Assignment 3 Rubric

Assessment: Total 100 marks

- Use cases (5 marks),
- Design documentation (45 marks),
- Implementation (30 marks), and
- Testing (20 marks)

UML Class diagram, sequence diagram, traceability matrix and code inspection are rubric-based grading.

(5 marks) Use cases (A1 use cases and fixing them based on Assignment 1 grading feedback)

(45 marks) Design documentation and traceability matrix

- (10 marks) UML Class diagram for design (structure):
  - complete relative to the requirements and use case model
    - Are all elements from the requirements covered?
      - Elevators, floors, sensors, buttons …
  - Well formed:
    - Is UML syntax followed?
  - Consistent with the implementation at the class, relationship and interface level
    - Are all the classes from the implementation shown?
    - Are all their public interfaces shown?
  - Use of the Qt framework elements such as QObject, QMainWindow, QTimer, and QPushButton buttons.

- (20 marks) Sequence and state diagrams for design (behavior):
  - (10 marks) 2 success scenarios from the basic use case (end-to-end) behavior (5 marks each)
  - (5 marks) 5 safety feature scenarios (1 mark each)
  - (5 marks) State diagram for elevator and, if applicable, state diagram for controller (ECS).

- (15 marks) Requirements traceability matrix
  - Requirements to use cases
  - Use cases and/or requirements to design elements. Note that some requirements, for example variability in number of floors and elevators, are satisfied in the design so there may not be a mapping to a use case but there should be a mapping to the corresponding design element realizes it.
  - Design elements to implementation.
  - Requirements and use cases to tests.

(30 marks) Implementation

- (20 marks) Code inspection
    - complete implementation: all elements present
    - variability for number of floors and elevators implemented in the back-end
    - well commented and understandable code
    - functions achieve a single purpose, i.e. there are no very large functions with multiple purposes
- (10 marks) Builds in Qt without errors

(20 marks) Testing

- (7 marks) Video showing all the following tests
- (4 marks) success scenario 1
- (4 marks) success scenario 2
- (1 marks) Help scenario
- (1 marks) Door obstacle scenario
- (1 marks) Fire scenario
- (1 marks) Overload scenario
- (1 marks) Power out scenario