

Group Project 07 - Final Report

Performance of members, lifetime of the project, analysis

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Config. Ref.: SE.FINAL-REPORT
Date: 2017-03-21
Version: 1.0
Status: Release

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1 INTRODUCTION

1.1 Purpose of This Document

The purpose of this document is to provide as accurate as possible review of the project, its lifetime and group performance as well as individual goals and milestones.

1.2 Scope

This document includes analysis of involvement of each team member, summarises the project's course in terms of deliverables, management and difficulties met.

1.3 Objectives

The objective of the document is to provide a representation of group's experiences and how the project was tackled, whether it succeeded and what was done to achieve the final state.

2 MANAGEMENT SUMMARY

2.1 Project completion

Although the team has managed to write code for all the requirements specified as well as proven requested, we did not have time to test all the features and fix potential bugs. What we did find faulty was the pause menu (which had worked before, but must've been changed right before the submission - W_Pause controller). The bugs are bound to be related to the implementation of chance cards (found in InteractionController class) and potentially the trade window (W_Trade class), which doesn't take into account the ship's maximum capacity as of now. We are quite confident that the system part of the software works as expected (packages which names start with "system.") and W_Game controller should work fine as well (although being a large class). We also weren't able to create the Rules page as well as we were hoping to (W_Rules).

One of the major bugs we're aware of is the modality of popups - especially in InteractionController (chance cards). This makes the user able to click outside of current popups, often invoking unexpected/unintended behaviour.

In terms of strictly UI and user experience we ran out of time to modify Popup_ classes to include styles (to match other windows) as they did not make use of FXML files and needed to be modified in code.

We are aware of not all packages being up to standard in terms of the naming (we ran out of time to do that).

We are confident that our documents conform to the standards and are up to date. We've updated all of them to match the finished product and included feedback improvements (from before Easter break).

2.2 Difficulties and team performance

The team performed well during the work week, especially considering that two people have dropped out of the university during the project. Although with bugs, we provided the functionality required and are confident that given a bit more time (2-5 days) we would be able to finish the product to match our vision, documents, remove most of the bugs (most of the obvious ones have already been removed) and test it properly.

Other than the time limit, I personally think the team could've done better if each member had put more time in the project before Easter break. There were weeks where some members had 0-1 hour of input. This also caused unfamiliarity with the design and having to take everything done before the work week at once, making it difficult to get into the project and get one's head around it. Considering being two people down, we could not afford to take the project lightly if we were to match other teams in terms of performance.

Due to these, the team spent more than 8 hours a day (also working overnight Thu/Fri) during the work week, which resulted in a product that we've done as well as we could.

3 HISTORICAL ACCOUNT OF THE PROJECT

3.1 Week 1-4

We focused on the documentation and the simplest classes that could be done. We set up the SVN repository as well and created a prototype (PowerPoint presentation) of the User Interface and how we would like it to be. Although we started off with a good attitude and high hopes, we barely made the deadline for the UI document and the presentation due to some miscommunication in the team and illness. We had to delegate people that were not initially responsible for the presentation and

document to make or help with making them. Although there was high pressure, we managed to get the files out more or less how we expected them to be and were overall satisfied with the feedback given (mainly thanks to the fact that the document containing system tests was well prepared and on time, leaving people free to help with the UI part). The initial design of the system was prepared as well (the 'model' part of the MVC pattern - base classes and how they relate to each other, sketch of classes that were supposed to provide main functionality, like GameEngine and Board).

3.2 Week 5-6

These weeks focused more on the coding part of the assignment and focusing on the Design Specification document. Classes were added, design was expanded to include the UI part of the software, feedback from the UI + Test documents was taken into account and appropriate changes were made. Some group members created prototypes of the windows and familiarised themselves with the scene maker and how FXML files and their controllers work in Java (based on the demo I provided). I have to note that the demo code was mostly copied over by the team, and while that's fine (that's why the demo was made in the first place), the comments I made and the example of data passing to the controller was also copied and left unchanged (the part where a "This is a String passed to the controller" String is passed and stored inside the controller. Even the function displaying the String afterwards was often left in code). Other than this, I've met other examples of group members not being thorough and not paying attention to what the code is actually doing. While it's understandable in the last 2-3 days, where time is short, I think it's a bad practice if it happens weeks before the deadline.

