Project Kickoff

Tuesday, the 15th of October

"I am always doing that which I cannot do, in order that I may learn how to do it."

— Pablo Picasso



Project Requirements

- Non-trivial mechanical system
- Non-trivial electrical/sensing system
- Realtime control (i.e. you must use a microcontroller)

That's it!*

Project Timeline





What is Scrum?

"Scrum is an Agile framework for completing complex projects. Scrum originally was formalized for software development projects, but it works well for any complex, innovative scope of work. The Scrum framework is deceptively simple."

-SCRUM ALLIANCE

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Why might you need a "formal" process?

Define goals from the start and communicate with those expectations

Balance effort between tasks

Communicate about the big picture and pacing

More clearly define what we want

Be more accountable

Establish a good method for communicating

Maintain our level of involvement/quality throughout the entire project

Be more proactive

Quicker execution and iteration

Get going!

How it all works







Artifact: Product Backlog Principles: prioritization, comprehensive overview

The team collaborates to develop a backlog of work.

- 1. Try to capture *all* the work necessary for a successful product
- 2. Rank order items from highest to lowest priority
- 3. Items near the top are most well-defined







Ceremony: Sprint Planning Principles: autonomy

The *team* commits to doing a *defined* amount of work.

- 1. Define a clear goal for the sprint
- 2. Decide how to measure success
- 3. Create prioritized list of tasks
- 4. TIMEBOX!



Artifact: Sprint Backlog Principles: accountability, D.O.D. (definition of done)

The *team* commits to doing a *defined* amount of work.

 Clearly defined list of tasks
Consensus on definition of done
Assign a single directly responsible individual



Artifact: Scrum Board Principles: transparency, visibility

The *team* commits to representing *all* work to be done in one place.

- 1. Capture all work
- 2. Keep board up-to-date
- 3. Have a shared definition of done (Is it tested? Documented? Approved?)





Ceremony: Daily Meeting Principles: accountability, visibility

Team meets for <u>no longer than 15 minutes</u>.

- 1. What did I do yesterday to help the team meet the sprint goal?
- 2. What will I do today to help the team meet the sprint goal?
- 3. What impediment(s) do I see that prevent me or the team from meeting the sprint goal?



Ceremony: Sprint Review Principles: iteration, feedback, integration

The team delivers an *integrated* increment of the product. **Purpose**: <u>Get feedback</u> from key stakeholders to inform next iteration



Ceremony: Retrospective Principles: continuous improvement, reflection

Focus is on *process*, not product. The team meets to discuss what went well and what to improve.

Artifact: kaizen - improvement

Ceremony: Retrospective Principles: continuous improvement, reflection





Artifact: kaizen

Principles: autonomy, continuous improvement

The *team* identifies *one* process improvement to focus on next sprint.

- 1. Group Δ 's by theme
- 2. Identify highest impact themes
- 3. Decide on a single kaizen
- 4. Place *kaizen* at the top of the next sprint backlog

Principles







Iteration

Visibility

Autonomy





Time

Complex Project = Uncertainty



ICF Prosthetic Arm An intuitively controlled prosthetic

"The minimum viable product for the team is to create an actuated gripping mechanism which responds to sensor information gathered from body movement. The dream goal is to develop a 'smart' arm which can read body movement, actuate to grip and release objects, and send feedback to the user via a special pressure cuff."

Week 1 - 2.5 hr "Hack Job"

1st Sprint Review - Rev-02



Interim Sketch Modeling

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2nd Sprint Review - Rev 03

K.K.



2nd Sprint Review - Rev 04



3rd Sprint Review -Rev 06

Demo Day



HOW TO BUILD A MINIMUM VIABLE PRODUCT

NOT LIKE THIS



https://blog.fastmonkeys.com/2014/06/18/minimum-viable-product-your-ultimate-guide-to-mvp-great-examples/



team

contact

Team [REDACTED]. Project Documentation

ICF Prosthetic Arm.

Intuitive feedback and control of a below-the-elbow prosthesis

What is it all about?

For below-the-elbow amputees, the absence of a forearm and hand can impact every facet of daily life. Prosthetic options can be an enhancement, but can take months or years of training and therapy, be expensive or uncomfortable, and rarely can be adjusted to growing or changing bodies. This team, as part of an 8-week intensive project at Olin College of Engineering, took on the challenge of creating an intuitive interface for control and feedback of a prosthetic limb, in an attempt to prove that good prosthetics adapt to the human, not the other way around.

Goal.

The minimum viable product for the team is to create an actuated gripping mechanism which responds to sensor information gathered from body movement. The dream goal is to develop a 'smart' arm which can read body movement, actuate to grip and release objects, and send feedback to the user via a special pressure cuff.

Read more

A Peek at Our Progress.

Check out the video below to see our newest work!



"Ever tried. Ever failed. No matter. Try Again. Fail again. Fail better."

— Samuel Beckett

image source: <u>www.npg.org.uk</u>