

Agile Software Development

Taryn Heilman
March 27, 2018



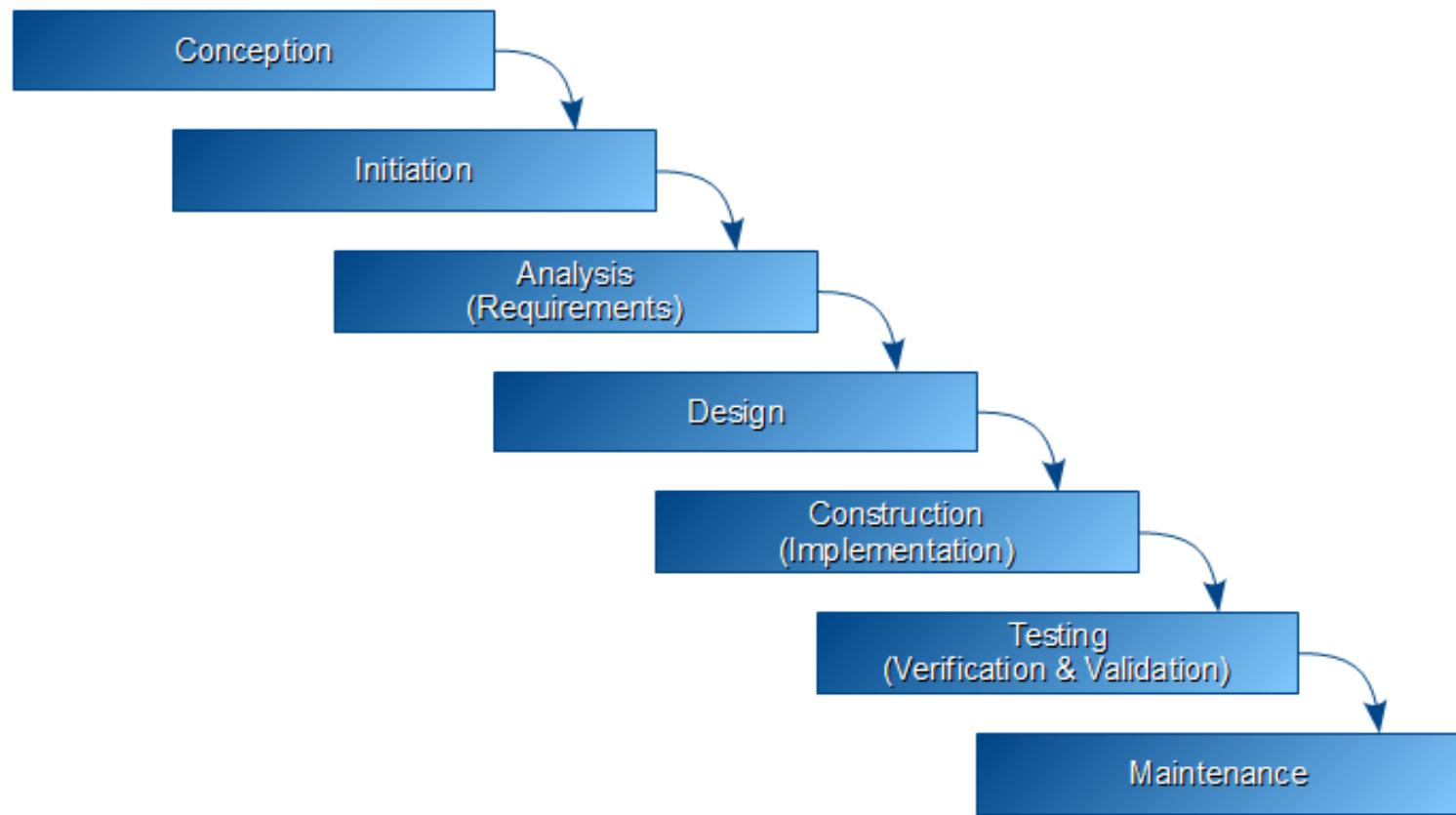
Learning Objectives



- Understand the waterfall methodology employed in manufacturing, and discuss the problems with translating this to software (motivate agile)
- Introduce agile methodology and scrum
- Overview of scrum framework
- Outline what your next few weeks will look like and set expectations

