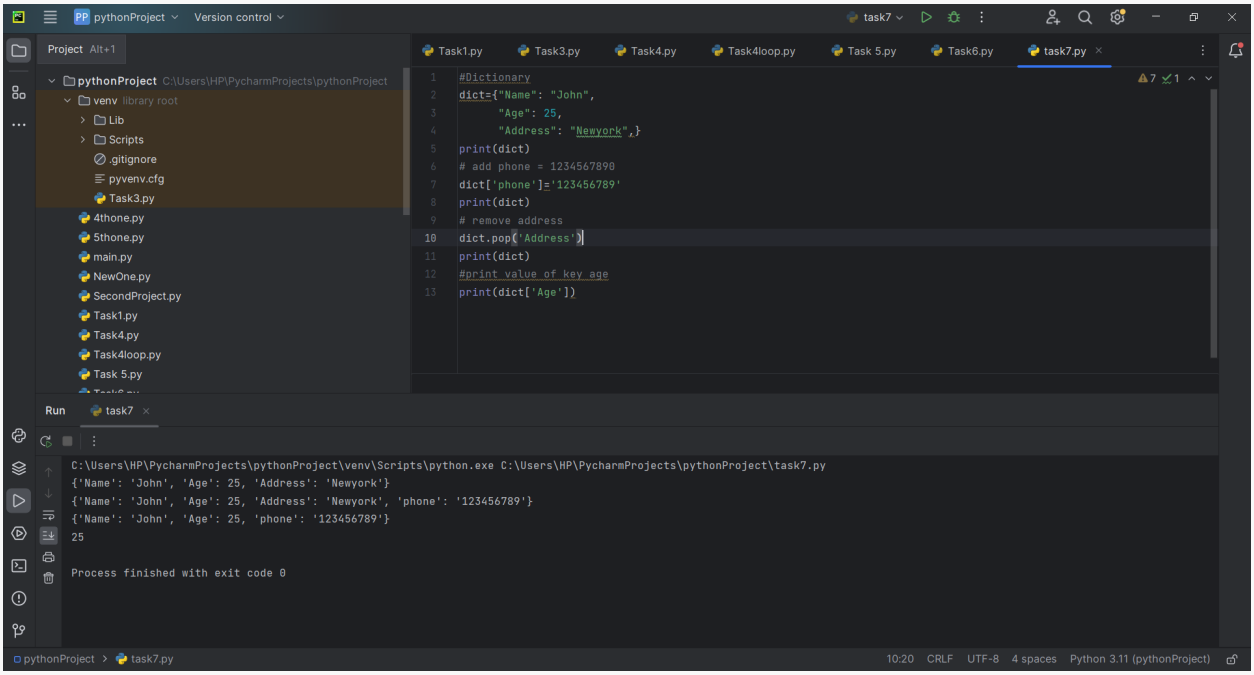
Dictionary

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

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

3. Remove the key 'address' from the dictionary created in Q1.

4. Print the value of the key 'age' from the dictionary created in Q1.



Task8 Task for class conducted on 25-09-2023

Sets, Tuples

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

2 Add the value 6 to the set created in Question 1.

3 Remove the value 3 from the set created in Question 1.

4 Print the length of the set created in Question 1.

5 Create a new set by union of the set created in Question 1 with another set {6, 7, 8}.

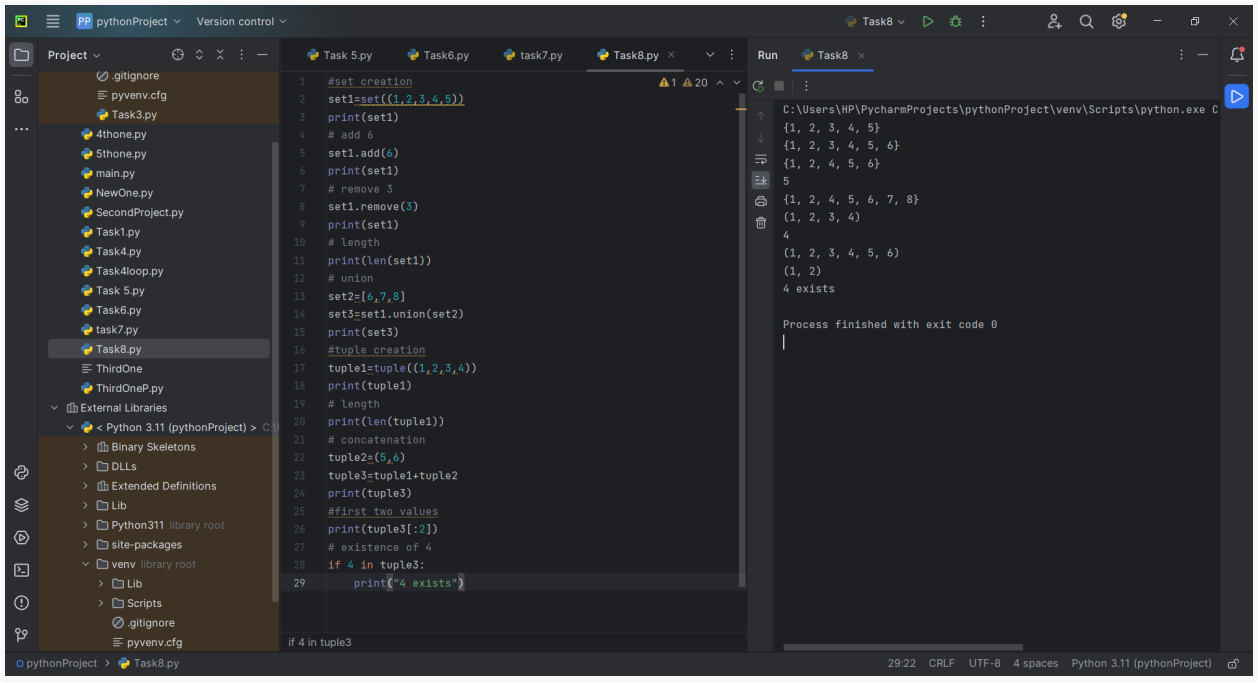
6 Create a tuple with values 1, 2, 3, and 4

