

15-413: Introduction to Software Engineering

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Assignment 4: Requirements, Planning and Risk Management

Due: Friday, September 23, 11:30am (hardcopy at beginning of class)

90 points

This assignment is a group assignment. Each project group should turn in one response to each part, with all the names of the group members.

Parts of this assignment depend on interaction with clients. Occasionally, you may not be able to meet with clients for reasons outside your control, e.g. they are traveling. If this is the case, contact the instructor or TA to get an extension on the assignment. However, you are expected to contact your client promptly so as to avoid any possible delays.

Part 1: Initial Requirements (40 points)

Turn in a list of stories you have gathered from your client so far. Each story should have a name, a short description, a priority, and an estimated effort level in ideal person-hours. You must explain the scale you used for priorities.

If you have been gathering requirements as handwritten stories on 3x5 cards, you may turn in a photocopy of your cards. In this case the cards **MUST** be readable to the instructor and TA and you **MUST** explain where the priority and effort estimates are and what is the priority scale.

Your requirements are expected to be well-enough formed that you have a concrete plan of action for the first iteration, but they are not expected to be in final form. Remember that XP allows the client to add new stories, remove them or change them at any time. Also, it is unrealistic to expect that you will fully understand the requirements at this early stage.

Part 2: Project Plan (20 points)

Develop a plan for an XP iteration which covers weeks 4-6 of the course. You should assume you will have 18 hours per person to work on project-related tasks. Use a load factor of 2 to come up with an initial estimate of how many ideal person-hours of work you will be able to fit into the iteration (i.e., 9 ideal hours per person).

Turn in:

1. An ordered list of stories in the iteration, as chosen by your clients
2. Explain the risk scale you used in prioritizing stories by risk
3. For each story, the name, estimated effort, estimated risk, and priority level

If you are using 3x5 cards, you may turn in a photocopy. As above, make sure the cards are readable and that you interpret where things are on the card and what they mean.

NOTE: this assignment is due at the end of week 4, so you will already have done part of the work in this iteration. Therefore, you should try to finish this early in the week (as you continue to gather requirements, in part 1).

Part 3: Picture of Success (10 points)

Define a picture of success for your project. As discussed in class, make sure your picture of success is challenging. For example, in a successful project, students will have done well enough to expect an A in the course, and clients will be happy enough that if they needed additional work on the project, they would be happy to hire the students part-time in the Spring semester. The picture of success should be concrete and measurable to the extent possible, and explicitly tied to a specific point in time. The picture of success should be a single page with a few clearly defined success statements. Get feedback on your picture of success from your client.

Part 4: Risk Analysis (20 points)

Do a risk analysis for your project. Come up with a list of 5-15 risks (if you find more, focus on the top priority ones), described as condition-consequence statements. Your client may be helpful in suggesting some of these, based on their domain expertise, but the risk analysis is primarily your responsibility. Assign each risk an impact, a probability, and a timeframe; use a scale with at least 3 points for each of these, and explain your scale. Order the risks by risk exposure. Finally, for each risk, describe a strategy you can use to mitigate the risk, by reducing its likelihood or decreasing its impact, or both.

You may find the taxonomy-based questionnaire useful to help ensure your risk analysis is comprehensive. The questionnaire is Appendix B, pages 53-76 of the document. Use discretion, because not all of the questions will be relevant in the course project setting.