Principles of Software Engineering and Operating Systems: Software Engineering Project

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1 Overview

The project named above, is a Pokemon Trading Card Game prototype made in C++ and Python. The group was split in smaller sub-groups which included a Game Hub team and 3 AI teams that were also responsible for the implementation of their deck's cards. I was in the Game Hub team.

2 Personal contribution

I was responsible for creating the initial system design (in full cooperation with others), documenting headers (45/45 with Eric), error checking (Partially. Spotted some very important ones like passing wrong value at the end of the function call chain which was causing the game to crash, as it was trying to access non-existent objects. Which was always happening only when card count in hand pile exceeded slot count).

Additionally, my responsibilities included setting up Game Hub project file to reflect the workflow and implementing GUI module and ASCII printer. Although my initial version of ASCII printer was not included in the final game, most of the ideas were taken from there. Final version of ASCII printer was done 40% by Jack, 60% by me, reflecting the changes in the way that the module was used. All the ASCII art was done by me. And I was making sure all information is replaced correctly in the generated card strings. The guide section about ASCII Printer was also written by me.

At some point I was trying to encourage AI teams to communicate to us what functions they require, by creating a general table of functions that was available to all teams at once. That was the last attempt from our team after many previous mostly failed attempts.

The idea of command usage instead of prompts and requests from game to human player was picked up by me and implemented. Although later modified by Jack, initial system remained the same, it was expanded by Jack to include card inspection.

I was also responsible for creating the basic AI code with all the randomization. It was later modified as well due to the changes in the way things were communicated internally by the game.

Lastly, during the first part of the code implementation, I was responsible for making sure we followed the UML design and documenting all of this information. This was then communicated to the rest of the team and we fixed any conflicts that occurred.

3 Peers assessment

My sub-group was responsible for the creation of the main game engine - the Game Hub. We also implemented a basic random-based AI and an ASCII terminal-based GUI. Although initially we had 4 people in the group, one person, Owlwine, who was initially responsible for OpenGL GUI, did not contribute at all and we completely lost any means of contacting him. All remaining three of us had to compensate for that so there was more load on each of us.

The initial design UML diagram was made in full cooperation during group meetings. We brainstormed for the ideas and tried to cover all possible areas of the game.

Although not officially stated anywhere, we considered Jack as our informal group leader. He set up the pybind module and all the bindings, was responsible for creating most modules of the game. His contribution is the biggest in the group. He made the main game loop, card factory, observer, GUI notifier and more. He was our coding master and advisor, always happy to help. It was his idea to implement a GUI notifier so it would be easier to use the GUI module. It was his idea to move from dynamically-generated ASCII cards to manually pre-drawn and simply replacing the tagged areas with information. He created the github repository and was constantly communicating with other teams trying to help them and encourage to work. Although me and Eric were also there for help, it was not as much.

Eric was always there to make sure we were following the official game rules, as he was the only one who was experienced with this game. He implemented attack and damage calculation module (I contributed partially with code and ideas), was responsible for checking card implementation and listing necessary functions. He documented the files with me, worked on the main logics system with Jack, contributed several lists of very useful information like function lists, bug lists and other. And he made the guide to the project as well.

4 Conclusion

Even though sometimes my ideas and thoughts about certain things were different, I think we did good as a team. All three of us did their part in full for the Hub, and we could always discuss and share opinions to each other without any arguments whatsoever. We always stayed in touch and never gave up on the team or project. In the bigger picture, though, the idea of this project was that AI/card teams were supposed to drive the API of the game hub, to tell what things they need to make their cards and AI systems work, but in reality my team had to guess most of the time and implement our vision of what others would possibly need.

I think this was a good lesson for us all, what we should and should not do next time in a group project.

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