SECJ1023 Programming Technique II Semester 2, 2020/2021

Lab Exercise 2: Class and Object Manipulations (2.5%)

Task:

Write a complete C++ program that contains two classes called **software** and **hardware**

- Write an appropriate **main** function
 - o use **pointer** to create one of **software** objects
 - o use **array** to create one of **hardware** objects
- Both classes should have the definition of the accessor, mutator, and the constructors of classes
 - o give two examples (e.g., **software**: Dev-C++, RStudio; **hardware**: laptop, printer)
 - class **software**: use **string** to declare the data
 - class hardware: use char to declare the data
 - o one **constructor with default arguments** (put outside class)
 - o one constructor with multiple arguments (put inline)
 - o one copy constructor
 - o one destructor
 - o a **non-return type** function for **get** data (put outside class and key in from keyboard)
 - o a **friend** function for an overloaded output (<<) operator function to display **hardware** object
- Example of Output

Dev-C++ RStudio Enter 2 software adobe microsoft Software: Pointer of Object call Enter 2 software android linux Software: Copy constructor python matlab Hardware laptop mouse Enter 2 hardware desktop printer Hardware: Array of Object call Enter 2 hardware cable scanner Enter 2 hardware bluetooth pendrive Hardware: Copy constructor mouse pad headset Destructor call desktop and printer are destroyed from hardware bluetooth and pendrive are destroyed from hardware cable and scanner are destroyed from hardware android and linux are destroyed from software python and matlab are destroyed from software	
Enter 2 software adobe microsoft Software: Pointer of Object call Enter 2 software android linux Software: Copy constructor python matlab Hardware laptop mouse Enter 2 hardware desktop printer Hardware: Array of Object call Enter 2 hardware cable scanner Enter 2 hardware bluetooth pendrive Hardware: Copy constructor mouse pad headset Destructor call desktop and printer are destroyed from hardware bluetooth and pendrive are destroyed from hardware cable and scanner are destroyed from hardware mouse pad and headset are destroyed from hardware android and linux are destroyed from hardware	Software
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No.	Criteria	Mark
1	the program is able to run	1
2	all the required header files are included	1
3	the main function included proper input and output formatting used	2
4	class software attributes, functions, constructors, destructor	5
5	software (string for data)	1
6	class hardware attributes, functions, constructors, destructor	6
7	hardware (char for data)	1
8	friend function	1
9	class software object pointer	1
10	class software object pointer	1
11	Feedback on the tasks given during online class	5
Total		25

Submission:

Only **ONE CPP** file (**LE2_Name.cpp**) to be submitted (https://elearning.utm.my/20212/)