

# Senior Capstone Design: Weekly Sprint Reflection

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**Context:** In-capstone design groups; Senior Capstone Design

**Keywords:** scrum methodology, design projects, project management, agile development

**Student Activity Time:** Variable for each group

*In a senior capstone design course, students individually wrote a reflection on their weekly sprint, and then in groups discussed these reflections and project progress in their weekly planning meetings.*

## Introducing the Reflection Activity

Using an agile methodology, computer science and engineering seniors engaged in a group industry-based capstone project. As part of an agile methodology, Scrum, the students reflected weekly at the end of design sprints. The purpose of these reflections was for students to think about what went well and how they could improve in the next sprint.

At the beginning of the senior capstone course, the educator introduced the methodology to students. In this introduction, the educator informed the students about the reflection component at the end of the weekly sprint. Before their weekly team meeting with the educator, students were required to individually write a reflection and submit it to the project-tracking site. The format of the written reflection was not standardized. Then at the start of each weekly meeting, each student gave a quick update—features they had completed the previous week, features they were planning on implementing that week, and roadblocks (project challenges, interpersonal issues, etc.) they had encountered. The team brainstormed ways to improve during this reflection. This information helped drive the weekly team meetings and planning for the next scrum. The educator participated in each group's weekly team meeting as a way to support the groups and to keep track of progress.

In terms of outcomes, students should learn and implement an agile project management methodology in their projects. Reflection at the end of each sprint was a critical component of agile practices. There was potential for students to become better at estimating time needed to implement features, working with their peers, and understanding their role on a team. Overall, students were challenged to demonstrate their readiness for industry and improve their professionalism.

### Recreating the Reflection Activity

	Description
1	Introduce students to the idea of reflection in the agile methodology.
2	Require students to engage in this reflection every sprint (~once/week).
3	Listen-in on each group's planning meetings in which the reflections help guide them on the next sprint.

### In the Words of the Educator: Tips and Inspiration

*Start small.* When starting potentially large projects with students, it is important to start small. Work with companies who you trust, who understand that the project is about student learning. This capstone is not necessarily about the company getting something. As much as possible, try to work with alumni on these projects, they understand, they have been through it, they have been out for a little while, and they are willing to help.

*Make the capstone project an authentic experience.* Otherwise students will feel like the capstone project is small, busy work, and not meaningful.

*What was the inspiration for the reflection activity?* Students are taught a lot of content in a stressful 10-week quarter, but when do they have an opportunity to purposefully stop and think about their learning? I believe so much of the meaningful learning happens in these reflection moments.