C291 – System Programming in C and UNIX

Assignment 1

Task:

Write a C program to check whether a given input number is Armstrong or not. (100 points)

Armstrong number: Armstrong number is a number which is equal to sum of digits raise to the power total numbers of digits in the number. For example,

7 = 7^1

371 = 3^3 + 7^3 + 1^3

8208 = 8^4 + 2^4 + 0^4 + 8^4 = 4096+16+0+4096 = 8208

Bonus Points:

N/A for this assignment

Sample Terminal Output:

- vi program.c
- cc program.c
- ./a.out
- Enter a number: 371
- 371 is an Armstrong number

- ./a.out
- Enter a number : 16
- 16 is not an Armstrong number

Due Date:

The submission is due on Wednesday 09/09/2015 11:59 PM. A late submission with a penalty of 20% is permitted till 09/10/2015 11:59 PM.

What to turn in:

Upload .c file in canvas. We'll grade whatever version you've put there at 11:59PM on the due date.

Academic Integrity:

You may discuss the assignment with other people at a high level, e.g. discussing general strategies to solve the problem. You may also consult printed and/or online references, including books, tutorials, etc., but you must cite these materials in report. However, if you are submitting the code, then it must be your own work, which you personally designed and wrote. You may not share written code with any other students, nor may you possess code written by another student either in whole or in part, regardless of format. For more information, please see the Indiana University Code of Student Rights, Responsibilities and Conduct. The professor and AI's are always available to help, so reach out through canvas if you need it!

Rubric:

- You will get 50% of total marks on successful compilation of program without any errors
- You will get 70% of total marks on successful execution of program
- You will get 90% of total marks on passing all test cases
- You will get 100% of total marks based on your code clarity
- The following falls under clean code
    - Proper names for variables.
    - Follow camel case patterns.
    - Comment where ever needed
    - Check for valid inputs & valid range
    - Output unambiguous & user friendly messages