CS 319 - Object-Oriented Software Engineering

Final Report

Section 02 Group 2c

Space Invaders

Project Group Members

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1. Implementation

We started the implementation process after we were confident about our object design. In the beginning, we divided the work into three main parts. As our system uses MVC for decomposition, the division of the work was rather easy. One of the group members worked on the implementation of the "Model" classes that focusses on data management and saving current state of the game. The second part which was the "Controller" classes was harder than the other parts since this part is longer, it contains the main logic of the game and it controls the connection between user interface and the model classes. Considering that this part required more effort, two group members were assigned to be responsible for this part. "View" classes were the last part of the project. At first, only one group member was responsible for this but then we decided to help him by pair programming, because this part requires additional perspectives and advices to make it better.

We first started implementing "Model" and "Controller" classes in parallel. At every step of the implementation we shared our opinion on each other's work and it increased the quality that made our code more robust. We used Eclipse IDE for the development of our project. We chose Eclipse IDE because it is one of the best editors for projects written in Java and everyone in our group were quite familiar with this tool.

Eclipse IDE also has integration with GitHub which made version controlling and project management easy for us. "View" classes were implemented after finishing the first two parts, since it is solely dependent on "Model" and "Controller" classes. Since the "View" was not implemented, we used CMD terminal window to test our codes. We also did not want our "Model" and "Controller" to depend on the "View", since we want our game as much portable as possible. We were always trying to inform each other about any updates on the implementation, which made integrating of these parts easy for us, and did not cause many bugs.

We made a lot of changes during implementation since there were some mistake on the objects design that it didn't quite satisfy the MVC principle. Main changes were on the data management part that added some more classes for this purpose. The main changes that we generally made were adding or removing the attributes and the methods of the classes.

We also learned a lot of new practices from this project implementation. This implementation process improved our teamwork skills. We also mastered the tools that were used for implementation, such as Eclipse IDE, GitHub. More importantly, we learned how to apply MVC design principles more professionally.

For iteration one we mostly concentrated on the core classes that is the "Model" and "Controller" and we have built user interface only for testing purposes. Apart from some bugs especially in the data management part, the game is playable. We are thinking of focusing more on the user interface and improving the user experience on the second iteration. Considering the design goals that we set during system design stage, we have accomplished understandability, cogency and difficulty. It is quite easy to play the game that it required only three buttons and our user interface is extremely self-explanatory and simple. Our design choice also makes portability easier, since only "View" needs modifications. For the second iteration performance should be improved with a better user interface.