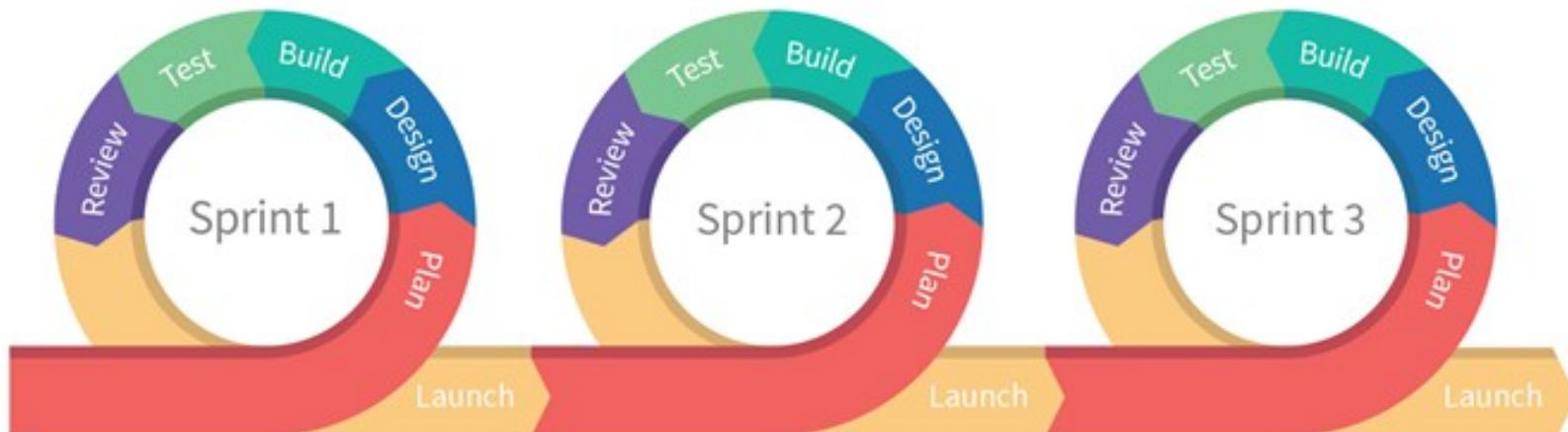
Waterfall Methodology

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What makes more sense than the waterfall methodology for *software* development? galvanize

Agile Methodology:



The Agile Manifesto

www.agilemanifesto.org

- *Individuals and interactions* over processes and tools
- *Working software* over comprehensive documentation
- *Customer collaboration* over contract negotiation
- *Responding to change* over following a plan

That is, while there is value in the items on
the right, we value the items on the left more.