3.3 Week 7-9

These weeks are another example of not having enough input from the team. The system code was still under development (at the point of writing tests and fixing bugs/design rather than adding functionality). Up to week 9 I have to say that almost the whole system was made by me and Julia (what can be seen through the commit history). There were cases when a person added a test or two, but it wasn't much compared to the work done by us two. While it's true that some people were working on window prototypes, they still were lacking properly-done controllers (except the main game window done by Robert, who started trying to implement some of the functionality and whose part of creating the grid is still there in the final product) and were not up to the standard we've set. It's worth noting that these windows were mainly just menu windows and no complicated functionality was yet required, that's why I think not enough time was put into them and that backfired during the last week.

3.4 Work week

We started off with re-creating/adding FXML windows and implementing controllers for the easier ones (my cards, scoreboard screen, taking treasure, fighting). After making progress there, some roles were taken by group members and they were kept basically until the end of the project. We had some slippage with the trade controller, as it was harder to implement than it seemed, and eventually it was redone and tested at Thu/Fri night and Friday morning-afternoon. We had a separate person working with the scene builder (Mathew) who was implementing drawings and including FX:IDs as we wanted them, so the person writing the controller (Harry/Robert/Jake/Myself) could start writing the code before the window even arrived. By the end of the project Mathew got familiar with creating UI that any changes/fixes/new windows were done within a matter of minutes-hours. Jake was responsible for the graphics - modifying the ones from the presentation to match our needs and creating new ones if we needed any as well as helping with testing/writing the controllers, writing missing tests for the system architecture or performing system tests. Harry, Robert and Myself were responsible for the code for the controllers (Harry and Robert also being system testers) and Julia implemented the

only missing part in the system architecture - Player/Port Interaction and then the UI equivalent - InteractionController.

4 FINAL STATE OF THE PROJECT

1. Issues known:

- Pause menu not showing up (a matter of adjusting the FXML file's IDs and/or the controller FXML instance variable names) [Expected time to fix: 5-10 min]
- Modality of all the windows - needs going through the whole UI code to make sure `.show()/showAndWait()` methods are used as appropriate and modality is set to windows that have priority and act as popups. [Expected time to fix: 30 min]
- Fine-tuning and finishing the rules menu controller [Expected time to fix: up to 3 hours]
- Changing popups and maybe rearranging some of the UI layout to improve the look of the application [Expected time to fix: up to 4-5 hours]
- Testing fighting and trading sequence (especially with chance cards involved) - these weren't tested properly and potential bugs need fixing. [Expected time to fix: up to 4-6 hours]
 - After passing through a player that doesn't decide to fight, the interaction with treasure/flat island doesn't happen [Expected time to fix: 30 min]
- Testing chance cards and fixing potential bugs - we managed to commit some fixing code right before the deadline but haven't managed to test it. While most of the cards worked/seemed to work fine and many scenarios were added, some bugs were caught and fixed while testing, we didn't have time to test it against some unusual scenarios (e.g. pirate island being empty) as well as the standard ones. If we had more time we probably would write a separate test class to help us set up scenarios that we want to test (like we did with fight confirmation and taking treasure windows which enable us to test a particular UI functionality manually without having to set the whole game up) [Expected time to fix: 1-1.5 days]
- Trade controller needs to consider ship's maximum capacity and display appropriate message (it just skips the trade upon confirmation) [Expected time to fix: 1-2 hours]
- Proper data hiding depending on current state of the game (mainly right side of the window + my cards screen during fighting-sequence switches of players) [Expected time to fix: 1-2 hours]
- Cleaning up, commenting the code and packages - parts of the code aren't commented/arranged up to the standards due to the lack of time. [Expected time to fix: 3-5 hours]
- Refactoring - the code needs serious refactoring. Much of the code is duplicated, some code is used in many places and made public after some time from the creation (often in unrelated classes), then modified to match a particular need. There's often a mixture of UI and regular code (which is fine in the UI controllers, but only to some extent). Due to rushing, the UI code, especially the parts written later in the week, need a lot of work and refactoring to provide a maintainable and shorter/cleaner code. [Expected time to fix: up to 5 days]

2. Functionality we're confident about:

- Name checking
- Scoreboard/MyCards tracking/displaying
- Detailed view when hovering over objects
- Depositing items in a port
- Anchor Bay functionality

- Movement/turning system as well as changing turns
- Choosing a winner when they arrive at their home port

3. **Functionality we THINK should be bug-free:**

- Taking treasure from treasure island
- Fighting sequences (both when crossing over a player and ending a turn at another player's ship) - including valid retreating moves and transitions between players

