Problem Solving Using Python and R Lab

Lab3. Python Functions and Modules

Question 1. Create a function **prime()** that receives an integer and returns whether n is prime or not. Print all prime numbers from 1 to 100 by calling **prime()** function. For example,

prime(1)

prime(2)

…….

prime(100)

Question 2. Develop a simple arithmetic calculator for 4 operations. The program should continue calculation until user types 'q' to quit. A sample user interaction can be:

- Enter operator (q to quit): +
- Enter value 1: 10
- Enter value 2: 20
- Result = 30

Create 4 functions **add(), subtract(), multiply() and divide()** that receives two values and returns the result of the operation.

Now, perform the following operations by calling the corresponding functions. Validate your outputs.

1. 10+20
2. 20-5
3. 8*5
4. 50/3

Question3. Create a function **factorial()** that takes an integer and returns its factorial value.

- You can create as a non-recursive version of factorial.
- Also, check factorial of negative number does not exist.
- Factorial of 0 is 1.
- Save this Python file as **factorial_definition.py**.

Now, open another file and you can import factorial_definition.py as follows:

- **import factorial_definition**
- You can call factorial function as **factorial_definition.factorial()**.

Now, print the following factorial values:

1. factorial_definition.factorial(3)
2. factorial_definition.factorial(5)
3. factorial_definition.factorial(10)