National Near Earth Object Preparedness Strategy and Action Plan or NNEOPSAAP

Programming Fundamentals 1

Change Summary

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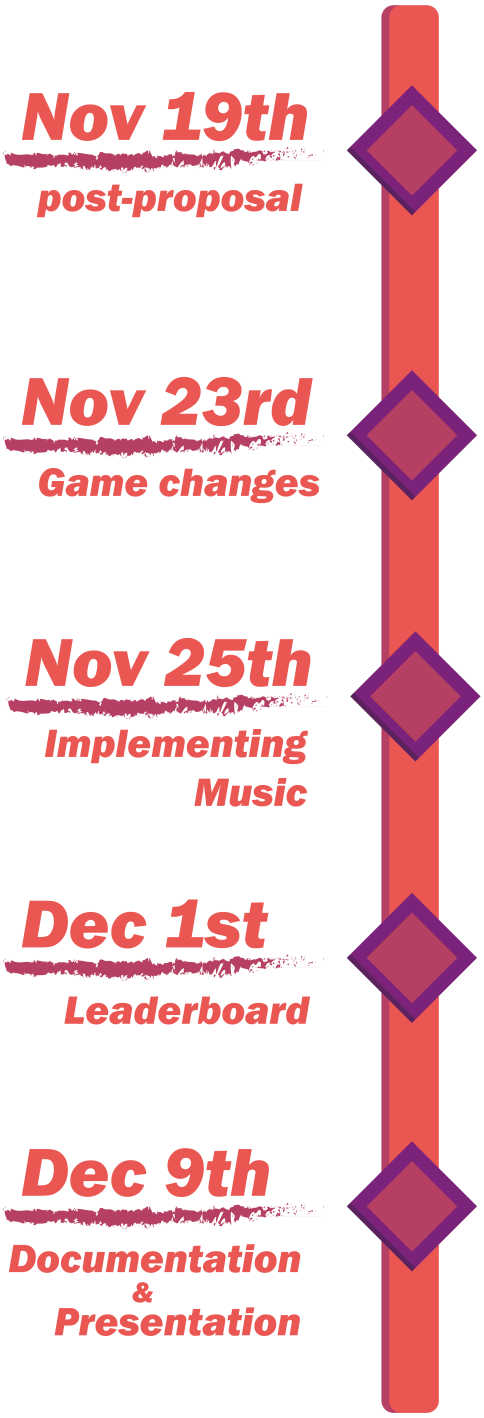
Contents

Timeline visualization of the important changes:



1 Change summary

1.1 Post-Proposal

Our idea was to make First Person View game. In the beginning this sounded interesting but before we started working on it, we realised that none of us would ever want to play this game and so it would be better to change it. Then we had this idea of making an interesting game like Space Invaders. Space Invaders is a game where the player is moving his spaceship horizontally across the bottom of the screen and shooting aliens. We made this change so that the player can move everywhere across the screen and instead of aliens he is shooting asteroids.
As we mentioned in the Project Proposal we still had to use the external libraries like 2htdp/image, 2htdp/universe.

1.2 Game

Coding this game required the uses of classes and as we progressed through development we realised most of the code was redundant, therefore we implemented a super-class called %sprite. This allowed for a more maintainable code. Another change which proved to be beneficial for our project was the rewriting of the collision function where we manage to shrink a very complex 30 line function to a 4 line function which allowed for a more efficient code execution and readability. As the development was going well, considering that the documentation on "https://docs.racket-lang.org/" was very helpful, we were looking for a bigger challenge as we had some time left. The following two sections explain the next two additions to our project.

1.3 Music

We all agreed that with audio in any game we can improve our focus, motivation and productivity, and we found a way to implement sounds in our game. The source for this code is in media.rkt. We added sounds to play when the bullets are fired, sounds for the upgrades, when there is a collision with the asteroids and the bullets, and with the asteroids and the player. We also added sounds to play when every element in the menu is clicked. At first, we wanted to add sound for the background as well, but we put a lot of effort and work to build this game and in the end we didn't have time to implement background music.

1.4 Leaderboard

As we wanted to make the game competitive in its nature we decided to implement a leaderboard. After using our scripting knowledge we decided to make a web page that serves and connects racket to our database. We had a lot of problems with some hosting services but we decided to host it on our server which is running 24/7 in central Lugano.

1.5 Documentation/Presentation

Initially documentation was written locally which made it inconvenient for team members to collaborate on their documentation. With the use of Overleaf service we managed to connect remotely and work together. This allowed for a more standardised documentation writing. The same process was applied when creating the presentation with 4 email addresses working together on Google Slides.

2 Our team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