One Popular Agile Framework: **Scrum**

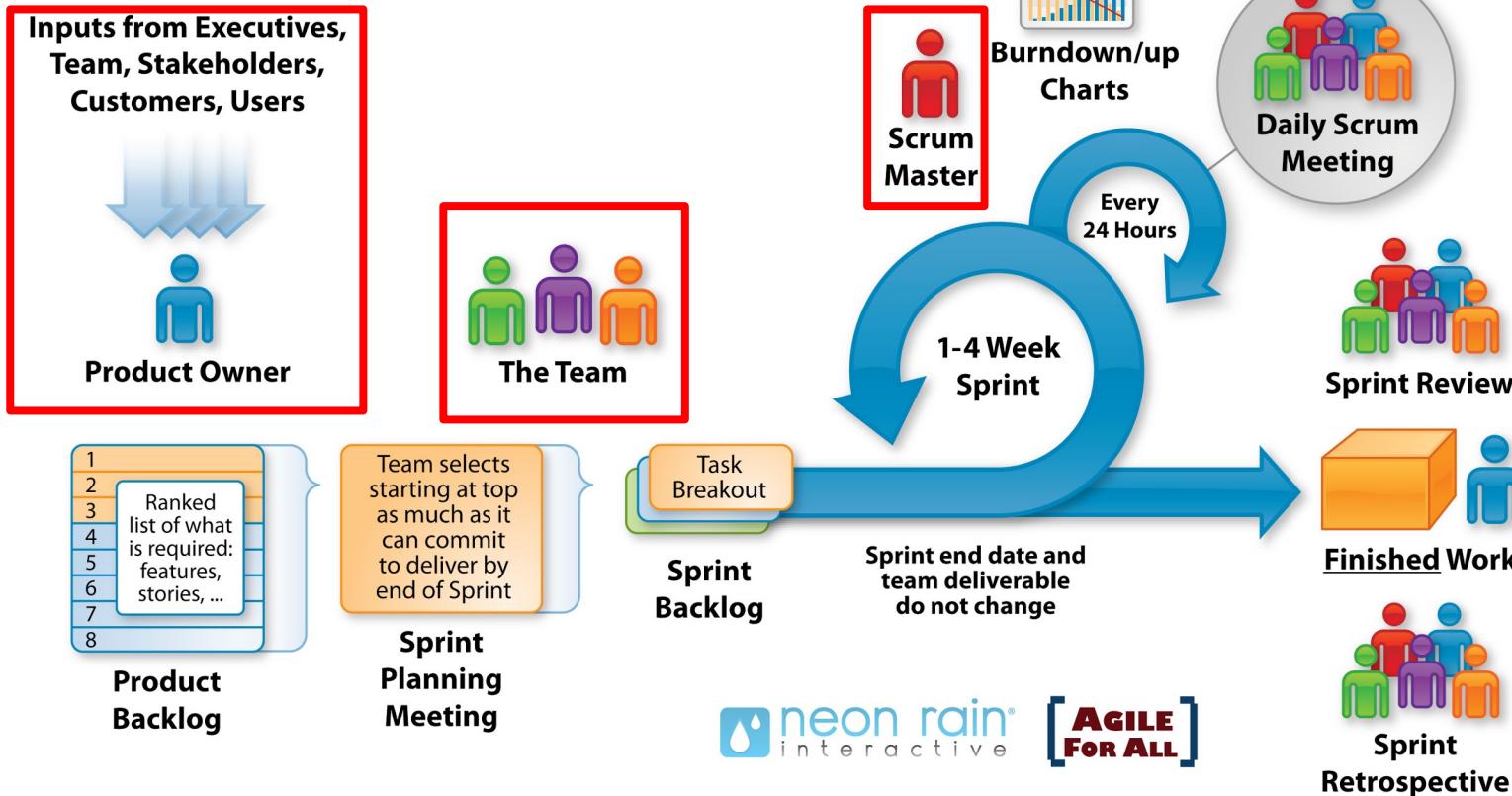
Not the rugby kind...



One Popular Agile Framework: Scrum

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The Agile: Scrum Framework at a glance



One Popular Agile Framework: Scrum

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The Agile: Scrum Framework at a glance

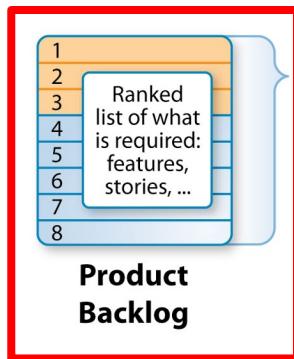
Inputs from Executives,
Team, Stakeholders,
Customers, Users



Product Owner

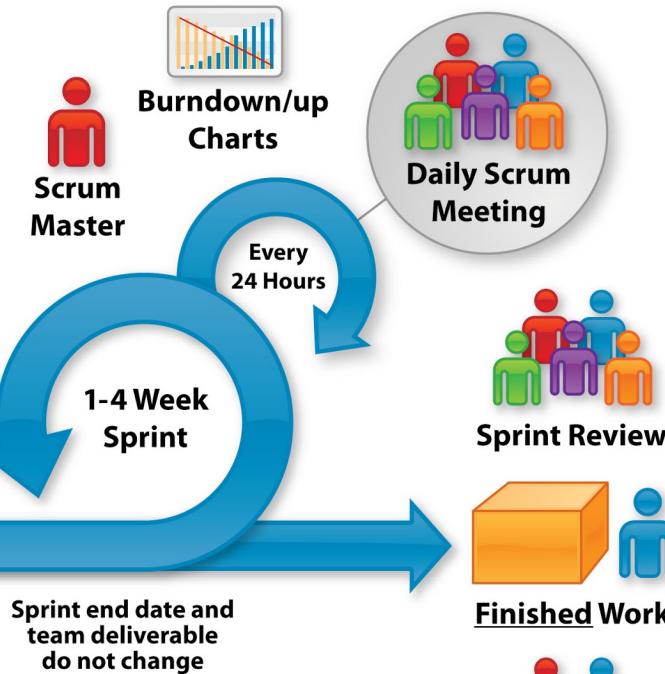


The Team



Team selects starting at top as much as it can commit to deliver by end of Sprint