7 Print the length of the tuple created in Question 6.

8 Create a new tuple by concatenating the tuple from Question 6 with another tuple (5, 6).

9 Print the first two values of the tuple created in Question 8.

10 Check if the value 4 exists in the tuple created in Question 1.



Task 9Task for class on 06-10-2023:

Functions:

Exercises 1

Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings

Sample List : ['abc', 'xyz', 'aba', '1221']

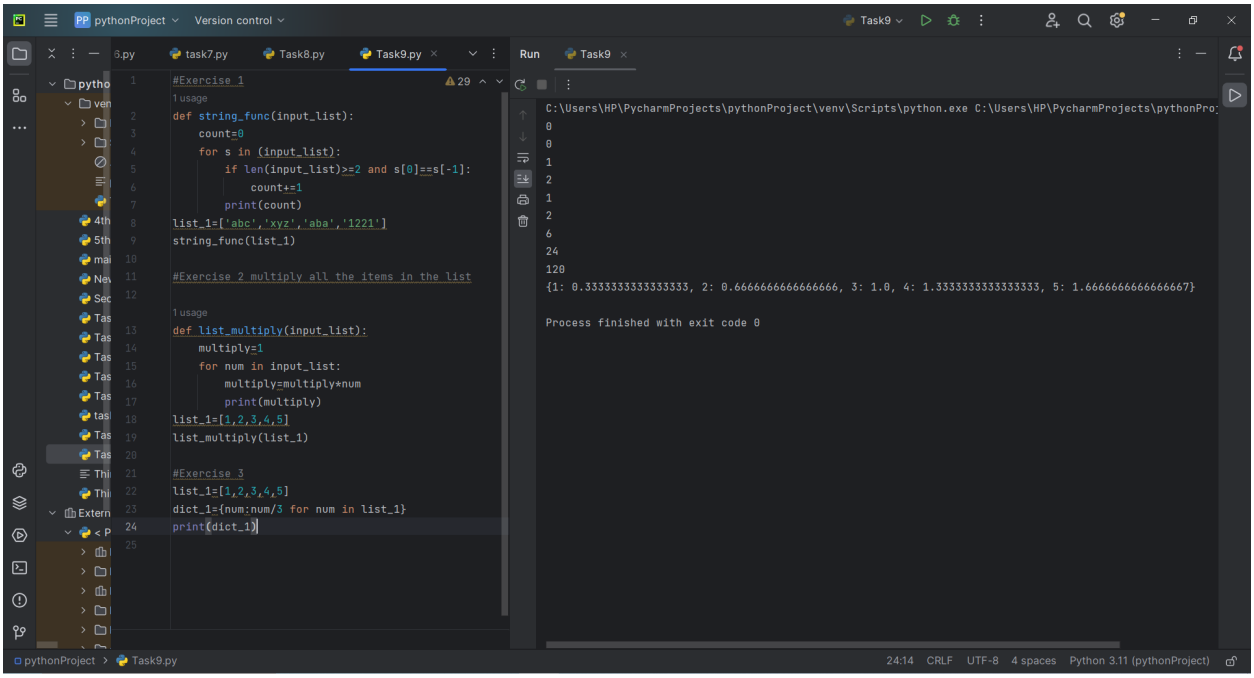
Expected Result : 2

Exercises 2

Write a Python program to multiply all the items in a list

Exercise 3

Create dictionary from a list where the keys are the elements of the list and value of the dictionary is result after dividing the element by 3

