Concordia University
Department of Electrical and Computer Engineering
COEN 6312 – Winter 2019
Term Project

1. Objective of the project

The objective of this project is to design and implement a system of your choice using the model-driven software development approach. You are expected to conduct domain analysis using traditional software engineering techniques.

Examples of systems include:

- Asset security system
- Drone flight control system
- E-commerce system
- Airline reservation system
- Parking management
- Inventory management system
- Etc.

2. Team Formation

Projects will be conducted in teams, preferably of five or six students. Each team should select a team leader who will be the person who communicates with the teaching assistant (TBD) regarding the project.

At the end of the project, each team member will be asked to evaluate the contribution of the other team members. Individual grades are determined by multiplying the average of the grades for the project as a whole by the rankings of contributions of each individual by the team. More information will be provided.

3. Development Environment

You **must** use the following development environments:

- Development Environment: Eclipse, Papyrus (https://eclipse.org/papyrus/), Java, C++, or others
- Version control system: Github (https://github.com/): You must upload all your deliverables to Github and give access to the teaching assistant
- You must follow a specific software process such as Scrum

4. Project Deliverables and Deadlines

Each step of the development process yields one or more work products. These work products will be the means of evaluation of each step of the project.

Deliverable 1: Team Formation

You need to provide the following information about your team:

- The name of the team
- One or two sentences describing the mission and the vision of your team
- The name of each member with a short description of his or her background (2 sentences maximum)
- The email address of each member

- A one-page description of the system you intend to develop. At this point, you don't need to provide details. I expect to see some ideas on what you want to do.

Deliverable 2: Domain analysis and requirements

- A textual description of the domain.
- A use case diagram of the system. We did not cover use cases in the class because I assume that everybody had taken the prerequisite classes. For those of you who do not know about use cases, this is the chance to learn these concepts.
- A list of functional requirements of your system.

Deliverable 3: Class diagram

- Prepare a detailed class diagram for the system. You should document the main classes, associations, attributes, functions, etc.
- Using OCL, prepare the list of constraints that apply to the class diagram.

Deliverable 4: State Machines

- Select at least three classes and prepare a detailed state diagram for each class.
- Select at least three operations and prepare an action specification for each.

Deliverable 5: Code generation

- You need to generate automatically most of the code, preferably using ALF as an action language. You can use Java or C++ only after you have shown that you tried to use ALF and you see that existing tools do not support it well.

Deadlines: All deliverables need to be submitted on Moodle. Do not use emails to send your deliverables.

Deliverables (marks)	**Deadlines (11:55pm)**
Deliverable 1 (5 marks)	January 25
Deliverable 2 (15 marks)	February 8
Deliverable 3 (30 marks)	March 1
Deliverable 4 (30 marks)	March 15
Deliverable 5 (20 marks)	March 29