Lecture 08: Techniques for Gathering Requirements

“The goal of requirements engineering is to develop high quality – not perfect – requirements that allow you to proceed with construction at an acceptable level of risk.”
-- from “Software Requirements”, Karl Wiegers

Outline
- Techniques:
  - Use Cases / Usage Scenarios
  - Commonality and Variability Analysis
  - Frequent Customer Feedback
  - Throwaway Prototyping
- Risks from Inadequate Requirements Processes
- Discussion Questions

Note: The list of techniques is necessarily incomplete.

Resources
- "Software Requirements", by Karl Wiegers
- "Use Cases and The Ever Unfolding Story", seminar by Dan Rawsthorne
- "Rapid Development", by Steve McConnell
  - Ch. 10, 14.1
- "The Pragmatic Programmer", by Andrew Hunt and David Thomas
  - Ch. 7 – all of it is relevant

Use Cases
- Describe the typical paths for a user to interact with a system
- Increasing level of detail depending on the complexity of the interaction
  - "The ever unfolding story" (Dan Rawsthorne)
- Questions to consider (in that order):
  1. Who are the actors?
  2. What are they (normally) doing? (a.k.a. Main success scenario, MSS)
  3. What can go wrong with that?
  4. How do we then handle this situation?

Use Case Example using the Suggested Template

<table>
<thead>
<tr>
<th>Goal</th>
<th>Reading one's web-based email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Actor</td>
<td>Email account owner</td>
</tr>
<tr>
<td>Precondition</td>
<td>User has email account with a site; user knows site's address</td>
</tr>
<tr>
<td>Successful Postcondition</td>
<td>Emails retrieved</td>
</tr>
<tr>
<td>Unsuccessful Postcondition</td>
<td>Emails not retrieved</td>
</tr>
<tr>
<td>Trigger</td>
<td>User's incoming read request via the site's web</td>
</tr>
<tr>
<td>Main Success Scenario</td>
<td>...</td>
</tr>
<tr>
<td>Failure Scenario</td>
<td>...</td>
</tr>
</tbody>
</table>
Use Case Example: Main Success Scenario

Example: Reading your web-based mail (e.g., @ hotmail, yahoo, gmail, etc.)

Commonality and Variability Analysis

Commonalities are the enduring concepts of the domain you’re modeling.
- They would give stability to your designs.
- Variabilities are only defined in the context of existing commonalities.

Example: Computing the price for a purchase at an e-commerce site