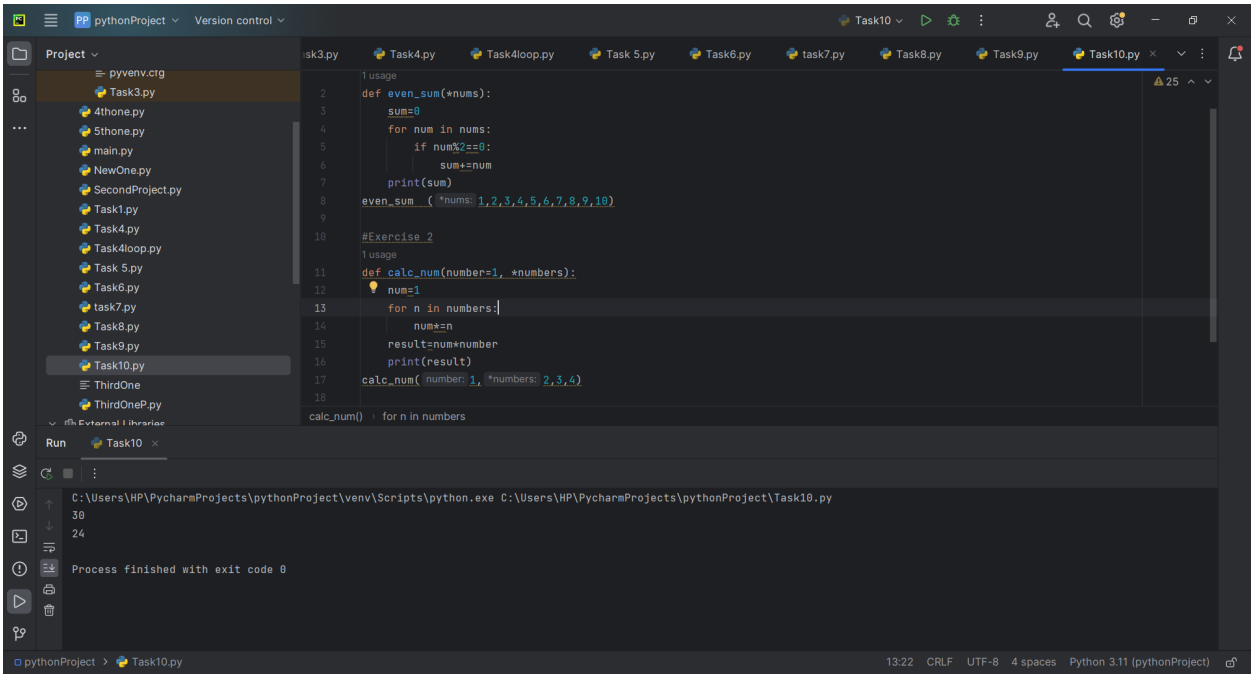


Task 10 Task for class conducted on 09-10-2023

Functions:

1 Create a function that takes in an arbitrary number of arguments and prints the sum of all the even numbers. If no even numbers are provided, the function should print 0.

2 Create a function that takes in two required arguments, one optional keyword argument with a default value of 1, and one arbitrary argument. The function should print the product of the two required arguments, multiplied by the optional keyword argument, multiplied by the product of all the values in the arbitrary argument.



Task 11Task for class conducted on 13-10-2023:

Functions:

Write a function to implement calculator

Sample run:

