First, Some UML

- Unified Modeling Language
  - Developed in Mid-’90s
  - Depict behavior and interactions of a software-based system
  - 14 different diagrams
    - Structural (Static)
    - Behavioral (Dynamic)
  - Strengths / Weaknesses
Use Case Diagram
Use Case Diagram includes and extends
Use Case Diagram
Use Case Diagram
Sequence Diagrams
Be careful

- UML
- DSM
- MDA
- ALSO:
  - CORBA
  - IDL
  - IIOP
  - MOF
  - XMI
  - CWM
  - OMA
  - ALSO:
    - MDE
    - MDD
    - MDSD
    - MDA
    - MDI
    - DDD
Use cases

• Not diagrams, Not UML
• Stepped, sequenced procedures
• Illustrate how the user interacts with the system
• Result in a goal (The main point of the use case)
• Three circumstances
  • Normal course (Happy day, sunny day, golden path)
  • Alternate course
  • Exception course
• Can use personas / scenarios to aid in creation
<table>
<thead>
<tr>
<th>Use Case ID</th>
<th>Use Case Name</th>
<th>Primary Actor</th>
<th>Complexity</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Places a bid</td>
<td>Buyer</td>
<td>High</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Purchases an item</td>
<td>Buyer</td>
<td>High</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Creates an account</td>
<td>Generic User</td>
<td>Medium</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Searches listings</td>
<td>Generic User</td>
<td>Medium</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Provides feedback</td>
<td>Generic User</td>
<td>Medium</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Creates an auction</td>
<td>Seller</td>
<td>High</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Ships an item</td>
<td>Seller</td>
<td>High</td>
<td>2</td>
</tr>
</tbody>
</table>
## Use Case detail

<table>
<thead>
<tr>
<th>Use Case Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use case number</td>
<td>ID from index to identify each case</td>
</tr>
<tr>
<td>Application / System</td>
<td>The system or application the use case references</td>
</tr>
<tr>
<td>Use case name</td>
<td>Name of use case (Brief and descriptive)</td>
</tr>
<tr>
<td>Use case description</td>
<td>Details of use case, written out as narrative</td>
</tr>
<tr>
<td>Primary actor</td>
<td>Main actor involved in activity (Use case)</td>
</tr>
<tr>
<td>Objective</td>
<td>What is the goal of the Primary Actor</td>
</tr>
<tr>
<td>Preconditions</td>
<td>What must happen before this use case can begin, if anything</td>
</tr>
<tr>
<td>Trigger</td>
<td>What event causes the use case to begin</td>
</tr>
<tr>
<td>Basic flow</td>
<td>Happy day scenario, from inception to conclusion</td>
</tr>
<tr>
<td>Alternate flows</td>
<td>Alternates and exceptions</td>
</tr>
</tbody>
</table>
Use case: Add one book

• Basic flow
  1. Librarian enters title of new book
  2. Librarian enters author of new book
  4. A new book is created
  5. Book is added to available books for checkout
  6. Librarian receives confirmation of success

• Alternative (Exception, really) flows
  • 1a, 2a, 3a: The system detects an invalid data entry
    1. The system informs the librarian
    2. Librarian re-enters data, alternative flow steps 1-2 repeated until successful or activity canceled
  • 5a System detects duplicate number during DB commit
    1. System informs librarian
    2. Operation canceled
The Use Case

- Easier to read
- Easier to communicate procedures / use
- Easier for clients to understand
- Helps you as the designer understand the process
- Even as they get more complex, are still easier to digest - much more so than diagrams