CSCI4490, Fall 2015

Milestone 5 – Detailed Design Increment 2, Implementation and Testing Increment 1, and Draft User's Manual and (CSCI 5397 only: Analysis of Software Engineering Code of Ethics Violations)

Due: Paper copy of Deliverables- **Start of class** on Wednesday, November 11, 2015
Presentation slides and electronic copy of all materials- **Start of class** on Friday, November 113, 2015

1. **Deliverables:**
   a. **Updated Software Project Management Plan:** Provide an update to the SPMP delivered in accordance with Milestone 2 part 1.d to reflect any work performed as part of this milestone. Specifically you should:
      1) Update the **Work Breakdown Structure (WBS)** to reflect all of the tasks to be performed during this milestone.
      2) Update the **schedule** to be followed in performing these tasks, including a **status** of task completion to date for all tasks.
   b. **Updated Design:** Provide an updated **Design** that includes any corrections and clarifications due to comments raised during the Milestone 4 Review as well as additional areas discovered during preparations for this milestone. In particular, you should focus on the following areas presented during Milestone 4:
      1) **Interaction Diagrams:** Provide a complete set of UML interaction diagrams (your choice of Sequence or Collaboration) for **ALL** aspects of the **ENTIRE** project updated to reflect any modifications required to the High Level Design delivered at Milestone 4.
      2) **UML detailed class diagram** (to include class names, relationships between classes, methods and attributes for each class): Prepare and turn in a complete, consolidated, UML detailed class diagram for **ALL** aspects of the **ENTIRE** project updated to reflect any modifications required to the High Level Design delivered at Milestone 4.
      3) **Detailed Design:** Provide Program Description Language (PDL) for each non-trivial method included in the Detailed Class Diagrams from part 1.b.2) which shall include any modifications required to the High Level Design delivered at Milestone 4 and all remaining methods not addressed in Milestone 4 Section 1.d . PDL is not required for trivial methods such as get/set.
   c. **Implementation:**
      1) **Source Code.** Provide the Java source code required to implement the Detailed

Design provided as part 1d of Milestone 4 (roughly half of the overall project code). Your source code is not to be prototypical, but rather an operational version of the final system as per the incremental model. Your grade on this effort will include issues such as information hiding, reuse potential, source code commenting, naming conventions, program logic/control flow/ organization, etc. For classes, capitalize the beginning letter of each word in the class name (i.e., ClassName). For constants, capitalize all letters, and put underscores between interior words (i.e., NUM_AVIATORS). For objects/variables, capitalize only the first letter of interior words (i.e., operationsOfficer). Note that opOff would NOT be considered a descriptive variable name.

d. Draft User's Manual: Turn in a Draft User's Manual for your system which covers the functionality defined for the code delivered in accordance with paragraph 1.c.1 above. Note that you will likely draw from your previous milestone deliverables (system description, figures, screen shots, etc.) for your user's manual. Reference (i.e., Figure 1.) and discuss all figures and screen shots that appear in your user's manual in the accompanying text. Assume that the readers of your user's manual are naive, non-computer-savvy, end-users of the system. Your final user's manual must include **ALL** of the following sections at a minimum; your draft user's manual may omit sections printed in *italics* below for this milestone. They are provided for your information to be used in drafting your final manual.

1) **Cover Page** (title page)
2) **Table of Contents**
3) **System Introduction**
   a) Purpose of document
   b) General overview of software system developed
4) ***System Set Up:*** *This section must provide the user with everything needed to install, setup, logon to, and begin using your system. Be sure to include*
   a) The explicit steps a person needs to install and begin working with the system
   b) Include filenames and location
   c) Administrative passwords
   d) How system is launched
5) **High-Level View of System:** Include high-level diagrams and accompanying discussion. Consider a "main component only" UML Class diagram. Be sure to reference and discuss all figures used.
6) ***Tutorial:*** *At least three complete examples with actual data, actual messages, screen shots, etc.*
7) ***Detailed View of System:*** *Include a hierarchical decomposition (and discussion) of your product. Consider using your system-wide UML Detailed Class Diagram to aid your discussion. Have at least: one section per input/output screen or menu, with a subsection for each button/dial/menu, and a discussion of the relevant parts of your software system.*

8) **Index:** Give the page numbers of the main items of interest in your user's manual

9) **Appendices:**

a) Quick Reference Card (arranged such that the user could cut out and laminate)

b) System Requirements

c) Troubleshooting

d) Maintenance Procedures and Issues

e) Developers' Information (your names, Client name, current emails, etc.)

e. Traceability Matrix: Show how each component in the design and implementation developed during this milestone trace back to the Specification and ultimately to the Requirements Document presented in Milestone 1.

f. Copies of Slides: In addition to a paper copy of each part of this milestone, also provide a paper copy of all slides (to include GUI screen shots) used in your oral presentation to your instructor prior to beginning your presentation by the due date specified on page 1 of this milestone.