Press 1 for addition

Press 2 for subtraction

Press 3 for Multiplication

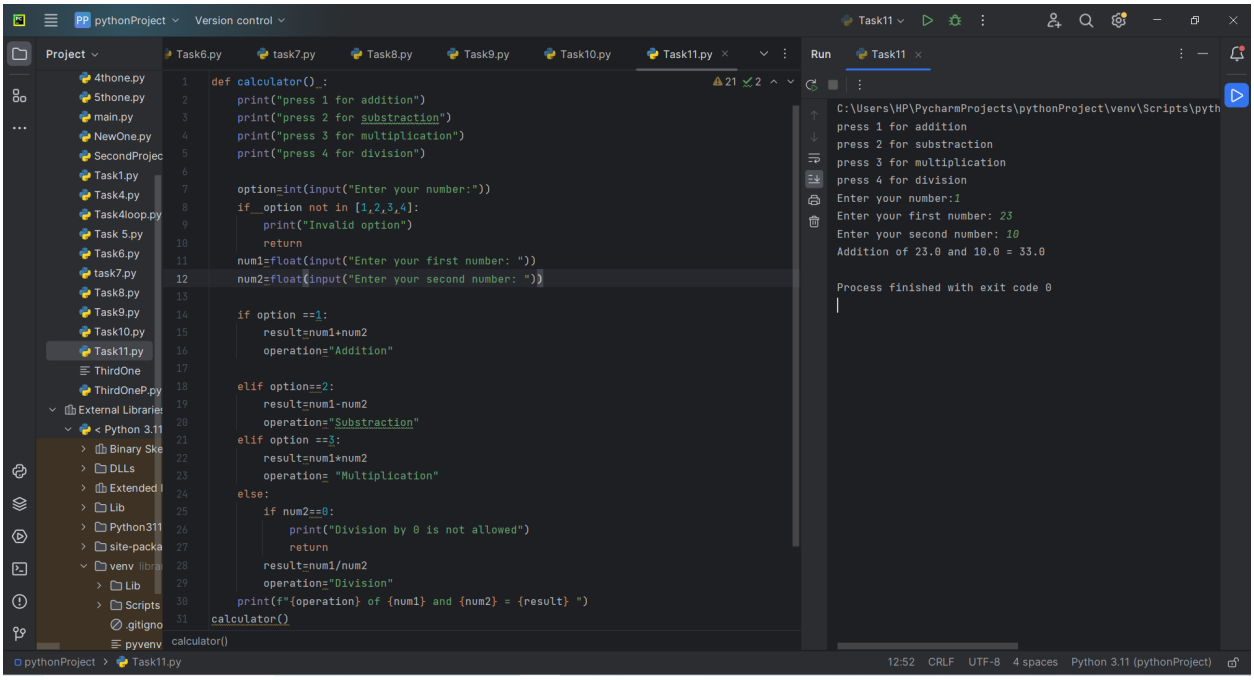
Press 4 for Division

Enter your option: 1

Enter your first number: 23

Enter your second number: 10

Addition of 23 and 10 is : 33



Task 12

Task for class on 16-10-2023:

Lambda…reduce()

1 Write a lambda function that takes in a parameter and returns True if the parameter is even and False otherwise.

2 Write a Python program to create a lambda function that adds 15 to a given number passed in as an argument, also create a lambda function that multiplies argument x with argument y and prints the result.

3 Write a Python program to evaluate a given mathematical expression using the eval() function.

expression = "3 * 5 + 2"

4 Write a Python program to evaluate a given logical expression using the eval() function.

expression = "5 > 2 and 3 < 4"

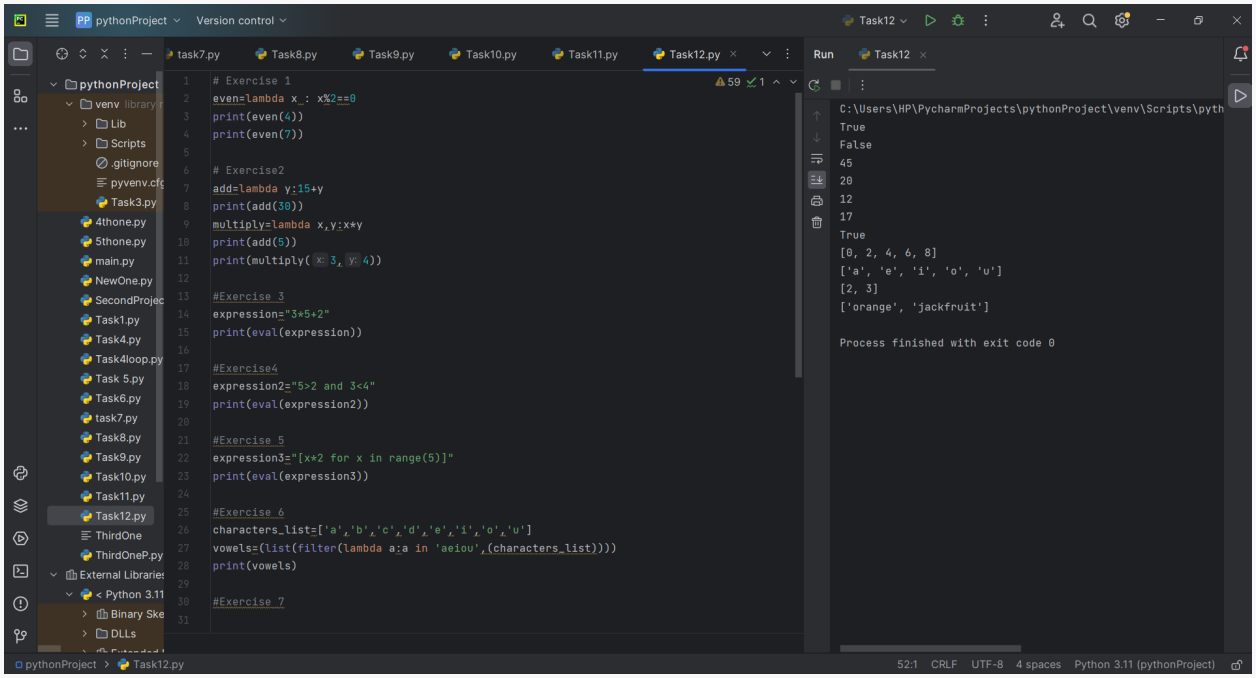
5 Write a Python program to evaluate a given Python expression using the eval() function.

