

Problem Set 2 Exercise #12: Count Primes

Reference: Lecture 5 notes

Learning objective: Repetition statements

Estimated completion time: 30 minutes

Problem statement:

Write a program **count_primes.c** to read in a positive integer. Let's call it *limit*. Your program is to compute the number of primes from 1 through *limit* (inclusive).

For example, if *limit* = 10, then the answer is 4 since there are 4 primes in range [1, 10]. They are 2, 3, 5 and 7.

Notes:

This task is a continuation of Exercise #11 in which you check if a given number is a prime. Therefore you may largely reuse the code written in that exercise.

After attempting these two exercises, you should reflect and have a better understanding of modular design – how it makes logic clearer and coding incremental.

Sample run #1:

```
Enter limit: 10
Number of primes (1-10): 4
```

Sample run #2:

```
Enter limit: 9999
Number of primes (1-9999): 1229
```