Individual Milestone Report

Milestones 2

Your Name: 민서현
Team Name: Sang Rin
Game Name: MANZO
Milestone: 2
Score: _____/ 63pts

1) Give a 2~5 sentence summary of what you have done for your team since the last milestone. (5 pts)

I corrected errors throughout the entire file and added necessary components where needed. I created UI components and a UI manager, which allows elements like mouse and fuel indicators to be drawn at the topmost layer, ensuring efficient management of the UI. I also fixed the bug with the ship's movement and worked on making sure it properly reflects at the correct angle when hitting rocks, although there are still some bugs left to fix. I helped with writing `boss.cpp` and modified the bit system by adding a getter function to retrieve the bit information needed during boss battles.

2) Which roles have you had in your team during this milestone? (1 pt)

producer

3) For each discipline, describe in 5~8 sentences what you have done since last milestone for your team: (10 pts)

Debugging

- It seems I kept examining the collision, impact, and reflection logic because they were behaving strangely. I verified through cout whether the correct line segments were being retrieved, and I repeatedly tested ramming the ship into rocks to determine when it ignored reflections and passed through the rocks. When it hit an edge, sometimes an incorrect segment was retrieved, so I implemented logic to check if it was an edge and then return a segment that represents the midpoint slope between the two connected segments at that vertex. Additionally, there was a crash that occurred when switching modes, and I worked with Wonie to find and fix the cause.

Testing

- When team members pushed to GitHub, I tested everything and notified them if there were any errors. Besides that, I conducted a lot of tests for my collision system. When colliding at high speed, the ship still keeps passing through walls, and despite Rudi providing many ideas, my formula isn't working as expected. I tried colliding with the wall multiple times, clicking the mouse, and attempting different movements. I also merged

the team members' work into a single branch and checked for any errors. If there were simple errors, I fixed them myself, but if the problem was more fundamental, I handed it back to the original developer

Optimization

- I aimed to increase type safety by adding const or passing values by pointer to functions that lacked const or were simply passing values. Additionally, where resource management was needed, I created managers to ensure resources were managed without leaks, using constructs like shared_ptr. The various load and clear functions in the managers seem to be helping to prevent memory issues. Encapsulation is really quite fun.

Artwork

- I just did some slight color correction on the image files provided by our team's art lead. Aside from that, I worked on creating mouse effects and made changes so that the UI can be rendered in linear mode instead of pixel-based mode by creating a struct in drawsetting.h to manage various draw modes. Now, if we want to draw a special object in a specific direction, we can do that.

Research

- This time, we are in the phase of developing according to a predetermined direction, so there wasn't much additional research needed.

Music, SFX

- I created some temporary background music. Since the player needs to click and move in sync with a 4/4 beat, I focused on making the drum beat, which expresses the rhythm, stand out clearly. The music isn't in the full development stage yet, so we didn't put much effort on it.

Level Design

- The fuel amount was initially set to 500, but it seemed to run out too quickly, leading to game over too soon, so I increased it to 1000. I also kept considering the ship's speed and finally decided to set it to 6000.

Physics

- When the ship collides with a rock, it calculates the angle of incidence and reflection, then bounces back based on the reflection angle. It works well on flat surfaces, but if the player is moving too fast or hits a corner or an overlapping collision area, the ship bounces in unexpected directions, which is problematic. For Milestone 3, I plan to create a `physics_update(dt)` function to allow more precise physics calculations. I've already created some overloaded mathematical formulas for that purpose.

Tool Development

- "I have a UI manager that adds and removes UIs to manage them effectively. I've also enhanced the rendering system. The `drawsetting` struct now stores various draw settings, allowing for more powerful use of OpenGL. Additionally, I removed unnecessary functions from the rendering module.

