Trillium Grant Management

Team Ulysses
Agenda

- Our Product
- Methodology
- Requirements
- Design
- Tools and Technology Overview
- GUI - Evolution and current state
- Metrics/Risk
- Testing
- Project Status
Who Is Trillium?

- Non-profit organization based in the Greater Rochester Area
- Provides a variety of health care services to Geneva/Bath/Rochester areas
- Most funding is based on grants received from Federal, State and local authorities

http://trilliumhealth.org/
Our Product

Three main areas of concern:

- Grant Management
- Task Management
- Document Management
Methodology - RUP

5 week iterations
1 inception, 1 elaboration, 3 construction, 1 transition.

Why we choose RUP
● Develop software iteratively.
● Manage requirements.
● Use component-based architectures.
● Visually model software.
● Continuously verify software quality.
● Control changes to software
Scope

- Main Project
- Additional Features
Scope - Main Project

● Creation of Grants, Tasks
● Adding Documents
● Audit Trail
● Active Directory (LDAP)
Scope - Additional Features

● Outlook Integration
● Task Templates
● Emailing Status Updates
Requirements

- We have 98 requirements
- For C1 we elicited 30 requirements and are in the process of completing them
- 21 so far *As of 11/23/14
- Process for eliciting requirements.
  - Interviewing stakeholders - went to Trillium
  - Created quick prototypes (paper and computer model) and asked for feedback

Team finishes first draft

First alterations

Second alterations

Signed off by Sponsor and Team

Third alterations

First CR

9/22

11/18
## Requirements

<table>
<thead>
<tr>
<th>2.2.4</th>
<th>Type</th>
<th>Requirement</th>
<th>Acceptance Test</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Tasks shall</td>
<td>be able to contain child tasks</td>
<td>As a grant owner, create a task and a child task for the first task</td>
</tr>
<tr>
<td>2</td>
<td>Tasks shall</td>
<td>allow at least 9 levels of sub-tasks past the parent task</td>
<td>As a grant owner, create 10 levels deep of child tasks</td>
</tr>
<tr>
<td>3</td>
<td>Tasks shall</td>
<td>have due dates</td>
<td>As a grant worker, I can assign the due date of a task</td>
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</table>
Design

Focused on three main quality attributes

- Usability
- Securability
- Modifiability
Usability

“ease-of-use”

- Learnability
- Efficiency
- Satisfaction
Securability

- Authentication / Authorization of users
- Audit Trail
- Keeping the documents in a separate server
- Backup of documents
- Sanitization of Inputs
Modifiability

- Modules/Packages
- Increase Cohesion
- Reduce Coupling
- UI is easily modifiable
  - Mostly because we are using REST interfaces
Trillium Health
Grant Management
High Level Architecture
Tools and Technology Overview
GUI Evolution

- UI evolved from our prototypes
  - Feedback as well as suggestions from customers
GUI Evolution

Trillium Grant Management

Active Grants

<table>
<thead>
<tr>
<th>Name</th>
<th>Status</th>
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<tbody>
<tr>
<td>Yami Yugi</td>
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<tr>
<td>Information</td>
<td></td>
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<tr>
<td>Contacts</td>
<td></td>
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<td>Workflows</td>
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<td>Documents</td>
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<td>Submissions</td>
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<td>Tasks</td>
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<tr>
<td>Seto Kaiba</td>
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<tr>
<td>Jack Atlas</td>
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</tr>
</tbody>
</table>

Yami Yugi

Owner
- Yuma Tsukumo
- yuma@heartlandcity.net

Award
- $ 5,000

Description
- Genesis

Links
- [HARDCODED] EXTERNAL LINK #1
- [HARDCODED] EXTERNAL LINK #2

DEV NOTE Not sure how active/potential works, so I'm assuming stopped is potential and active/in-prog is active.

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Metrics

● Our Metrics
  ○ Time cards
  ○ Number of tasks completed each phase
  ○ Number of bugs per KLOC
  ○ Code Metrics
Time Cards

Total Hours: 418.45
Average Per Week: 31.9

Career Fair Week

* As of 11/23/14
What have we spent the most time on?

* As of 11/23/14
# Time per Task

<table>
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<tr>
<th>Task</th>
<th>Time (hours)</th>
<th>Tasks</th>
<th>Time per Task</th>
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<td>Elaboration</td>
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<tr>
<td>Construction</td>
<td>112.25</td>
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<td>4.008928571</td>
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* As of 11/23/14
Number of Bugs per KLOC

- 1 backend bug
- 2 front end bugs
- 958 backend LOC

* As of 11/23/14
# Coding Metrics

- Non Commenting Source Statements (NCSS).
- CCN - Cyclomatic Complexity Number

<table>
<thead>
<tr>
<th>Package</th>
<th>Classes</th>
<th>Methods</th>
<th>NCSS</th>
<th>Javadocs</th>
<th>Javadoc lines</th>
<th>Single lines comment</th>
<th>Multi lines comment</th>
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**Program NCSS** 958.00  
**NCSS average** 2.27  
**CCN average** 1.09  
**Javadocs average** 0.64

* As of 11/23/14
Risk

● How did we account for risk?

● What Risks happened?

● What Risks didn’t happen?
Testing

Strategy
● Front/Back-End Unit Testing
● Usability Testing
● Acceptance Testing

Challenges
● Prod/Dev Technologies
● Only behavioral tests automatable, not static
Current State

● Completing C1 this week
  ○ Completed about 21% of the total coding requirements so far
What Went Well

- Able to meet almost everyday
- Good feedback and communication with Sponsor
  - Always available via email
  - Let us choose our technologies
- Brian’s Bagel Mondays!!!
What Went Poorly

- Email meetings for the team
- Environment setup
- Setup on Trillium’s server took longer than expected
Looking Ahead...

What will we do differently?

**#13: Wishful thinking**
- hoping things would go quicker than they did
- have meetings in person is the best way to get things done

**#15: Insufficient risk management**
- Made the risk doc and assigned risk weeks, but then kind of dropped the document
<table>
<thead>
<tr>
<th>Spring</th>
<th>Team Activities and Deliverables</th>
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<td>C2</td>
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Questions?

That's all Folks!

Thanks!