

CSCI 150 Intro. to Software Engineering

SAMPLE Final EXAM

Fall 2018

Please note this *sample* final exam only covers materials after midterm. Final exam is comprehensive that will cover Chapter 1-6, UML-req.pdf and UML-design.pdf. We will also cover lab lecture slides by TA.

Name: _____

Major Software architecture styles/patterns covered in Csci 150: Pipe and filter, Repository, Client-server, MVC, MVVM, Layered.

1. [30 pts] Choose two architecture styles above. Explain them in details including when to apply them, their advantages, and their disadvantages. Note you ALSO need to draw diagrams when you explain them.
2. [30 pts] Assume that your term project has clients. (a) Define a functional requirement of your project using the table in Ch4 (b) Define a non-functional requirement of your project (c) Introduce 2 **closed questions** to elicit **TWO** functional and TWO **NON**-functional requirements (NFRs). (d) Answer how the answer of Question 1 may affect (positively or negatively) your 2 NFRs.
3. [CH5+Lab Exercise, 40pts] (a) Use Figure 1 to introduce a use case diagram. (b) Use Figure 1 to introduce a class diagram (c) Explain Figure 2 (Sequence diagram). (d) Convert Figure 2 into C++ source code.
4. Make sure you review midterm paper.
5. Make sure you review all Quizzes.
6. Compare all software processes covered in Ch2+3
7. Review what software engineering solves and myths of software engineering. What good attributes of software engineering.

This is Figure 1

Fresno State would like you to computerize their registration system (portal).

1. The Registrar sets up the curriculum for a semester.
 - a. One course may have multiple course sections
2. Students select 4 primary courses and 2 alternate courses
 - a. Students may also declare minor.
3. Once a student registers for a semester, the billing system is notified so the student may be billed for the semester
 - a. The billing system by default notifies students via emails. It also has an option to notify students via physical mails.
4. Students may use the system to add/drop courses for a period of time after registration
5. Professors use the system to receive their course section rosters
6. Users of the registration system are assigned passwords which are used at logon validation