4) For each of the above, give a breakdown of how much time, in hours, you spent per week (on average). (5 pts)

Debugging : 20
Testing: 7
Optimization: 1
Tool Development: 7

5) Please describe the 2~3 biggest issues you had during this milestone in 3~5 sentences, each. In 3~5 sentences, please describe how you've solved those issues if you've solved them. (10 pts)

I think I now understand why being good at math is important for being a programmer. I'm about to go crazy because I'm struggling with math. I have no idea how to properly manage collision. I calculated the ratio of the collision point, but the return value ended up being -1.0. I haven't fixed this yet.

When I was creating the mouse cursor, it was drawn half the screen width to the right of the desired position. I'm still really confused about the matrix transformation between screen and camera coordinates. For now, I just subtracted the screen width to get the mouse drawn in the right place, but I'm not sure if this is the correct solution

6) What were your 2~3 biggest accomplishments you've had during this milestone with 3~5 sentences for each. (10 pts)

I felt quite proud when I finally managed to draw the UI as I wanted. I remember working on a health bar back at the 150 milestone, and it felt incredibly difficult at that time. Now, with OpenGL, I can easily create it using shaders, which makes it both enjoyable and simple.

I also feel proud of modifying the renderer and creating the `draw setting` struct, which was something I wanted to do for a while. Since the renderer is a separate module, I used to struggle with how to apply specific draw settings when drawing an object. Now, by allowing settings to be passed separately, it has given me much more flexibility, and, most importantly, the rendered images look much better.

7) How did this milestone go? In general, I want to know how you're feeling about the progress of your team. Do you think your team is moving in the right direction? (5 pts)

To be honest, progress was a bit less than what I had hoped for. I thought it would be enough, but given the scope of our game, it feels like there's still some lacking areas. Still, I think we've added enough features, and if we can just fix the errors, it should be alright. I got stuck working on the collision system, which kept me from doing as much as I would have liked, and that's a bit disappointing. There was also a week when there were too many assignments, which really slowed down our progress. But even so, I think we've made significant progress overall. I believe I can catch up during the vacation with some dedicated effort.

8) What could your team do to be better during the next milestone? Please go into great detail about this. (10 pts)

The team as a whole got stuck on a difficult task for quite a while... Honestly, I'm not really sure how to handle situations like this. It's even more challenging since it's not something where we can easily help each other. Still, having experienced this during Milestone 2, I hope it will be less of an issue in Milestone 3. I also think that if we feel stuck for too long, it might be better to set it aside temporarily and work on something else. I've learned that simply thinking harder doesn't always lead to a solution. Since Milestone 3 will be our last chance to showcase our work this semester, I'm planning to make our schedule a bit tighter. To be honest, there were a lot of days off during this milestone.

9) On a scale of 1~10, how vital are you to your team's project? Do you think that you're a major contributor to the team? (1 pts)

I've been doing everything—distributing tasks, checking in on my teammates, testing, fixing errors, merging all the scattered branches into one, developing features, working on assets, and even creating music. Without me, the team wouldn't function. Seokhwa might be able to give the team some momentum, but you still need someone to pull and someone to push. Without me, it would all fall apart.

10) Did anyone on your team do something exceptional or very helpful that you'd like to brag about? Please let me know! (0 pts)

Seokhwa definitely has a lot of passion for the game, and that enthusiasm provides great motivation for the team.

11) On a scale of 1~10, how fun do you think your team's game is? (It's okay if you don't think it's fun!) (1 pt, regardless of rating.)

Right now, I think it's more of an interesting game than a fun one. It's like, 'Oh, there's this, there's a boss, the boss moves, you can even go home, and oh, there are skills too.' I feel like it's more about discovering surprising elements rather than being a fully engaging experience. We've been focusing more on feature development than completing it as a game. I'd give it a 5 out of 10.

12) How do you feel about the direction of your project? Do you feel fulfilled? Bored? Stressed? Please let me know! (5 pts)

Other than the fact that I'm not great at math, I'm pretty satisfied. I'm happy that everyone enjoyed the playtest. If we keep moving forward like this, I think we'll be fine.