Deliverable #1: Phase #1 Model
Due: Wednesday, October 14, 2:30 PM

Requirements Analysis Document

1. Introduction
2. Functional requirements
3. Non-functional requirements
4. Use case model
5. Object model
   - 5.1 Data dictionary
   - 5.2 Class diagrams
6. Dynamic model

Contents

Introduction:

- Provide an overview of the cuPID system, mainly based on the system description, and an overview of the document

Functional Requirements:

- Provide a description of every functional requirement for the system
- All requirements are uniquely numbered for traceability

Non-functional Requirements:

- Provide a description of every non-functional requirement for the system
- Non-functional requirements are organized in the categories presented in class
- Every category presented in class contains at minimum three different requirements
- All requirements are uniquely numbered for traceability

Use Case Model:

- The set of use cases covers all the functional requirements
- Use cases include high-level use cases for more abstract functionality and detailed use cases with refinements
- Each use case is represented with a use case diagram **AND** with a table-based text description that includes name, flow of events, entry and exit conditions, and traceability
- Use case diagrams represent all the relationships between use cases, e.g. “includes”, “extends” and inheritance
- High-level and detailed use cases are depicted together using the “includes” relationship
- Exceptions are depicted as new use cases “extending” the original use case
- All use cases are uniquely numbered for traceability
- Every use case is linked to one or more requirements for traceability

Object Model:

- Entity objects are identified and described in the data dictionary
- Data dictionary entries include object name, description, list of attributes and all associations
- All associations between objects are modeled using class diagrams; information on diagrams include dependencies between objects, directionality (line with arrow if dependency is unidirectional or line with no arrow for bidirectional dependency), multiplicity, inheritance and aggregation
- All classes are uniquely numbered for traceability
- Every class is linked to one or more use cases for traceability

Dynamic Model:

- Every entity object which maintains state has an associated state machine diagram
    - all state machines are uniquely numbered for traceability
    - each state machine diagram is linked to a class from the object model for traceability
- Every use case has one or more sequence diagrams
    - each sequence diagram depicts system behaviour at the detailed use case level
    - each sequence diagram is linked to a use case from the use case model for traceability
    - all sequence diagrams are uniquely numbered for traceability

Grading

Breakdown:

Introduction	5%
Functional Requirements:	10%
Non-functional requirements:	10%
Use cases:	30%
Object model:	15%
Dynamic model:	30%

Criteria:

- Completeness: all the material is there, as compared to other teams; completeness covers both breadth and depth; e.g. it is insufficient to only present high-level use cases, they must be accompanied by detailed ones
- Correctness: all the material is presented accurately, with appropriate diagrams and in the appropriate format; superfluous, unnecessary material is not considered to be correct
- Traceability: every part of every model (requirement, use case, class, state machine, sequence diagram, etc.) should be numbered and traced to each other, using a numbering scheme set up in the requirements sections
- Presentation of material must be professional-looking (subject to a 10 mark deduction)

Format

The content of this deliverable will be discussed in class. A soft copy of the document must be submitted on cuLearn on or before Wednesday, October 14 at 2:30 PM. The submitted copy must be typed and legible, and it must look as professional as if it was being submitted to real client. All diagrams and tables must be introduced and explained in the text. Documents that do not conform to these specifications will not be marked.