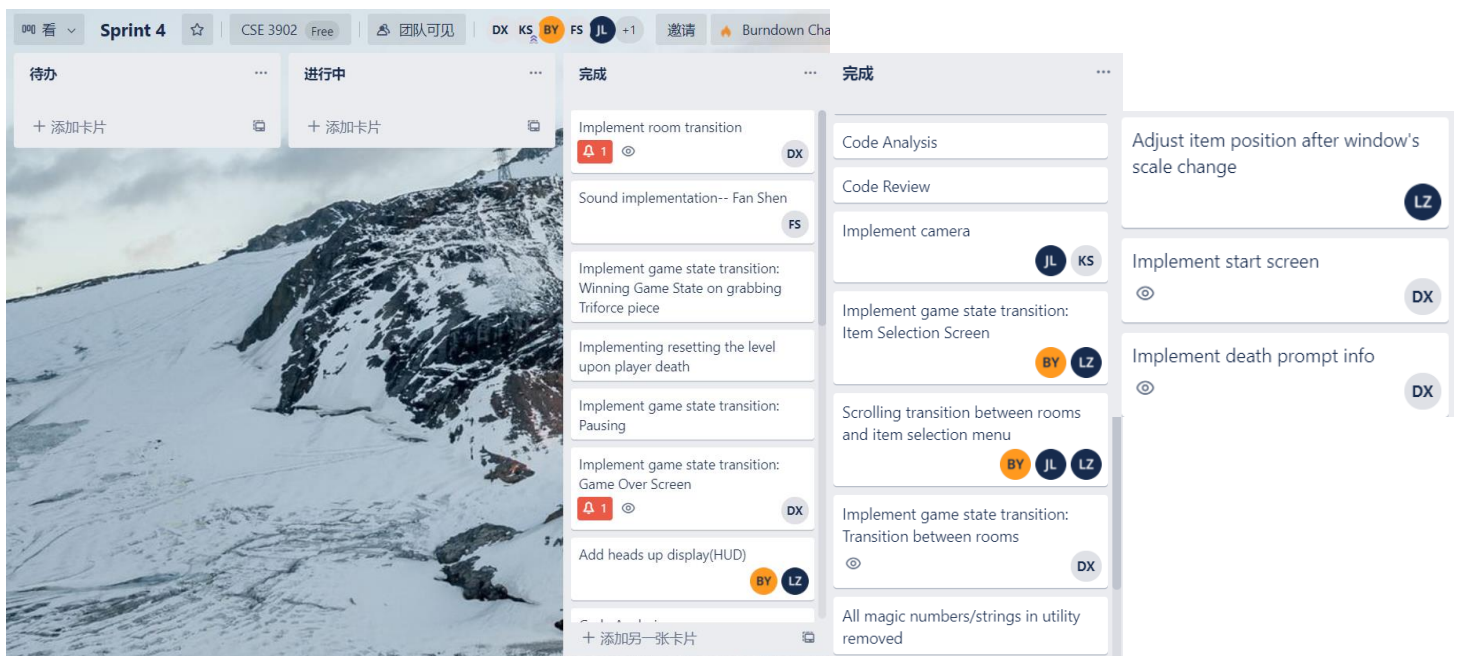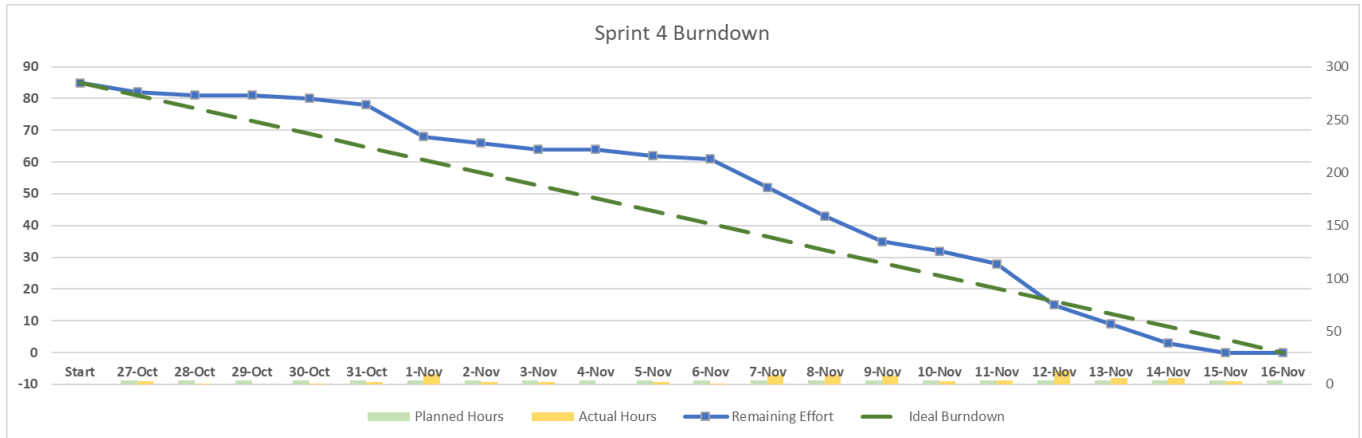# Sprint 4 Reflection

