Programming Design
Assignment 2 – Loops

March 20, 2018

Objectives

Practice and get familiar with the basics and flow control of C language. In this assignment you will make use of the subject matters in Chaps 2 and 3.

Problem Description

1. Write a program to print 9×9 multiplication table.

   (a) Output the formatted 9×9 multiplication table. (50%)

   (b) Output the formatted $m \times n$ multiplication table, where m and n ($m, n \in \{1, \ldots, 100\}$) are input by the user. Your program needs to check the legality of input values. (50%)

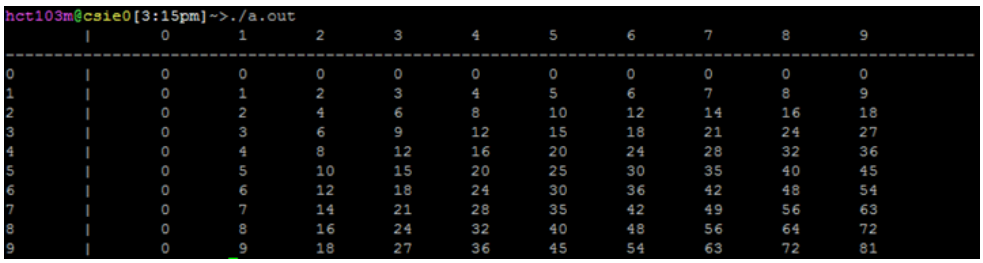

Figure 1: Format of multiplication table

2. Write a program to calculate the following power sum and print its result:

$$\sum_{x=1}^{n} x^8 = 1^8 + 2^8 + \cdots + n^8,$$

   where n is input by the user. Your program should use a *doubly-nested loop* for the calculation, instead of `pow` function. Besides, it should also check the legality of input value.

Requirements

You MUST use

1. C style!
2. I/O functions
3. Flow of control

Never ever cheat!

Evaluation

- Correctness: 90%
- Styling: 10%

Submission

- **2018.04.01 (degrade by 10 points for each day delay)**
- Source code (assign1a.c, assign1b.c)
  - Show your information (Name, Student ID, Dept) as comments in the beginning of your code.
  - Zip and upload the files to iLMS.