NATIONAL UNIVERSITY
OF COMPUTER & EMERGING SCIENCES
PESHAWAR CAMPUS

ASSIGNMNET-3

INSTRUCTIONS:

Please keep the following in mind:

- Use your **NU EMAIL ID** to Submit Assignment, Failure to do so will lead to **Zero**
- Do not share your code with anyone else.
- You must submit the **.c** files only. Make sure you name as rollno_name_dept_sec.c
- For example: **P23_1234_Name_CS_1C.c**
- Make sure you follow the naming schemes of the **.c** files correctly. Failure to do so will result in getting **ZERO.**
- No submissions other than **Classroom** will be entertained.
- Make sure your code compiles and runs. If a piece of code fails to compile, you'll be given a **ZERO.**
- All submissions will be checked for plagiarism.
- You are not allowed to copy code from the internet or any other individual.
- **Hardcoding** any test case will lead to ZERO
- Any sort of plagiarism will lead to **ZERO.**
- **EMAIL: p200128@pwr.nu.edu.pk/p200025@pwr.nu.edu.pk for any queries. WhatsApp messages will lead to ZERO.**

1. New School Game

A high school has “n” number of students and “m” number of lockers. For simplicity we are taking 100 students and 100 lockers. On the first day of school, the principal plays the following game: She asks the first student to go and open all the lockers. She then asks the second student to go and close all the even-numbered lockers. The third student is asked to check every third locker. If it is open, the student closes it; if it is closed, the student opens it. The fourth student is asked to check every fourth locker. If it is open, the student closes it; if it is closed, the student opens it. The remaining students continue this game. In general, the nth student checks every nth locker. If the locker is open, the student closes it; if it is closed, the student opens it. After all the students have taken their turn, some of the lockers are open and some are closed. Your job is to tell how many lockers are open at the end of the game.

1.1 Tasks to do.

There are four main tasks to complete:

1. You have to implement this scenario using a function named “**openLocks()”,** which takes two input parameters i.e **number_of_lockers** and **number_of_students** that returns the number of lockers that are opened.

2. Your job now is to write a function named “**mostTouchableLocker()**” which takes two input parameters i.e **number_of_lockers** and **number_of_students** that returns the locker number which is touched by most of the students.

3. Teacher got bored so he said that every prime number student will close all the lockers and rest will continue as instructed before. Write a function named **openLocks_t3()** which takes same parameters and returns the number of lockers that are opened in end.

4. Now every prime number student won't touch anything, for this write a function named **openLocks_t4 ()** which takes the same parameter and returns the number of lockers that are opened.

Note : Make sure you Enter your functions name correctly, otherwise your program may not run, and you will end up with ZERO Marks

Hint is on the next page.

Hint: Try to do yourself, try to break it into smaller parts and make function. 😀

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