

Implementation

Stakeholders: Richard Paige, University of York Communications Office

Team: Barney Morgan, Cameron Smith, Harry Berge, Jake Phillips, Matthew Wilkie, Rob Weddell

Repository Link: <https://github.com/SEPR4/APirateGame>

NB: Development commits on "dev" branch. Submission content on "master".

Going into assessment 2, it was required to design and implement the core mechanics of the game. This involved: the world map containing three colleges and two departments, movement mechanics, and combat mechanics for the player and AI, and the points system. Not all features were able to be fully implemented due to a mixture of time constraints (risk 16) and the team not wanting to be overly ambitious (risk 2, risk 4). However, it was ensured that all features at least had the framework to allow for ease of later implementation.

Firstly, it was required to implement the world map (req 2.1). This was designed within the application, Tiled [1], using a set of open source tiles found online [2]. The map was designed with the movement and combat mechanics in mind, allowing plenty of space for ship-to-ship combat. Following the requirements, a rather abstract version of the university campus was created. It was decided that a more comprehensive and accurate map could be created after the addition of the questing system. Thus, for now, the map merely acts as a proof of concept and a canvas to represent the combat and movement mechanics on.

Furthermore, within the completed game, the updated requirements [3] state that areas of the map should be initially unavailable and locked until progressing through the storyline and conquering colleges (req 2.5). However, given the lack of questing system for this implementation (req 2.12), there was no reason to block off any parts of the map. Rather, the player simply follows a linear progression through the colleges in this stage. In addition to this, a pop-out world map which offers the players an overview of the entire map (req 2.15) is still to be implemented. Instead, a temporary feature was created that allows the player to "zoom out" to get a better overview of their location.

The movement mechanics (req 2.2) specify that the map should be transversable using keyboard keys. We had planned to allow these keys to be configurable, however, due to time constraints we have been unable to implement this feature yet. In addition to this, the ships currently have a physics based movement system dependent on acceleration and momentum (req 2.18). This results in realistic movement and adds an element of skill to control (req 2.6).

The combat mechanics are completed to an acceptable level (req 2.2) yet require the addition of more options. Currently, simple cannon fire is the sole method of combat, and any more complex weapons are omitted. This leaves the framework of the combat system to be built upon in later assessments whilst still providing enough functionality for comprehensive testing at this iteration of the project.

It is intended that both the combat and movement system will be taught through an integrated tutorial (req 2.17). However, in this iteration of the game the tutorial is completely omitted due to the fact that there is currently no questing system and minimal combat mechanics. By not adding a tutorial at this stage, it enables a more comprehensive one to be added later in development which focuses on the finalised game mechanics and ensures that no time is wasted remaking the tutorials (risk 1).

Lastly, a points system has been implemented which rewards gold and XP for defeating enemies. Currently, the only impact of XP is on the level of the player. Each level grants the player a small boost to speed, max health and projectile damage. The gold reward is simply a placeholder for future work, we expect that it will be used as part of a shop/repair system or in the minigame (req 2.13).

References

- [1] Tiled Map Editor Website [Online] Available: <https://www.mapeditor.org/> [Accessed 30 Nov. 2018]
- [2] PiratePack Tileset [Online] Available: <https://kenney.nl/assets/pirate-pack> [Accessed 1 Dec. 2018]
- [3] Element of SEPRise!, Updated Requirements [Online]. Available: <https://sepr4.github.io/web/submission/assessment2/updated/Req2.pdf> [Accessed 1 Jan. 2019]