Project Name

Student Name and Number (one per line)

Due: Feb 25th, 11 marks

You must submit this milestone through **GitHub** and have uploaded the project's source code (-2 marks if you don’t use GitHub)

# Summary of Project

Cut and paste the 1 paragraph summary of what the project is about.

# Class Diagram of Actual System

(paste in conceptual diagram = ideal architecture from M2)

(create UML diagram of classes of interest, 2-4 pages, if I can’t read it you will lose 3 marks)

1 to 2 pages of text -> Describe the diagram and the relationships between the classes. Which conceptual classes map to which actual classes? Is there a discrepancy between the concepts and the actual classes? What does it mean to the architecture of the system? Describe any reverse engineering tools used (e.g., Diver, ObjectAid UML Explorer, Enterprise Architect - Sparx Systems, ArgoUML).

In maximum of one page, for two classes and the relationship between them: Copy-and-paste the class, method, and attributes **declarations** (and anything else that is necessary) directly from the source code. Do not include code that is unnecessary (be selective, you will lose marks for large dumps of source code.)

# Code Smells and System Level Refactorings

Be idealistic! Restructure the system to fix some of the code smells you identified above.

Describe the code smell(s) and how you will combine together a series of refactorings to fix the smells. Describe how the refactorings are interrelated and how they correct the problems you identified in the above. For example, “First, I moved the methods X and fields Y and Z, to increase cohesion and to reduce feature envy. Second I renamed the class to reflect its new limited responsibilities. Third I removed the coupling to …”

1 to 2 pages of text + 1 to 2 UML diagrams (diagrams should be at most 2 additional pages).

# Specific Refactorings that you will implement in Milestone 4

Be realistic, you have to implement at least two of these! Suggest two to four refactorings that you will implement in Milestone 4. In maximum of one page, for one of the refactorings you suggest: Copy-and-paste the class, method, and attributes **declarations** (and anything else that is necessary) directly from the source code. Do not include code that is unnecessary (be selective, you will lose marks for large dumps of source code.)

Notes:

1. Algorithmic changes are not acceptable refactorings. You must deal with the logic and relationships between the classes -- ideally real world or domain entities.
2. Stay away from the GUI classes as they often contain a lot of autogenerated non-domain code.
3. Moving a code around without modifying it is unacceptable.
4. Isolated changes that do not affect other parts of the system is unacceptable.
5. Example of possible refactorings: Refactoring 1, fix some complex if statements. Refactoring 2, introduce a strategy pattern and use delegation to keep the system running. Gradually remove the delegation on some of the cases.