5 PERFORMANCE OF EACH TEAM MEMBER

1. **Kamil (Myself) [Team Leader, ex-Deputy Team Leader]** - I think I spent enough time on the project (worked extra time during the work week as well) and did well as a leader (although sometimes I think I came up as too bossy and demanding, which I hope can be excused with the fact that I cared about the project from the very beginning and did not mean for it to be received that way). I wrote the Design Specification document (including UML diagram) and UI Specification document. In terms of coding I wrote a large part of the system and some controller code for the UI part of the assignment.
2. **Julia [Deputy QA, System/Model Dev]** - Julia wrote about 50% of the system (with tests), the larger part of the System Test Specification document and helped a bit with UI Specification document + Design Specification document. She was responsible for the InteractionController which handled chance cards, islands and ports (except trading). She spent a lot of time on the project and was very thorough and keen to learn. What I appreciate a lot is her willingness to raise any concerns regarding the design that came up during programming the system, which made the Model code only slightly changed during the work week.
3. **Mathew [Minutes, UI Dev]** - Mathew was really helpful thorough the whole project. Although his hours dropped considerably during a few weeks, he definitely made up for it during the work week and working over time. As I previously said Mathew was responsible for all the UI development - he created a maintainable/extendable controller-ready windows in FXML scene builder and made them look nice by implementing stylesheets. He was very responsive to any changes/fixes that needed doing. In terms of documentation, Mathew took a large part in creating the PowerPoint presentation, helped with the Design Specification and maintaining the UI Specification after we finished the software.
4. **Jake [UI Prototype, Graphics, Testing/Dev]** - Jake was responsible for the PowerPoint presentation and designing the window prototypes in FXML scene builder (main menus) and although he needed help with the presentation due to illness, many game elements that are available in the finished product are his initial vision. His graphics were used in the game and he kept on with this task during the work week, helping us with all kinds of testing and writing some controller code himself (including InteractionController functions for some of the chance cards). Jake has also helped with the Design Specification right before the deadline. Other than the amount of time spent on the project (which could've been a bit higher at times) there aren't any negatives that relate to Jake's work.
5. **Robert [Deputy Team Leader, ex-Leader, UI/System Dev]** - Robert passed the leadership onto me few weeks into the project. He was co-creator of the System Test Specification document, spent the most time on the window prototypes before the work week (much of the code written then was used in the final product), helped a huge portion with the PowerPoint presentation and wrote the Maintenance Manual. A very large portion of the UI code is his (including InteractionController functions for some of the chance cards), he also wrote the whole Trade controller, which unfortunately he couldn't manage to get working in the end due to some minor bugs (that's when the controller was rewritten). Even though Robert also had weeks with

hours below the requested 8-hour mark, he definitely made up for it with his hard work and extra hours during coding week.

6. **Harry [QA Manager, UI/System Dev]** - Although Harry received a yellow card right before Easter break due to his very low input in the project as a whole (and the initial deal was for him to work during the break), he put a lot of effort during the work week. Harry worked with a lot of controller code, much of which is all his for some windows. He also helped with InteractionController and started putting a test report together. He put extra hours during the work week to try and work off his yellow card, and after the coding week ended, he also did a large part of the documentation by writing the Test Report by himself and modifying the UML diagram to match the finished product.

6 CRITICAL EVALUATION OF THE TEAM AND THE PROJECT

Team Leader Comment:

All in all I understand that the project was an opportunity to learn and I did not expect anybody to be a professional (especially that I'm nowhere near one myself and am responsible for a whole lot of bad code/design choices). Everyone makes mistakes and as the designer + team leader I never meant to give anybody an impression that I'm mad with someone because they're not doing well in programming. Although mistakes happen and they're to be expected, I am sure many of them could have been avoided by spending more time learning the software we're writing from the very beginning and spending enough time on the project.

Team Evaluation:

We're satisfied how we performed as a team. Although there were some communication problems in the beginning and work not being done on time in a few cases, the work week proved that we work well together and manage to do a lot in a short time. We also were organised - each team member showed up each day as well as everyone had a task to do at all times, often specialised based on what their 'role' was. Staying overnight proved our devotion and ability to push ourselves to the limits if need be.

We think that the project could've ended up a bit better (especially in terms of code quality and being bug-free) but considering circumstances we think we did well and are satisfied with how our submission turned out.

We enjoyed working together and think that this project was a great experience and an opportunity to see how working in industry-like conditions/quality standards look like.

REFERENCES

[1]

DOCUMENT HISTORY

Version	CCF No.	Date	Changes made to Document	Changed by
0.1	N/A	2017-03-21	Initial creation	KAC12
0.9	N/A	2017-05-08	Review-ready version	KAC12
1.0	N/A	2017-05-09	Review and Release	KAC12, TEAM