

Programming Design Homework Assignment S6

Due: 2022/3/19 23:00

※Notice:

1. Please follow the rules for homework assignments announced on the course website.
2. The standard template library and unrelated macros are not permitted in this assignment.

There are two questions in this assignment, both are programming.

- Programming formats : (20%)

1. The structure of your program (5%)
2. Clear and readable code layout (5%)
3. Clear comments for understanding your program (5%)
4. The copyright and short description of each question (5%)

- Question 1 : (50%)

Write a C++ program that asks the user to enter his or her name and birth year in one string. The string consists of the user's first name followed by a space, last name, a comma, a space, and his/her birth year. And then separate, calculate and display the information in three strings, last name, first name and his/her age. The program should terminate when the user enters an incorrect format. You can use function **atoi()** to convert string to integer. A sample run could look like this (the bold words is user input):

Enter your first name, last name and birth year as the format "(first name) (last name), (birth year)":

Jimmy Chen, 1995

Here's the information:

Last name: Chen

First name: Jimmy

Age: 27

For this question, student shall try to write the program twice. First time, named as "HWS6-Q1-1", use **char arrays** and functions from the **cstring header file**. The second time, named as "HWS6-Q1-2", use **string** objects and methods from the **string header file**. Finally, please discuss the different and benefit between the two programs you wrote, and submit as a text file named "HWS6-Q1.txt".

- Question 2 : (30%)

Create a string array to store students' ID number (consisting of English letters and digits) of up to 20 students. Use a loop to prompt the user to enter IDs into this array. In each loop, ask the user whether enter next name or not. After entering students' ID, create the score (0 to 100) of four courses (Chinese, English, Math, and Chemistry) of each student **randomly** and store into a 2-dimensional array. Calculate the average score, and then display the ID, scores and average score of all the students in a table **orderly**.