Sprint Planning Meeting



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FOR ALL

The Product Backlog

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Product Backlog

PRODUCT BACKLOG (example)					
ID	Name	Imp	Est	How to demo	Notes
1	<i>Deposit</i>	30	5	<i>Log in, open deposit page, deposit €10, go to my balance page and check that it has increased by €10.</i>	<i>Need a UML sequence diagram. No need to worry about encryption for now.</i>
2	<i>See your own transaction history</i>	10	8	<i>Log in, click on “transactions”. Do a deposit. Go back to transactions, check that the new deposit shows up.</i>	<i>Use paging to avoid large DB queries. Design similar to view users page.</i>

One Popular Agile Framework: Scrum

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The Agile: Scrum Framework at a glance

Inputs from Executives,
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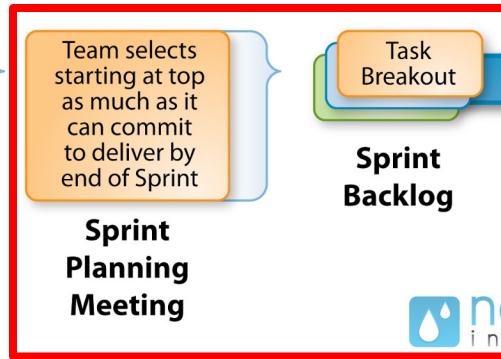
Product Owner



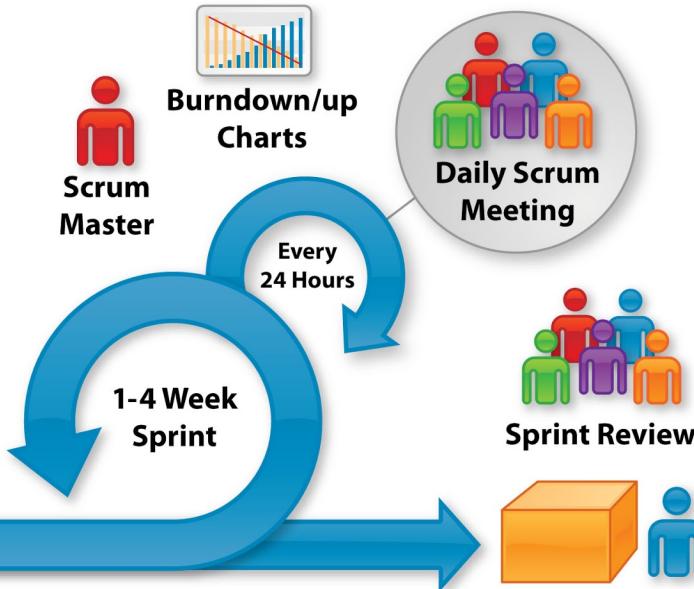
The Team



Product Backlog



Sprint Planning Meeting



Sprint Review



Finished Work



Sprint Retrospective

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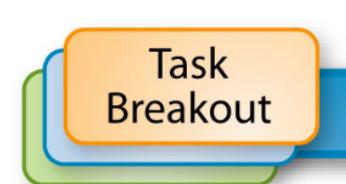
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Sprint Planning Meeting → Sprint Backlog

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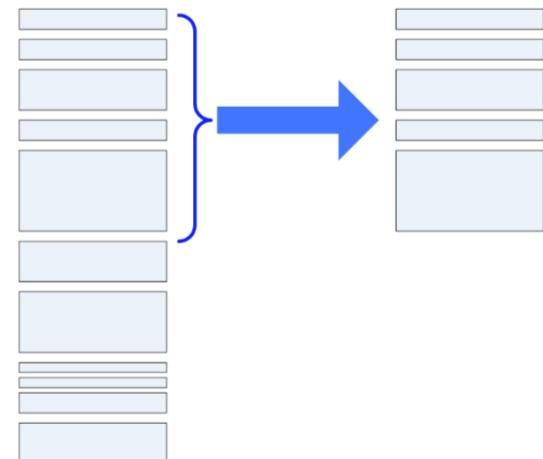
Product Backlog



