# School of Electrical Engineering, Computing and Mathematical Sciences Curtin University

# Requirements Engineering (CMPE2002) - 2021

**Assignment 1: Modeling Requirements** 

### **Due Date**

17th of September, Friday (Teaching week 7 - 12.00 noon Perth local time online though Blackboard)

This assignment counts for 20% of the final marks.

### Important note

- 1. This assignment is to be carried out individually (basically, you need to work alone *not in* groups!) *Each student will submit one report through blackboard*.
- 2. Each student is required to select one problem statement provided by the lecturer and work on it as per instructions provided below.

# **Objective**

Assignments' 1 and 2 are closely related to each other. The two assignments together form a complete software requirements specification. In these two assignments, you will analyse the requirements and write a requirements specification for a software development project of your own choice from the problem statements provided. Assignment 1 expects you to model the problem using a mixture of modeling techniques (on the other hand, Assignment 2 will ask you to produce a software requirements specification document based on this and more). The main objective of this assignment is to give you practice in gathering information (by using requirements elicitation techniques discussed during lectures, workshops) and develop models of various aspects of the application domain in order to analyse the requirements.

### **Problem Statement**

Read the problem statements provided to you under assignment folder on the CMPE2002 unit website on BB. Select *any one problem statement per student* to work on this assignment.

# **Doing the Assignment**

This assignment has following steps. They are listed as below:

1) Use requirements elicitation techniques discussed during lectures (and workshops) to analyse information and features provided in the selected problem statement. You are also

allowed to collect any additional information/additional innovative feature(s) you may need to refine the requirements.

Note: We are not looking at the full description of different elicitation techniques rather only specific techniques used in your case.

- 2) Based on the scope of your project, list down all the identified functional and non-functional requirements at this stage.
  - Note: We further expect you to extend and refine these requirements in Assignment 2 to arrive at the formal software requirements specification document.
- 3) Develop models of key aspects of the problem. Your models *must* include:
  - a) The required functionality of the proposed system (using UML Use Case Diagrams *AND* UML Sequence Diagrams).
  - b) The dynamic behaviour of relevant objects in the application domain of the proposed system (using UML Activity Diagrams *AND* State Diagrams).
- 4) Drawings must be clear and legible. You can use open source modeling tools of your choice like ArgoUML, Star UML, PlantUML etc to draw your models Strictly, do not draw models/diagrams by hand and use right symbols to define actor, case, state, trigger, decision etc.
- 5) Clearly list any assumptions you might make in completing this assignment at appropriate places.

# Written requirements of the assignment:

You must hand in a report (in .PDF format and contain all relevant graphics) that should contain the following:

- 1) You should hand in a report of your work, not exceeding two (2) pages (not counting references, appendices, figures or tables etc). The report itself is intended just to give an overview of what you did, and the rationale for any choices you made (e.g. about what to model and how to model it; the requirements elicitation techniques used to further refine the requirements, discuss any interesting lessons learned during the elicitation and modeling process etc).
- 2) An appendix containing all of your identified functional and non-functional requirements at this stage and analysis models. Make sure you provide enough commentary (and annotations) with the models for the reader to understand what each model is of, and how to understand them.
- 3) Any further appendices you feel are relevant

Assignments will be judged on the basis of visual appearance, grammatical correctness and quality of writing, as well as their contents. Please make sure that the text of your report is well-structured, using paragraphs, full sentences, and other features of a well-written presentation. The report must not consist of itemized lists of points. Text font size should be either 10 or 12 points.