**CSE 6324 – Advanced Topics in Software Engineering**

**Agile Methodologies – Spring 2016**

Source: <https://www.atlassian.com/agile/delivery-vehicles/>

* In an agile framework, user **stories** are the smallest units of work. The goal of a user story is to deliver a particular value back to the customer.
* In [scrum](https://www.atlassian.com/agile/scrum), teams forecast to complete a set of user stories during a fixed time period, known as a **sprint**. Generally speaking, sprints are one, two, or four weeks long. It's up to the team to determine the length of a sprint–we recommend starting with two weeks.
* Once a team forecasts a set of user stories for the sprint, and the sprint is started, the [scrum master](https://www.atlassian.com/agile/scrum) is in charge of fending off changes to the user stories. This keeps the team focused and combats "scope creep" (when a team adds work to the sprint after the sprint starts). Adding work mid-sprint compromises the team's ability to forecast and estimate accurately.
* At the end of each sprint, the team is required to deliver a working piece of software. In scrum, that's called a **potentially shippable increment (PSI).** The product owner ultimately decides when the PSI gets [released](https://www.atlassian.com/agile/release) to customers, but the work should be complete enough to be suitable for release at the end of the sprint.
* **Epics** are significantly larger bodies of work. Epics are feature-level work that encompasses many user stories.
* A great tool for any scrum team are **burndown charts**. They clearly track progress throughout the sprint with "work remaining" on the Y axis, and "time" on the X axis. Burndown charts are a powerful motivator for the team, and they keep everyone focused during a sprint. Above all, these charts provide supporting data in discussions about the progress of a sprint.
* Stand-up meetings are an integral part of the Scrum process and is a key discipline of Scrum, when they are done properly. This meeting is a coordinating mechanism of a self-organizing team where each member states:
	+ What have they finished
	+ What are they working on
	+ What external issues do they need help on
* **Backlog**: is the list of all stories left to do
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* **Scrum planning:**
	+ Project Initiation (define sprints, and which stories in each sprint)
	+ Complete the following for each sprint
		- Sprint Planning
		- Daily Scrum
		- Print Retrospective
		- Demo
		- Release