Team members: Patrick Cheng, Zhihan Li, Jason Lian, Fan Shen, Dantong Xue, and Baihua Yang (names listed in alphabetical order of the last names)

Reflection summarized by Dantong Xue

Above is the burndown chart as well as the Kanban plan board for Sprint 4.

In Sprint 4, we extended the structure that we already established in Sprint 3. It went smoothly as we planned ahead with clear dividing of work. The most challenging part for this Sprint was not writing functional codes but debugged the codes afterwards. Since the structure has been pretty big and different components all connected to each other, it was more difficult to debug compared to the previous sprints. Our collaboration with effective communication boosted the debug process quite a lot. I would like to thank all teammates for their help solving problems together when we had trouble.

After Sprint4, our game is supposed to have all elements that a regular game does. Compared to previous sprints, we fixed a lot of bugs and added some more new features to enrich our game, such as sound, HUD, pause and start screen, etc.

During the process of extending the system, Baihua said that he recognized the importance of maintaining high cohesion and low coupling in code development and realized parts of his previous code was kind of abundant and not easy enough to maintain. In this sprint, he cooperated with Zhihan on implementing the HUD section. Sometimes weird bugs came out, but they were all eventually fixed. Overall, he thinks we have done a good job.

Zhihan felt that it is important to follow the "High cohesion" and "Loose Coupling" rule when coding. Since HUD and item selection parts have a high degree of interdependence with other parts of the project, it is required to make each class to accomplish specific goals. At the same time, reducing unnecessary connection between two classes is important so it is easy to maintain and change certain part while coding. In this sprint, Zhihan's code on item selection not good enough on high cohesion, some classes can be separate to more classes to make each class short and easy to read. Moreover, Zhihan believes Baihua do very well on decrease coupling and increase cohesion. His code is concise and clear enough and inspired me a lot.

Fan took charge in the implementation of sound effects. This Sprint posed the challenge for him to create the entire audio section and implementation himself since he decided to take up the task as a challenge when we were splitting task. The Audio implementation also required a ton of tie-in between collision and item handling which initially he had difficulty implementing since most are written in previous sprints by other teammates. However, our communication and collaboration were stronger and more efficient than ever, so we were able to implement most if not all the sound effects without much problem. He would like to thank all the teammates for helping him out on creating a big segment for the first time by himself and all in all it was a great sprint.

Patrick focused mainly on implementing the winning state this time. Specifically, this task involved making Link get the triforce and hold it when he got it. Change in color and audio were though the help of other teammate's implementation of the other classes. The team worked hard, trying to make everything look good. The team communicated thoroughly and help each other out to make the game work. Now that sprint 4 is completed, the team will head on and do more for the next one coming up.

Jason was responsible for the implementation of camera movement. He also fixed the respawn location of enemies and other bugs related with enemies in the game. He made sure that all the

enemies and npcs in the game can be generated in the correct room and the correct coordinates. He had finally implemented the ai for Wallmasters, but I think it is kind of different from the ai in the original game. He realized the importance of comments and communication in the process of fixing the positions of enemies, because he misunderstood the meaning of StartPos variable at the very beginning. He thinks giving explicit variable names and provide necessary demonstration comments is really important, especially when working with other people.

Overall, with efficient collaboration and communication, we managed to finish Sprint 4 in its entirety. We will try harder in the last sprint without doubt.