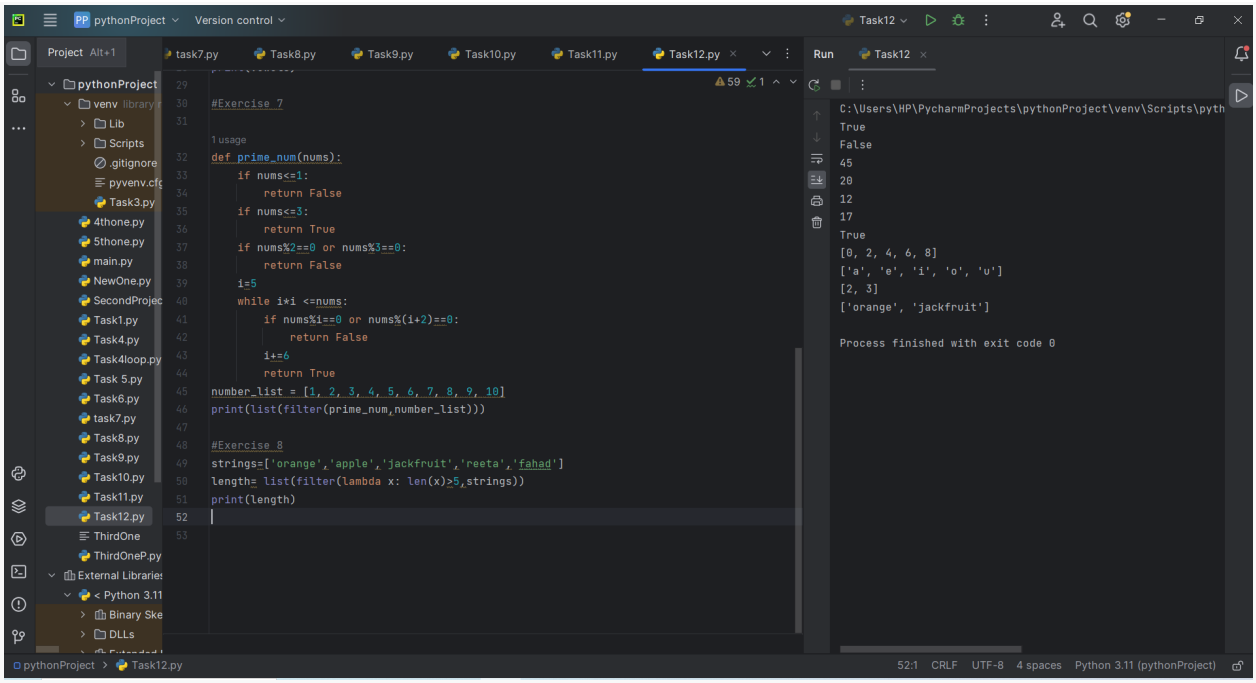
expression = "[x * 2 for x in range(5)]"

6 Write a Python program to filter out the vowels from a given list of characters using the filter() function.

7 Write a Python program to filter out the prime numbers from a given list of integers using the filter() function.

8 Write a Python program to filter out the strings with length greater than 5 from a given list of strings using the filter() function





Task 13 Task for class on 20-10-2023:

Generators and Decorators:

Exercise 1:

Write a generator function that takes a string and yields each word in the string

Exercise 2:

Write a generator function that takes a list of integers and yields only the even numbers

Exercise 3:

Write a generator function that takes a list of strings and yields only the strings that start with a vowel.

Exercise 4:

Write a decorator function that logs the arguments and return value of a function.