Sprint Backlog

Product backlog

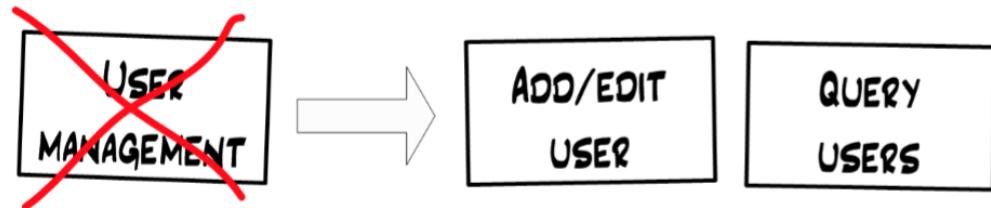
Sprint 1 backlog



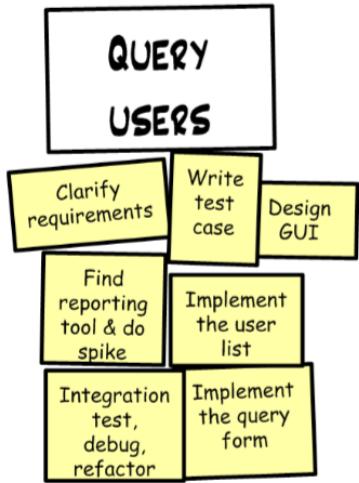
How to estimate ‘story points’ for each story

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Example of breaking down a story into smaller stories:



Example of breaking down a story into tasks:



One Popular Agile Framework: Scrum

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The Agile: Scrum Framework at a glance

Inputs from Executives,
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Product Owner



