CMP2801M - Advanced Programming - Assessment Item 1

Learning Outcome	Criterion	Pass	2:2	2:1	1st	1st++
[LO1] Apply concepts of advanced software development and programming methods to computational problems (40%)	Implementation	The code compiles and executes. Fair program structure and some code comments. A working software with basic functionality is demonstrated, accomplishing the assignment tasks partially.	The code compiles and executes. Clear program structure and appropriate comments. A working application is demonstrated, accomplishing most of the tasks.	The code compiles and executes. The program code is well structured and commented. Good demonstration of C++ features, such as collections, pointers and memory management. The functionality of the code is almost complete.	A complete implementation featuring all the desired functionality. The program code uses appropriate evaluation strategies, is well-structured and commented. Good use of programming structures and C++ features is demonstrated.	The implementation fulfils the 1st class criteria and goes beyond the brief. The application is a production-worthy solution that makes effective use of STL/contemporary C++ components. One or more of the additional tasks have been attempted.
[LO2] Use advanced object oriented principles and programming techniques in software development (40%);	Implementation	Simple class structures are used. Those classes may incorporate variables and data structures, but no thought has been given to their OOP principles.	Class definitions are appropriate. Inheritance relationships are implemented, although with maybe flawed or missing elements. Access modifiers may not be correctly used. OOP features such as operator overloading may be evident in the code.	Class definitions are appropriate. Inheritance relationships are implemented with minor flaws. Access modifiers are correctly used in the classes. OOP features such as operator overloading are evident in the code.	Classes are defined to match the assignment brief perfectly. Access modifiers are correctly and effectively used. The inheritance relationships are fully and correctly implemented. Good usage of OOP features, such as operator overloading, virtual functions, abstract classes etc. are evident in the code.	The implementation demonstrates advanced knowledge of both OOP and functional paradigms, providing an elegant solution to one or more of the additional tasks outlined in the brief.
[LO 3] Apply advanced logical and mathematical techniques in the development of software solutions (20%).	Report	Introduction is basic, it introduces the problem, but there is no more. Code structure is incomplete. Results are be limited in scope, and almost no attempt is made to evaluate the program.	The introduction provides an overview of the problem. Program structure and logic is described in a satisfactory way. Results are presented but the analysis of the program is lacking.	The introduction provides an explanation of the problem. Program structure and logic is described well. Results are presented and the analysis of the program is given.	The introduction provides a detailed explanation of the problem. Program structure and logic is described very well. Results are presented well, and the program is comprehensively evaluated.	A detailed examination of the additional tasks is also given, and the program design is critically evaluated with close attention paid to the algorithmic choices and time complexity of the additional tasks.
Weighting		Weightings are indicated				