CS247 Spring 2017
Assignment 3 Bonus Question Specification

BONUS [60 marks] Design Patterns
The Design Patterns page on the course Web page, https://www.student.cs.uwaterloo.ca/~cs247/current/patterns.shtml, includes a number of example applications of various Design Patterns. You will help to populate this page by creating a new example application of your choice, using one of the following Design Patterns:

i. Strategy Pattern
ii. Template Pattern
iii. Facade Pattern
iv. Simple Factory
v. Decorator Pattern
vi. Factory Method Pattern

Your answer to this question includes the following:

a) State which Design Pattern you are implementing, and provide a short description of the problem to which you are applying the Design Pattern.

b) Provide a UML model of the design pattern as it applies to your example application. Highlight the model elements (i.e., classes, associations, attributes, operations) that are introduced to the model because the design pattern is being used.

c) Implement your example application in C++. Provide a simple main program that demonstrates how a client programmer would use the resulting classes in the model. Provide a Makefile that builds the executable of your example program, where the name of the executable is exec. The TAs will execute your program.

Correct solutions to this question might be posted in the future to the Design Patterns page on the course Web page.