Product Backlog



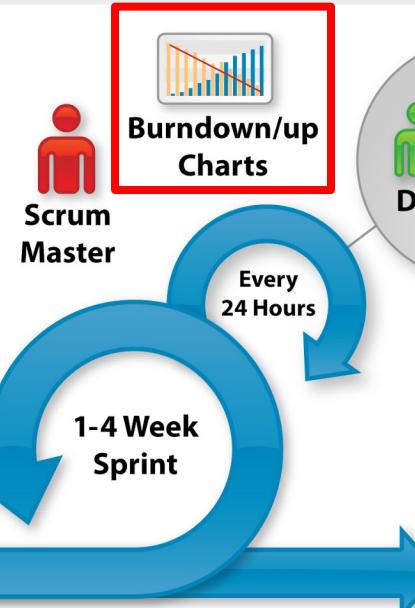
The Team



Sprint Planning Meeting



Sprint Backlog



Daily Scrum Meeting



Sprint Review



Finished Work



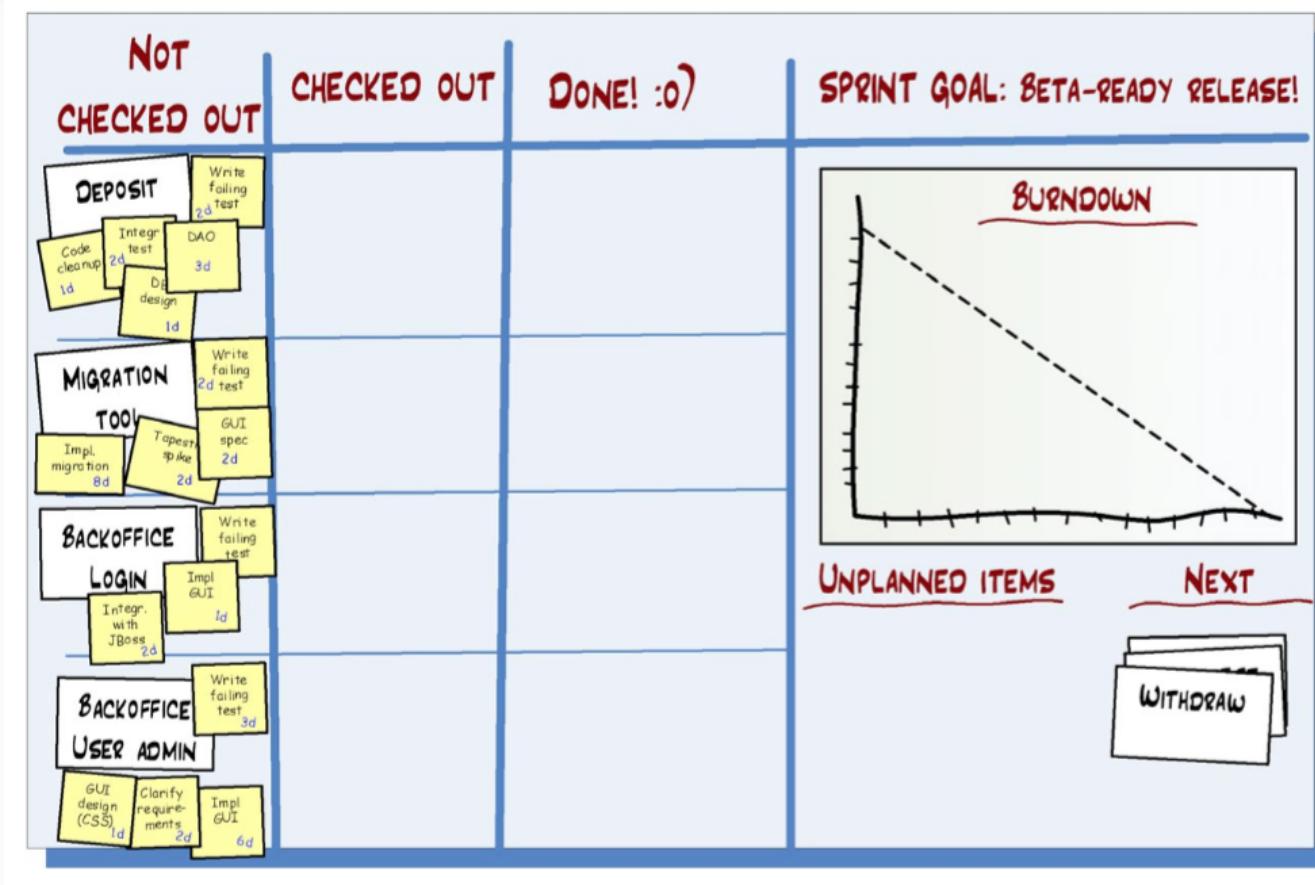
Sprint Retrospective

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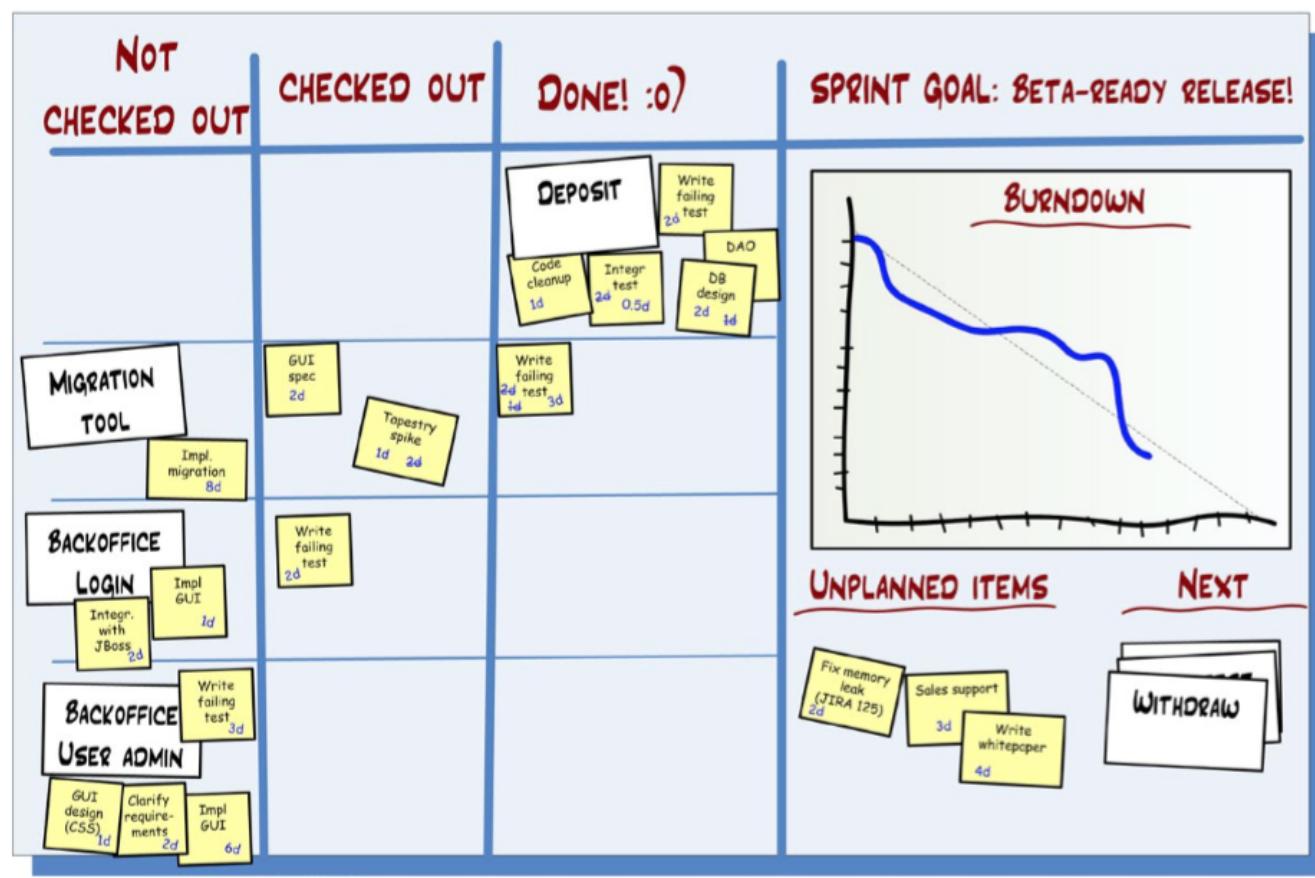
The Sprint Backlog + The Burndown Chart (aka, the Scrum Board)

