H&SS Information Systems
Carnegie Mellon

67-373 Software Development Project

Spring Semester, 2012

Phase 4 - Design and Construction of Stage 2

DUE Thursday, April 12 at 11:30am

In this phase you will add Stage 2 functionality to your existing system. Your Stage 2 deliverable should implement all of the features and functions you identified in your (revised) implementation plan for Stage 2. You will conduct a user test of your system. You will create drafts of your user and technical manuals as well as a draft/extended outline of the Project History and Lessons Learned report.

The project report must contain the following sections. Weights for credit are shown in parentheses. Your work must be complete, correct, convincing and in conformance with the instructions and guidelines given in the ***Phase Report Format and Professionalism*** section of the class syllabus.

1. Executive summary.

2. Implementation Status (5%)
Clearly indicate what intended functionality has been fully or partially implemented, and what remains. Clearly identify and explain any deviations from your implementation plan from the previous phase. Specifically address all slippage - expected, but incomplete, work items. Discuss how you will make up time lost on this phase due to unforeseen design, implementation, management or quality issues.

Update your task list for the upcoming phase. Identify which team member(s) will perform each task or lead the performance of each task during the next phase.

3. Updated Architecture and Design Documents (5%)
Since requirements can evolve as your understanding of the system improves, update previous documentation (use cases, etc.) to reflect the current state of your design. Do not actually replace previous documentation, but instead, provide replacement pages (showing date of updating), that could later be merged into your original documentation.
Clearly indicate any changes that, in a substantial way, affect the overall scope or functionality of your final project.

Submit a final and complete set of test cases. This set of test cases will be compared with the test case results in Phase 5 to ensure that the project adheres to the standards set by the team in advance. Test cases should be modified to reflect any earlier comments from faculty and/or other reviewers. Any additional use cases must be accompanied by test cases. Any use case that has been modified must have revised test cases, as appropriate.
All test cases must conform to the standards listed in Phase 1.

4. Full security and survivability plan. (25%)

Document the risks to your system from intrusions, loss or theft of data or communications, hacking, and compromising of system integrity. Who are the people likely to perpetrate such activities - users, stakeholders, employees, system administrators? What are the key risk factors in your system design and implementation that create these exposures?

Document all "safe" programming practices your team has, or will implement, in its project to reduce obvious risks to system integrity, security and privacy of data.

Document all "non-programming" strategies the team will recommend to reduce the risks of intentional or unintentional loss of system functionality, data integrity, security or privacy. Who is responsible for ultimate administration and monitoring of these strategies? What are the costs (technical, organizational, economic, schedule, quality) of implementing these strategies?

5. Semi-final *hardcopy* drafts of the user/administrator and technical manuals. (20%)
These drafts must contain all of the substance and detail you are going to include in your final versions. They will be graded according their completeness, correctness, accuracy and the "professionalism" standards that apply to your phase report will be applied. Your final manuals, to be completed in Phase 5, will generally contain no new substantial material, with the exception of changes necessitated by the feedback you get on Phase 4 or changes necessitated by design changes or implementation details occurring after Phase 4.

Indicate the format in which these manuals will be ultimately published. If substantial online help is integrated into your project implementation, and not to be included in your user/administrator manual, provide printouts or screen shots for evaluation. Provide electronic copies of all training videos. Note: this does not include tool tip/mouse-over text or context sensitive help for individual buttons and form elements.

6. Results of User Tests (25%)
Create a system usability report based on properly conducted, formal tests with real test subjects. Document the usability tests you conducted - the protocols, scenarios or scripts, the subjects, the conditions, the outcomes (your measurements or observations) and/or experimental results. (You can cut and paste material from phase 3 as appropriate). List the problems found, their severities, and your responses to them. Remember, that useful, meaningful, well-conducted test sessions are expected and can help your team considerably. You cannot improve the final quality of your system only through testing – however, you can demonstrate that quality is already present. Poorly prepared or sloppily conducted test sessions are usually useless and a waste of everyone's time. Credit will not be given for poorly planned and/or poorly executed user testing.

7. Outline and Draft of Project History / Lessons Learned Report (10%)
This section documents the history of your project and the lessons you have learned this semester. The final version of this report (to be completed in Phase 5) will be copied and made available to future IS students and project teams. You are writing this section to help other IS students and future teams learn from your experiences. Your draft for this phase should be as complete as you can make it, given that the work is not yet complete.
Your report should include, at a minimum, the following sections. Modify the suggested outline as appropriate - and as approved by your faculty advisor - to fit your team's project and process.

1. Introduction: Description of the system you have implemented. Include sufficient narrative about the purposes of the system, its major stakeholders, its intended users, its benefits, etc. Summarize the capabilities your system provides to meet the needs of its users.

2. Project Data and Metrics: Overview of the implementation, process and project data.
Include details of the design, implementation and process appropriate for student readers to comprehend the development tools, methods, languages, support tools, specialized software and databases you worked with or developed. Summarize your team's project metrics, discuss their relevance and usefulness and address the overall cost of quality.

3. Lessons Learned Analysis: Your lessons learned should be realistic, appropriate, thoughtful and consequential.

4. Quality Assessment: Final assessment of overall quality (teamwork and process as well as technology), and assessment of overall achievement. Discuss the effectiveness and quality of your team's process, communications, management, attention to quality and ultimate deliverables. What have you really learned this term? What challenges did you face? How did you solve these challenges? What lessons would you pass on to future IS project teams?

Note: An RTF, PDF or MS Word version of your final project history/lessons learned report as well as an HTML version (for posting on the IS web site) are required with the archival materials due in Phase 5.

8. Project Management Section (10%)
a. Time Accounting
b. Feasibility Update
c. QA Manager's Report
d. Project Metrics
e. Risk Management
f. Problem Status

*Last Updated 01/11/2012 [*rsw*]*