CP317A Project Requirements 2024 Winter

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Introduction

The project is a group of four students work. The purpose of this project is to provide an opportunity for students experience what software engineering is, and to understand file input and output from software perspective. The evaluation of the project consists of two portions such that project presentation and project report. The presentation section measures your verbal communication skills and the understanding of software engineering, and the report section measures your writing communication skills and the understanding of software design document.

Project requirements

1. Design and develop a software application to read two text files and format the data output to a new file (Note: the format of input file and output file is described in Appendix A). The design should contain both architecture design and detailed design.
2. The software must use at least two of the following Object-Oriented programming features.
   (1) Inheritance, (2) Polymorphism, (3) Encapsulation, (4) Abstraction
3. The project requires to use one of **compile languages** such as C++ and Java **(not scripting languages like Python, JavaScript, PHP etc.)**. Please refer to Appendix B for APIs of C++ and Java
4. The software must be reliable. Your group should apply "offensive programming" technique which we will learn in this course.

   The operating system is your choice, it could be Windows OS, MAC, or Linux.

5. Re-engineering is permitted. However, you must understand the implementation in detail, and online AI tools such as **ChatGPT is prohibited**.
6. If your team selects re-engineering, you must tell the audiences about the source in the presentation and must cite the source in your project report.

Evaluation schemes

The project will be evaluated in two sections. One is project presentation, and the other is project report. The evaluation rubrics are in appendixes of CP317A course syllabus that has been uploaded in MyLearningSpace.

1. Project Presentation
   You will have 6 minutes to present your group project (3 minutes theory and 3 minutes demonstration). The presentation material such as PowerPoint slides must be delivered into myls.
2. Project Report (Software Design Document (SDD))

Write a project report (SDD) by end of this semester. The report should be like a software design document which should contain both architecture design and detailed design.

Notes

1. **I suggest that you start with writing the software design document (SDD) in which you design how the software work. After you have a draft of the SDD, you start the implementation.**
2. It is better to have regular meetings for the group work and to discuss the progresses and problems. For example, weekly meetings.
3. It is better to divide the group project into partitions and certain individuals are responsible for certain parts. For example, two people focus on presentation and other two focus on project report.

Appendix A

The formats of the two input files SupplierFile.txt and ProductFile.txt are as follows.

SupplierFile.txt

Supplier ID	Supplier Name	Address	Phone	Email
6789	Hitachi	123 Hitachi city	446-234-2314	support@hitachi.co.jp
4567	Fujitsu	345 Tokyo city	03-3456-7890	support@fujitsu.co.jp
….	…..	……	……	……

ProductFile.txt

Product ID	Product name	Description	Price	Quantity	Status	Supplier ID
4234	TV	Plate TV	$380.5	20	A	6789
2234	Telephone	Home telephone	$50.6	40	B	4567
1234	Camera	Camera	$70.6	60	C	6789
….	…..	……	……	……	……	……

InventoryFile.txt – output file

Product ID	Product Name	Quantity	Price	Status	Supplier name
6789	TV	60	$380.5	A	Hitachi
5678	Camera	14	$70.6	A	Fujitsu
….	…..	……	……	……	……

Appendix B – reference resources

1. C++ APIs
   https://cplusplus.com/doc/tutorial/files/
2. Java APIs

   https://www.javatpoint.com/java-io