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The Sprint Backlog + The Burndown Chart (aka, the Scrum Board)

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One Popular Agile Framework: Scrum

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The Agile: Scrum Framework at a glance

Inputs from Executives,
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Product Owner



The Team



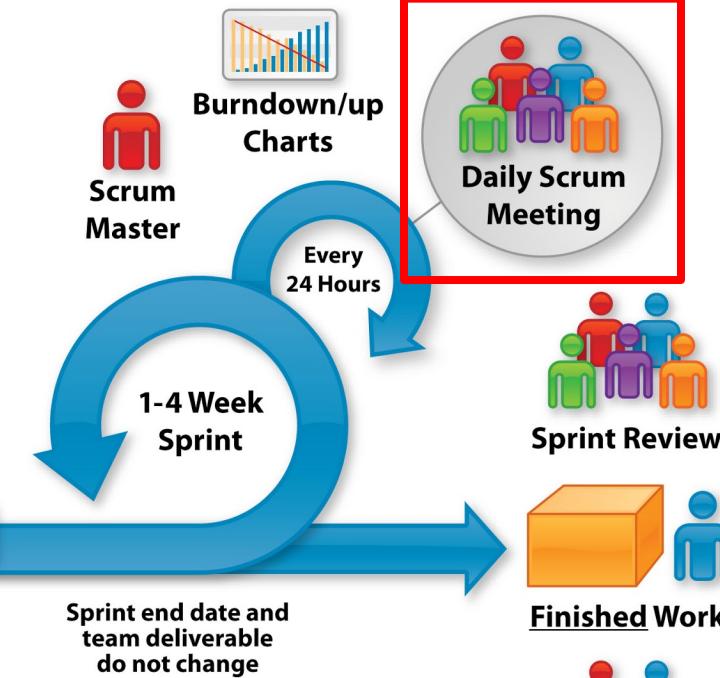
Product Backlog

Team selects starting at top as much as it can commit to deliver by end of Sprint

Sprint Planning Meeting



Sprint Backlog



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The daily scrum: A brief stand-up meeting where you state your progress to the team.

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Answer:

“What did I do yesterday that helped our team meet the sprint goal?”

“What will I do today to help our team meet the sprint goal?”

“Do I see any impediments that prevent me or our team from meeting the sprint goal?”

One Popular Agile Framework: Scrum

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The Agile: Scrum Framework at a glance

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Product Owner



The Team



Product Backlog

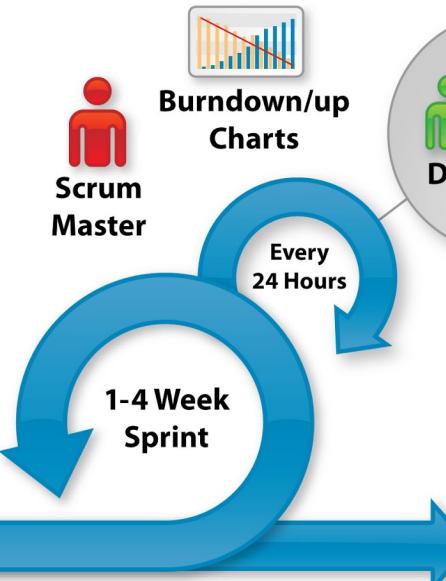
Team selects starting at top as much as it can commit to deliver by end of Sprint

Sprint Planning Meeting

Task Breakout

Sprint Backlog

1-4 Week Sprint



Sprint end date and team deliverable do not change



Daily Scrum Meeting



Sprint Review



Finished Work



Sprint Retrospective

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Why?

