

SW Engineering Course Project Contract

Overview

You are organizing into groups for the purpose of developing a software product. Each group is required to follow the schedule and commitments below in designing and implementing the system of its choice. Each group must adhere to the following constraints:

1. The project must not be trivial, but not so large as to not be completed on time. 7K-8K is required.
2. The project must be coded in JAVA. No special hardware or exotic software support should be required; i.e., the finished system should run on a stand-alone IBM compatible PC.
3. The system must be easy to test; thus, interactive systems are required.

Deliverables

There are seven (7) documents that are due at different times during the semester. Contents of these documents can be determined from the text or lecture material. All pages must be numbered. All text must be produced on a word processor. All pages must be burst. All pages must be fastened together with a staple or other fastener.

1. Team Description & Project Management (Project Structure, Team Structure, Personnel Qualifications and Team Assignments). A Team Coordinator must be designated. The Team Coordinator interfaces with the lecturer and performs turnovers of deliverables. The signature of Team Coordinator agreeing to this contract for the Team is required on a copy of this contract which is turned in with the Team Description.

2. Requirements elicitation [including Function Point cost driver evaluations]

- (a) Follow the template of page 126.
 - (i) Problem statement in terms of “shall” statements describing the system to be developed.
 - (ii) Extracting use cases, etc. as will be discussed in class.
- (b) Include a rationale to requirements elicitation.

3. System design

- (a) The template on page 222.
- (b) Include a rationale to System design.

4. Object Design

- (a) The template on page 277.
- (b) Include a rationale to Object Design.

5. Rationale Management & User's Guide (manual – which must include passwords, etc.)

- (a) The template on page 318.

6. Implementation (including coding and testing, and COCOMO personnel cost driver evaluations)

- (a) Include an analysis between FP and COCOMO, stating which you think is better and why.
- (b) Include documentation of all tests and bugs (including what was done to remove bugs), etc.

7. Project Final Report (One complete copy which will be kept by the lecturer.)

- (a) Includes the revision of all the previous documents – excluding the part on rationale of each individual document.
- (b) Take these rationale from the individual documents and put them together as “**Rationale for Project**”.

In-Class Presentations

Each group must be prepared to make Intermediate Progress Reports (IPRs) during the semester and to deliver a formal presentation during the last “two weeks” of classes before Thanksgiving break. The IPRs are to be kept to 4 minutes. For the formal class presentation, the following minimum format is expected:

1. Synopses of the system specification and the requirements specification
2. A summary of the software system design
3. A brief analysis of the design and design process
4. At the very end (last 10 minutes) a demonstration of the system*

Formal presentations should be well-organized because each group will have a maximum of about 30 minutes. Visual aids must be used, including the overhead projector or power point. The presentation must include a demonstration of their system on a computer*. (Schedules for these presentations will be made later.)

Presentation Ground Rules

Presentations (IPRs and formal) are NOT "gripe sessions." Presenters must conduct themselves in a professional manner. When presenting, consider yourself representing your project, and all the work done by the team members, to SW development peers, and possibly to management, in a SW development "department" at a department meeting. You are expected to communicate the status of the project, noteworthy accomplishments of the team, and issues (yet-to-be-resolved points) that the team is working on.

Remember, you are a student of all aspects of SW development, which includes the communication of technical material simply, efficiently, and effectively. If you lapse and say things as "Wow, we are really behind! We're having a hard time working together!", then you are failing to emulate an environment in which you can observe the results of your efforts to summarize tersely and to communicate effectively the highlights and important aspects of an important project (yours!), and, moreover, you are denying your fellow students the chance to study correctly made presentations and to pose questions objectively. The audience must also conduct themselves in a professional manner; sensible, helpful questions from the audience are expected. Failure to follow these ground rules will result in points deducted from the presentation portion of the project grade.

Contents of the Final Report

NOTE: ALL text must be produced on a word processor. ALL pages must be placed in a binder. ALL pages must be numbered. ALL sections must be separated by labeled tabs.

The Final Report will include: a documented, tested, and carefully debugged set of software, and updated versions of the six documents. The report should **also** include:

1. Test Documentation, including:
 - a. Final Test Plan and Test Schedule
 - b. A list of all bugs found during each phase of testing. Each bug must be accompanied by:
 - (1) description of the bug,
 - (2) what test found the bug and the date and time it was found,
 - (3) what fixed the bug.
2. **A Project Legacy**
 - a. A discussion of how well the project agrees with its original goal
 - b. What went well and what went wrong
 - c. An analysis of the design in retrospect:
 - Any changes that would improve the design?
 - Would you use the same design if you were doing the project again?
 - d. An analysis of the suitability of the language environment for such a system, including a discussion of how the language helped or hindered the project
3. Complete listings of all source code, and disks containing all source code files, data files (if any), and an executable file.

Grading Criteria

Each team member will be required to submit a confidential evaluation on all other members of the project team on the day the final report is due. (Failure to turn in an evaluation can result in a loss of up to **10** points from your own individual project grade.) This evaluation will be accomplished only by the submitter and will assign the level of effort that every other team member contributed to each deliverable. These evaluations will be used to determine the number of points (out of 40) each team member receives.

The following will contribute to project grading:

1. **Timeliness (and quality) of first six documents.** Failure to submit a deliverable on time will result in heavy point penalty. This is done to help you keep a pace that will result in a successful project. 11 points will be deducted for each calendar day a deliverable is late. For example, if a deliverable is due on 11/19, 1:10p and if the Team Coordinator turns it in 11/20 at 8:00a, the deliverable loses 11 points, if it is turned in 11/21 at 8:00p, the deliverable loses 22 points, etc.
2. Quality, completeness, and organization of the Final Report
3. Agreement of project with System Description
4. Project scope – Is it complex enough to provide good experience but simple enough to be completed within time and provide the 7-8K of code?
5. Quality and completeness of the Software System Design
- 6 Thoroughness, completeness, and organization of testing

7. Software System operation

(Lack of errors, system crashes, ease of use, readability of user manual, correctness and completeness of user manual, etc.)

8. Quality of presentation

(Organization, pertinence, clarity and understandability of oral presentation, preparation and use of visual aids, effectiveness of demonstration*, etc.)

9. Implementation faithfulness to design; programming style

(See the Peer Review handout for an example of how these points may be graded.)

Signed by Team Coordinator on Behalf of the
Project Team _____
acronym

* Presentations are planned for a multimedia room with a stand alone PC; may have to use a portable with a projection system; may not have any computer for demonstrations. Be prepared!