CSCE 206 Spring2018 Lab: Assignment #3

Submission Deadline: 23:59, March 11, 2018, Sunday.

1. **Follow the submission guideline to submit the assignment through eCampus.**
2. **Add comments to your code, including your name, UIN and the class section you are in with the block comments to the head of your code file.**

Question 1. Special Numeric (40 points)

Special numeric has three digits and holds a property that it is exactly equal to summation of cubes from each digit. For example, 370 is an element named special numeric.

$$370 = 3^3 + 7^3 + 0^3$$

.

Write a C program to explore these special integer numbers from 100 to 999 and display all of them on screen. You can use **for** loop. Name your program file Hw3_q1_code.c.

Question 2. Recursion Sum (60 points)

A Summation formula is defined as:

$$sum(n,k) \triangleq n^0 + n^1 + n^2 + \cdots + n^k$$

; for example:

$$sum(10,4) \triangleq 10^0 + 10^1 + 10^2 + 10^3 + 10^4 = 11111$$

. Write a C program to ask user input a **decimal** n and an **integer** k and return a correct summation following the formula defined above. The C program is required to use **Recursion function (a function calling itself)** to achieve this purpose. At least, when calculating some power of n, you are required to use **Recursion** to evaluate the power of n. Name your file Hw3_q2_code.c.

Hint: write a pow function with recursion learned from the textbook or instructor's Ch4 slides (**Not allowed** to use **pow** in **math.h** library) and test it function well.

Example inputs:

Please input n = 6.5

Please input k = 5

Example Output:

Sum = 13712.34375.

```
please input n = 10
please input k = 4
Sum = 11111.000000
```

```
please input n = 6.5
please input k = 5
Sum = 13712.343750
```