Other people learn what your team is doing.



The demo attracts vital feedback from stakeholders.

Demos are (or should be) social events where teams interact.

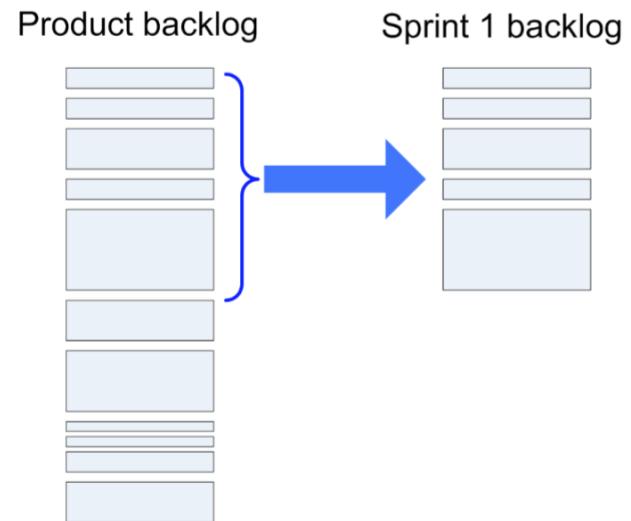
In your case, the demo is the **Capstone Showcase**

Doing a demo forces the team to actually finish stuff and release it (even if it is only to a test environment). “Without demos, we kept getting huge piles of 99%-finished stuff.”

The parts of scrum we'll simulate in your capstone project:

The sprint planning meeting:

1. You create the *product backlog* (i.e. a comprehensive list of stories for your project -- dream big here!).
2. An instructor plays the role of ‘product owner’ and prioritizes your *product backlog*.
3. You and an instructor play planning poker to create your *sprint backlog*. Along the way you create several tasks for each story in your *sprint backlog*.



Sprint Planning Meeting

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Tomorrow will be your sprint planning meeting. These will be held at the normal scrum times.

By your meeting slot tomorrow, you should be ready with:

- Github repository for your project. You should have a working title and a README
- Updated proposal and status on where you stand (i.e., do you have the data? What is your MVP and overall project plan?)
- List of tasks to complete, both priority (MVP) and optional (extras) and approximate time estimates on those. You should have these broken down into granularity of ~ 1-2 days

Scrum Groups

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- You will be put into scrum groups with students doing similar projects
- One of the instructors will be your scrum master
- Scrum groups will meet at the same time each day. You are required to be physically present for these meetings unless you clear it otherwise with an instructor. If you are absent from your scrum meeting it will count as a full day absence.
- Separate slack channels will be created for each scrum group, and most project-related communication will go through those channels

The parts of scrum we'll simulate in your capstone project: galvanize

The daily scrum standup meetings:

1. You will be assigned to a scrum group of 3-6 students + 1 instructor.
2. You will hold scrum standup meetings every morning at the same time
3. You will update your “scrum board” and inform your scrum group of your progress yesterday + your plan for today + any obstacles you foresee.
4. You should keep it brief and relevant. **This is not the place for minutia and rabbit holes.**



Scrum Groups

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Unsupervised (punny name TBD)

scrum leader: Taryn

slack channel: TBD

Meet at **9:15 AM** daily

Ken, Jordan, Jake, Earl

Nothing but Nets + supervised (punny name needs work)

scrum leader: Taryn

slack channel: supermodelers

Meet at **10:15 or 10:30 AM** daily

Jeff, Mark, Max, Andrew, Howard

- Understand the waterfall methodology employed in manufacturing, and discuss the problems with translating this to software (motivate agile)

- Introduce agile methodology and scrum

- Overview of scrum framework

- Outline what your next few weeks will look like

Acknowledgements

Many of the photos and text in this deck are from:

Scrum and XP from the Trenches

by Henrik Kniberg

Btw: the PDF version is free; a hard copy is \$25.
(It's a great read if you plan to work in a Scrum dev shop.)

