

# Velocity – Tracking Productivity

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# Outline

- 1 Review for Last Class
- 2 Plan and Requirements: Productivity
- 3 Velocity
- 4 Burndown Charts
- 5 Tools
- 6 Summary and Questions
- 7 References

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# Topics in Last Class

1. Overview of requirement engineering
2. Agile vs. traditional (plan & document)
3. An agile approach of requirement analysis
  - ▶ Behavior-Driven Development (BDD)
  - ▶ UI sketches and storyboards

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# Productivity of Agile Teams

- ▶ We want to avoid head-heavy planning in Agile. Can we estimate effort/time without a plan?
- ▶ Can User Stories be used to measure progress on project?
- ▶ What should a tool do to help measure progress for Agile?

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# Measuring Productivity

- ▶ A measure of team productivity using user stories – calculate average number of stories completed per week?
- ▶ However, some user stories are much harder than the others
  - ▶ Rate each user story in advance on a simple integer scale (points)
  - ▶ Velocity:  
average number of points / week

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Points	Difficulty
1	straightforward stories
2	medium stories
3	complex or difficult stories

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## About Velocity ...

- ▶ Can't compare velocity across teams
- ▶ Does not matter if velocity is 5 or 10 points per iteration
- ▶ What matters is to aim for it to be team consistent, and to improve self-evaluation and suggest number of iterations for feature set

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# User Story Burndown Charts

Use a burndown chart to watch out for Anti-patterns like:

- ▶ The team finishes early user story after user story because they aren't committing to enough work.
- ▶ The team misses their forecast user story after user story because they're committing to too much work.
- ▶ The burndown line makes steep drops rather than a more gradual burndown because the work hasn't been broken down into granular pieces.

Reference:

<https://www.atlassian.com/agile/project-management/metrics>

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# Agile Project Tracking Tools

Features of typical Agile project tracking software

- ▶ Prioritize user stories by where place them in Current, Backlog, Icebox panels – When completed, move to Done panel
- ▶ Developers push Finish, send to Product Owner – Owner tries story and then Accepts or Rejects
- ▶ Can add logical Release points, so can figure out when a Release will really happen
- ▶ Remaining points/Velocity

## Example Tools

- ▶ Atlassian JIRA
- ▶ CA Agile Central
- ▶ Pivotal Tracker
- ▶ Trello
- ▶ Github Issues

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# Summary

## Agile project tracking

- ▶ Velocity
- ▶ Burndown chart
- ▶ Tools



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“Engineering Software as a Service” by Armando Fox and David Patterson  
(2nd Edition)

“Essentials of Software Engineering” by Frank Tsui, Orlando Karam, and  
Barbara Bernal(4th Edition) (Section 7.3.5)