Sprint 2 Retrospective

CS 307 Group 16 Fathomless Caverns of Peril | Kyle Day, Jason Seeley, Stefan Gerber, Yuchuan Huang

What went well? (0.5 point) (a)

You may write this section in sentences and/or list successful user stories and tasks with detailed discussions.

1. As a user I would like the ability to be able to view or examine terrain and enemy stats on mouse click.
    a. This was simply a matter of interpreting the JSON data sent from the AJAX requests. Since each request's response is a proper subset of the map with all object data it can be listed completely and parsed according to its attributes. There was only a mild issue when allowing mobile users to click and hold, but the proper event listener was added afterwards fixing the problem.
2. As a user, I would like there to be a home screen with the title of the game and start game button.
    a. The initial landing page which was used during Sprint 1 was hastily made in about 10 minutes and it had some unknown sizing issues. The homepage was then refactored to meet the requirements of Sprint 2 and now is properly displayed for all screen sizes.
3. As a user I would like the ability to log into my profile and save my game states.
    a. Similarly with user story two there was a simple bug from the previous sprint's log in implementation for converting guest user accounts to user accounts where only the first row of the data table would be read. This was fixed and all of the database queries were prepared as well.
4. As a user, I want a music track to play for each level. As a user, I want the ability to change the volume settings of music and sound effects in the pause menu.
    a. The main challenge for this task was configuring the volume sliders to interface with the settings drawer. After that all that was required was to create logic to interpret the slider input.
5. As a user, I would like a pause game button, which brings me to the settings screen.
    a. Creating the pause game button was trivially easy. The main bulk of this user story was allowing for the customization of user input buttons. This was also not a difficult task although it requires access to browser local storage for persistent data storage.
6. As a user, I would like there to be an end screen, for when a player dies and doesn't beat the game, also for when the player beats the game.
    a. A new message protocol needed to be created rather than the previous method which only passed a string with each AJAX request. The information of each turn needed to be passed through to the client to properly display all actions performed within the turn. One of these actions is interpreting a game over condition which will display the correct end of game modals.
7. As a user, I want to complete a level by finding the staircase(s) to the next level. Defeating all mobs or collecting all items is not necessary.

    a. Single staircase was implemented last sprint, so this time multiple staircase functionality was added for each level. There can be 1 to 3 staircases that spawn with each new level generated. All of the staircases contain critical information about the level number and difficulty.
8. As a user, I want the procedurally generated level maps to make sense and be completable/traversable. The staircase to the next level is accessible because it's on a traversable path.
    a. Each level is generated using multiple different terrain spawning component functions, like fill rectangle, place singular object, place line of objects. This ensures that the level map strikes a balance between logic, like fire spawning in a filled area or spikes in lines, and randomness (every level is unique). Also a path carving algorithm is used to clear terrain in a randomized manner, connecting one side of the map to the other. Then the staircase is placed on this path. This ensures the staircase to the next level is always accessible.
9. As a user, I would like there to be the same bosses, some of which are optional depending on path selected, across each new game playthrough.
    a. 42 new creatures including bosses were added to the game. Each level has a list of creatures and potential bosses that are spawned based on a specific weight, this took a long time to implement because there are so many new creatures. Since each level has an explicit list of all bosses and creatures that can spawn in it, each new playthrough of the game will produce the same bosses on each corresponding level.
10. As a user, I would like mobs to attack me through melee attacks/shooting/spells.
    a. This task is much easier to implement than expected because we already have a weapon system, we only need to check the creature's weapon and attack range before it attacks to achieve this story
11. As a user, I would like to start out with maximum health and have the game end when I run out of health.
    a. I implemented an attack-dealing function that processes the attack instructions, updates the target’s hp, and checks if the target is dead.
12. As a user, I would like the mob to die and be removed from the map when they run out of health
    a. This story was simple to implement, the creature can directly use the function I mentioned in user story 11.
13. As a user, I would like to have statistics including: health, attack, defense, level according to experience points, and special abilities that boost or diminish user related movement, speed, attack range, and enemy tracking.
    a. This sprint all I had left to finish from this story was to create the active ability and the experience point system. Both required a lot of structural code to be created but luckily not much refactoring.
14. As a user, I would like a mob to die and leave a corpse behind when it runs out of health.
    a. This was accomplished by creating a corpse decor and creating a new one whenever a creature’s die() method was called
15. As a user, I would like the ability to pick up and use different items, including: potions which increase certain statistics temporarily and armor/gear that I can wear/use.

a. I already had the systems to support this, but I hadn't created any of the actual items, so this sprint I created items to fulfill this criteria.

2 What did not go well? (0.5 point)

(a) Include general retrospective review for this sprint.

This sprint was again found to be a success. All of the user stories were accomplished. The yield of our work is beginning to look both visually and functionally as an engaging gaming experience. The overall sprint was conducted in an efficient manner as we were preempting potential calamities that might occur with deadlines and documentation.

(b) Ensure to list ALL unsuccessful user stories and tasks with detailed discussions. (They should be in line with the Sprint Planning Document for the next sprint.)

All user stories were accomplished. The only thing that could be improved for the following sprint is the layouts of the menus in addition to better displaying equipment and equipment modifications. This will be a large part of Sprint 3 and will fall under the animated sprites and textures user story.

3 How should you improve? (1.0 point)

(a) Mention at least two ways to improve your work in the next sprint and be as detailed as you can.

For this final sprint we must work carefully to ensure that the selected user stories will be fully scoped within the range of the roughly 17 days allotted to the sprint prior to the review. Many tasks for the previous two sprints have been either wildly under or over-scoped. This could potentially be attributed due to the lack of attention focused on the sprint planning document or even within the initial backlog. For both of these documents we did not have a firm grasp of what work would actually need to be accomplished to complete certain tasks. This will be remedied within the final sprint as now all of the goals that we had previously outlined are almost completed. The basic structure of everything is in place and now additional content needs to be built out of it.

Another way to improve the workflow of the next sprint will be to think about test cases early. We had created a self imposed goal to finish all of the work for the user stories relatively early within the sprint as to leave a sufficient amount of time for working on test cases. This was done although the true magnitude of creating automatic tests on an appropriate scale was harshly

underestimated. For the final sprint test cases should be built or written alongside the actual development of the user stories so there is no final scramble near the end to create all of the resources needed for proper testing.