I494 - Designing and Developing an Information System

Class 4

Classic Waterfall

Requirements Lifecycle

Elicitation → Analysis → Specification → Verification

“ilities”

- Usability
- Maintainability
- Flexibility
- Testability
- Scalability
- Availability
- Extensibility
- Security
- Portability

- Compatibility
- Backwards Compatibility
- Interoperability
- Reusability
- Quality
- Marketability
- Configurability
- Auditability
- Efficiency
Kinds of Requirements
- Exciting
  - Over the top ideas
- Regular
  - Standard ideas
- Expected
  - Unstated ideas

Excellence in Requirements
- Complete
- Correct
- Feasible
- Necessary
- Prioritized
- Unambiguous
- Verifiable

Complete Requirements
- Fully describes functionality
- Contains all information to design and build
- Use placeholders (templates)
- Example:
  - The system must capture customer information
  - The system must capture name, address, phone number and email information for customers

Correct Requirements
- Strive for total accuracy
- Users are critical in determining correctness
**Feasible Requirements**
- Can it be built?
- Do you have the skills to build it?

**Necessary Requirements**
- Actual need
- Legal compliance
- Traced to origin
  - Understand why functionality is required

**Prioritized Requirements**
- Rank
  - High, medium low
- Trace
  - How are functions related?
- Provides flexibility for schedule adjustments, new requirements, etc.

**Unambiguous Requirements**
- Two person test:
  - Randomly choose two people
  - Do they agree on interpretation
- Natural language can be problematic
- Use the user's language – not jargon
Verifiable Requirements

- Develop test scenarios in advance

Exit Strategy

- All projects need an exit strategy
- In other words, plan for completion
- Might be contractually defined

Version Management

- Consider the lifecycle of the requirements
- Do you change them?
- Is there a document for each change?
- What about the schedule?
- Changes have ripple effects

Organization

- How should we label the requirements
  - By name
  - By number
  - By category
Strategy
- Work from high level to details
- Use diagrams to communicate ideas
- Build a dictionary
  - Users have a different language
  - Use html documents for navigation

Requirements: What Are We Producing?
- A document?
- A contract?
- Does the requirements specification follow a lifecycle?

What is a good task?
- Description of what is to be done
- An estimate of how long it will take to complete
- An identified responsible party to complete
- Pre-constraints
- Co-constraints
- Post-constraints
<table>
<thead>
<tr>
<th>Are all necessary?</th>
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