

Each team member must identify the components for which he or she is responsible; each team must document the systems, containers, and components for the project and detail which team member is responsible for which components.

Background

For efficiency, large development teams often need to work in parallel on different components of a software product, even when these components interact with one another. This semi-independent development can occur when there is a well-defined interface for the various components that other developers will use. Although you will not need to define your precise interfaces for this document, you do need to provide detail down to the component level and describe how components will interact with each other. While in many commercial development environments your team would be small enough that communicating these interface details can occur bilaterally and informally, for this assignment you will be required to demonstrate that you have given focused, thoughtful consideration to design and to how your team has decided to divide up the work and tackle it in parallel. As the cartoonist Richard Guindon is purported to have said:

"Writing is nature's way of letting you know how sloppy your thinking is."

While Agile development practices do not encourage the completion of big design work before starting to code, high-performing development teams do start with a broad understanding of how the major sub-systems and components will be organized and how they will interact. Different team members will tend to focus on different areas based on a combination of their current skill and experience, where they are trying to grow their knowledge, and on what the team needs to ensure appropriate redundancy in system understanding.

Assignment

Provide a description of your project, including the systems, containers, and components that the team intends to develop. Describe how the components will interact with each other (e.g. function calls, RESTful interfaces, share databases, etc.); although you are not required to specify the exact interfaces, short of that you should be as precise as possible. The document should include diagrams or other visual representations, and text that refers to those diagrams. Come to an agreement with your teammates regarding how to divide up responsibility for various components of your project, and include in your document a mapping of teammate to component, identifying who will develop each component.

Your design will likely change between now and the end of the year. This is an inevitable and acceptable evolution of the software engineering process and will not necessarily count against your ultimate grade. This assignment is intended to motivate you to consider critical organization and development decisions early, and to practice your ability to identify and communicate them to others.

Grading

This assignment will be evaluated for the following:

- Design: does the design represent good software engineering practices?
- Completeness: does the documentation completely describe the components and interactions?
- Clarity: is the documentation well-written, precise, and easy to understand?

- Structure: Is the document structured and organized in a logical manner?
- Responsibility: Are you adequately contributing to the team with the responsibilities you have accepted?

Format

The document should use 11pt. font, single-spaced, formatted as a PDF document.