

Lecture 10, Feb 1, 2023

Specifications vs. Requirements

- Design specifications capture prototype details
 - As opposed to design requirements, which specify what the prototype needs to do but not how it's done
 - Specifications are detailed and contain what components to use, how they are used, etc
- Requirements are about determining conceptual designs; specifications define how the prototype is actually built using components
- The line between requirements and specifications can be situational

Systems Integration

- Partitioning: Integrate and test in small chunks
 - Test small parts before testing the whole system
 - Test only when parts can be reliably connected, i.e. make sure interfaces are ready before testing
- Forethought: Plan integration from the start
 - Integration is a key design activity, not an afterthought
 - Limit design concepts from the start by considering interfacing needs
 - Plan out order of development using this
- Limitation: Integration of subsystems necessarily reduces their flexibility
 - Subsystem design space is bound by interfacing needs
- Intentional process: backup, isolate, inspect, revert and rollback