Basic C/C++
Assignment#3

This assignment is handed out Jan 6, 2021. Due is **Jan 10, 2021**.

```
(Assignment Structure)
 week3
 - string.c
 - shift.c
 - calculate.c
 - portal.c
```

1. String (5PP)

Enter two English words (assuming that each word has less than 10 letters), write a c program that prints the following example below. (↵ means that the user press the enter key after input.)

A. The contents of two strings
B. Length of two strings
C. String followed by two strings sequentially
D. Whether the contents of the two strings are the same or different

```
(Example)
 ulsan incheon↵
 str1 : ulsan
 str2 : incheon
 length of str1 : 5
 length of str2 : 7
 str1+str2 : ulsanincheon
 Not same.
```

```
(Example)
 ulsan ulsan↵
 str1 : ulsan
 str2 : ulsan
 length of str1 : 5
 length of str2 : 5
 str1+str2 : ulsanulsan
 Same.
```

2. Shift (10PP)

Read the description and write a c program. (↵ means that the user press the enter key after input.)

A. Type one English word (assuming that the input word is less than 10 characters long and consists only of uppercase or lowercase letters). The output should be as shown in the example below.
B. Output string's first letter is uppercase and the rest is lowercase.
C. Define the function whether the input word is palindrome or not. If the word is palindrome return 1, else 0. If the word is palindrome print "Palindrome.",else "Not palindrome.".

```
(Example)
 uLSan↵
 Ulsan
 Not palindrome.
```

```
(Example)
 lEvel↵
 Level
 Palindrome.
```

3. Calculate (5PP)

Write a function getSumDiff that calculates the sum (a+b) and difference (a-b) of two integers simultaneously in the form below, and use this function to write a program that outputs the difference and the sum of two user-entered integers as shown in the example of the execution below. However, the calculated results should be stored in a variable declared outside the getSumDiff via the out parameters pSum (sum) and pDiff (difference), and the output of the calculation results should be printed in the main function. The output should be as shown in the example below. (↵ means that the user press the enter key after input.)

A. void getSumDiff(int a, int b, int* pSum, int* pDiff)

```
(Example)
 1 7↵
 Sum is 8
 Difference is -6
```

4. Portal (5PP)

Use the following Unist structure to declare an Unist type array with a length of 3, and fill in the contents of the array by receiving the name, task score, midterm score, and final exam score from the user. Write a C program that prints each student's grades when you finish typing. (↵ means that the user press the enter key after input.)

A. Array shall be declared in the main function. Function must be separately prepared and used in the form below to calculate the score.The function should be called once to ensure that all students' grades.
B. 0 <= task score <= 20, 0 <= mid score <= 40, 0 <= final score <= 40.
C. Print score by A,B,F(The criterion for score is your choice. Whatever you want).
D. void printScore(Unist* persons, int len)

```
typedef struct
{
   char name[10];
   int task_score;
   int mid_score;
   int final_score;
} Unist;
```

```
(Example)
 Hina 20 39 37↵
 Taki 17 30 40↵
 Alex 3 15 8↵
 Hina A
 Taki B
 Alex F
```