**物件導向程式設計作業**

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| **命題者︰Wang, Pei-Ru** |
| **題目名稱(中文/英文)：Student Info System** |
| **主要測試觀念：**   |  |  | | --- | --- | | **Basics** | **Functions** | | □ C++ BASICS  □ FLOW OF CONTROL  □ FUNCTION BASICS  □ PARAMETERS AND OVERLOADING  □ ARRAYS  □ STRUCTURES AND CLASSES  □ CONSTRUCTORS AND OTHER TOOLS  □ OPERATOR OVERLOADING, FRIENDS, AND REFERENCES  □ STRINGS  □ POINTERS AND DYNAMIC ARRAYS | □ SEPARATE COMPILATION AND NAMESPACES  □ STREAMS AND FILE I/O  □ RECURSION  □ INHERITANCE  □ POLYMORPHISM AND VIRTUAL FUNCTIONS  □ TEMPLATES  □ LINKED DATA STRUCTURES  □ EXCEPTION HANDLING  □ STANDARD TEMPLATE LIBRARY  □ PATTERNS AND UML | |
| **題目說明：**  You are a teacher. There are many students in your class, so you need a system.  Design a student management system, which can do the following things:  1. Add, delete, edit, find a student.  2. List every student.  To be specific, please implement the commands below:  **Add <ID> <Name> <Height> <Weight> <Gender>**  Add a student. If the student **ID** already exists, output “The student's ID is duplicate.”  **Del <ID>**  Delete a student. If the student ID doesn’t exist, output “Student Not Found.”  **Edit <ID> <Variable Name> <Value>**  Edit a student. If the student ID doesn’t exist, output “Student Not Found.”  For **Variable Name** information, see the below table. **(ID will not be edited)**  **Find <ID>**  Find a student with ID and show data. If the student ID doesn’t exist, output “Student Not Found.”  **List**  List every Student data. **(Sort by ID)**  **Student data structure**   |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **Example** | | ID | String | A0000101 | | Name | String | Betty | | Gender | String | Non-Binary | | Height | Number | 166.3 | | Weight | Number | 66.6 |   **輸入說明：**  Input some commands to operate system.  **輸出說明：**  Print expected output or error message of commands.  Each column separates by tab. (\t)  **IO範例 :**   |  |  |  | | --- | --- | --- | |  | **Sample Input** | **Sample Output** | | 第一組 | Add B11015001 Mike Male 180 70  Add B11015001 Alice Female 163 50  Add B11015002 Rock Non-Binary 166.6 66.6  Add B11015003 Lucy Female 157.3 51.1  List | The student's ID is duplicate.  B11015001 Mike Male 180 70  B11015002 Rock Non-Binary 166.6 66.6  B11015003 Lucy Female 157.3 51.1 | | 第二組 | Add B11015025 Coke Non-Human 10.1 0.15  Add B11015017 Woo Dog 60.5 12.3  Add B11015057 Meow Cat 30.4 6.3  Edit B11015101 Name Hawaii  List  Del B11015025  Find B11015057  Find B11015025  Edit B11015017 Gender Male  List | Student Not Found.  B11015017 Woo Dog 60.5 12.3  B11015025 Coke Non-Human 10.1 0.15  B11015057 Meow Cat 30.4 6.3  B11015057 Meow Cat 30.4 6.3  Student Not Found.  B11015017 Woo Male 60.5 12.3  B11015057 Meow Cat 30.4 6.3 | |
| **附屬資料︰**  ■ 解答程式：ClassAndClass.cpp  ■ 測試資料：input1.txt, output1.txt, input2.txt, output2.txt, input3.txt, output3.txt |
| ■ 易，僅需用到基礎程式設計語法與結構   * + 中，需用到多項程式設計語法與結構   + 難，需用到多項程式結構或較為複雜之資料型態或結構 |
| **解題時間：30**分鐘。 |
| **其他註記：** |