

Project Conceptual Design

The requirements specification has the critical functional and nonfunctional issues and, through analysis, considered the interrelationships and implications to system development. The requirements specification explains what the system will do. Next the conceptual design will begin to detail how the system will meet these requirements.

The conceptual design is analogous to the architectural designs for a building. Important information is conveyed: what does it look like, how does it fit together, what are the main subsystems and components, and what function do they provide and how, what is the critical infrastructure, and so on. The conceptual design provides the structural description of the system. It does not delve into component details, it addresses system organization and function

Derive and evaluate the important functional properties for your system. Prioritizing the properties can lead to rational decisions about design, specifically trades between competing approaches. You should evaluate key system trades in your conceptual design

Consideration of possible limitations may be important (sometimes performance is sacrificed for other properties). In the conceptual design you will resolve those performance issues not specified by requirements. Strive for a conceptually clear organization with a well defined basis in the requirements that it meets.

Some things to include in your conceptual design:

- Describe the system
- Sketch the physical form
- Explain the concept of operation
- Develop complete use case and detailed scenarios for the concept
- Define the function and configuration of each subsystem.
- Identify every significant hardware component
- Conduct trade studies when there are significant alternatives
- Describe trade studies (use comparative analysis techniques) and results
- Describe the system software architecture and detail diagrammatically.
- Plan the deployment of the software onto hardware
- Provide an installation plan including floor space, infrastructure requirements and user flow.
- Validate the design relative to requirements (show traceability and priority)
- Describe needed prototyping activity (what questions remain)
- Provide references to source material.

Consider whether stakeholders will understand: how the system will operate, how to construct the system and whether the design is consistent with the requirements? Length is not limited but 10 pages of text (without figures) is a reasonable guideline. Designs should be concise yet complete: could another team detail the design given your documentation?

The design document will be evaluated by your peers and presented to stakeholders

The document must be submitted to the digital drop box as a PDF file. The file must be named in the following pattern: <teamname/acronym>_concept_v<#>.pdf