2. **Presentation:** The following shall be included in the Milestone 5 presentation:

a. Updated Software Project Management Plan: Provide a presentation of any significant changes to the SPMP delivered in accordance with Milestone 2 part 1.d to reflect any work performed as part of this milestone. Specifically you should:

1. Present an updated **Work Breakdown Structure (WBS)** which reflects all of the tasks to be performed during this milestone.
2. Present an updated Gantt chart which reflects the **schedule** to be followed in performing these tasks, including a **status** of task completion to date for all tasks.

b. Updated Design: Provide a presentation of **any significant changes** to the design made since the Milestone 4 presentation. Minor changes such as adding or changing a message on an interaction diagram, adding or changing the attributes or methods on the detailed class diagram or minor modifications to the PDL should not be presented. However, adding or removing interaction diagrams, adding or removing classes, and significant changes to the PDL should be briefed.

c. Demonstration: For the functionality being implemented under Increment 1 of the Detailed Design, select the most complex and lengthy scenario possible from those whose corresponding interaction diagram was provided in Milestone 4 part 1.c.1) (note: your scenario MUST include data store access) for presentation during the milestone review. Demonstrate how the behavior implemented for this milestone is fulfilled by your software system by clearly showing how each step in the scenario being implemented during this milestone is met by your system in execution. Part of your grade will be based on the appropriateness of your scenario selection.

d. Implementation Testing. For the code developed per part 1.c.1) above:

1) **Code Walkthrough:** Conduct a code walkthrough on the most complex portion of the source code you have developed.

2) **Demonstration**: Demonstrate how the behavior required by the scenario selected in

paragraph 2.c. above is fulfilled by your software system by clearly showing how each step in the scenario is met by your system in execution.

3) **Static GUI Screenshots:** Have slides prepared that show static GUI screen shots of your system in operation that you can use in the event you have difficulty running your live demonstration. Note that Control-Alt-PrintScreen will let you copy and paste the active window into PowerPoint. Include these slides in your paper deliverables.

e. Draft User's Manual: Present the Draft User's Manual for your system which covers the functionality defined for the code delivered in accordance with paragraph 1.d. above. Presentation of your draft user's manual is only required to include sections listed below, although your final manual shall include all sections listed in paragraph 1.d. above.

1) **Cover Page** (title page)

2) **Table of Contents**

3) **System Introduction**

   a) Purpose of document

   b) General overview of software system developed

4) **High-Level View of System:** Include high-level diagrams and accompanying discussion. Consider a "main component only" UML Class diagram. Be sure to reference and discuss all figures used.

5) **Index:** Give the page numbers of the main items of interest in your user's manual

6) **Appendices:**

   a) System Requirements

   b) Developers' Information (your names, Client name, current emails, etc.)

f. Traceability Matrix: Present a detailed traceability matrix, showing how each component in the design and implementation developed during this milestone trace back to the Specification and ultimately to the Requirements Document presented in Milestone 1.

g. Ethics Presentation (CSCI 5397 only): As part of your presentation, each CSCI 5397 student shall include a BRIEF presentation from the article "Software Engineering Code of Ethics is Approved" *Communications of the ACM*, October 1999/Vol 42. No. 10. pp 102-107. Note that the software engineering code of ethics is available via the internet at: http://www.acm.org/serving/se/code.htm

1) Your presentation **SHALL** include an example of the particular ethics principle **AND** a publicly available event (provide the citation for the event) that shows a company or individual that violated one (or more) of the Software Engineering Code of Ethics principles listed below, and what happened as a result. CSCI 5397 students shall coordinate their selection so that no two students cover the same violation or the same principle(s).

   - Principle I. Public
   - Principle II. Client and Employer

- Principle III. Product
- Principle IV. Judgment
- Principle V. Management
- Principle VI. Profession
- Principle VII. Colleagues
- Principle VIII. Self

2) Many online ethics sources exist, and you are free to use any properly cited website or paper. Some excellent sources for ethical issues related to software engineering can be found at http://onlineethics.org/ as well as at http://computingcases.org/
3) You must include a citation or web address for the violation-related-issue you present.
4) Tailor your presentation of your assigned ethical principle to the violation that you cite. Use AT MOST two slides to review your ethics principle and four slides to discuss and analyze the case study you select.
5) In addition, in order to gauge the quality of your presentation and to determine the class's understanding of the material being presented, you shall also include a five question quiz on the contents of your presentation to be given to the class. You shall coordinate with the instructor and any other CSCI 5397 students to ensure only one quiz is given to the class.

Notes:

a. Each member shall participate in all portions of the term project, including *each* oral presentation.
b. Each member shall be fully ready to go at the beginning of the presentation period to include handing in a paper copy of all slides and GUI screen shots used in the presentation/software demonstration.
c. Any team not ready to hand in their paper copies of the above, or to deliver their presentation/demonstration when called upon, will have 25 percent deducted from their presentation grade for the milestone and shall go to the end of the presentation cycle for that day. Presentations not delivered during class on the due date will earn a grade of zero, but will still have to be completed and turned in to receive a passing grade for the course.

Paul Young
Last Modified: Wed Oct 28 2015