

CMPE 202

Software Systems Engineering

Section 47

Spring 2026
Instructor: Ron Mak

Assignment #3

Assigned: Wednesday, February 18
Due: Wednesday, February 25 at 5:30 pm
Team assignment, 170 points max

Functional Specification and Initial Classes

Write a Functional Specification for an imagined GUI-based application. Your specification should include functional requirements, nonfunctional requirements, and use cases.

Your functional specification must have the following sections:

1. Product name
2. Problem statement
3. Product objectives
4. Functional requirements
5. Nonfunctional requirements
6. Use cases

For this assignment, include at least **six functional requirements** and **four nonfunctional requirements**. Include a **UML use case diagram** that contains **six use cases** and **at least two actors**. The application itself should not be an external actor.

Pick *three* of your use cases and write a **use case description** for each one. You can use this Microsoft Word template to write your use case descriptions:

<http://www.cs.sjsu.edu/~mak/CMPE202/assignments/3/UseCaseForm.docx>

The goal of this assignment is to write a good Functional Specification. Use your imagination! You will not be held to this specification on future programming assignments or projects.

Writing quality

A Functional Specification must be understandable by users, clients, developers, project managers, and others. It's part of the informal contract between the product stakeholders and the developers. It should not contain implementation details.

Initial classes

In a separate document, list the relevant nouns and verbs from your functional requirements. Create a **Noun-Class Table** (nouns/classes → states and member variables) and a **Verb-Behavior Table** (verbs → classes and member functions).

What to turn in

There should be one submission per team. Your Functional Specification can be a single file or multiple files. The two tables should be a separate document. Create a single zip file containing the files and name the zip file after your team. Example:

SuperCoders.zip

Submit to Canvas: Assignment #3: Functional Specification and Initial Classes

Rubric

Your Functional Specification will be graded according to these criteria:

Criteria	Maximum points
Functional Specification	130
<ul style="list-style-type: none">• Product name• Problem statement• Product objectives• Six functional requirements• Four nonfunctional requirements• Use case diagram with six use cases and at least two actors• Three use case descriptions• Writing quality	<ul style="list-style-type: none">• 3• 3• 3• 6 x 5 = 30• 4 x 5 = 20• 6• 3 x 20 = 60• 5
Initial classes	40
<ul style="list-style-type: none">• Noun-Class Table• Verb-Behavior Table	<ul style="list-style-type: none">• 20• 20