

FINAL Project Report

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Project Name

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SECTION 1: REPORT SUMMARY

Our project report highlights our design processes, weekly retrospectives, sprint overviews, product backlogs for each sprint, and documentation for each code review we held across the four sprints. We aim to utilize the Agile Design processes, Git Flow processes, and our collaborative skills to construct a comprehensive adventure game with a Javafx graphic user interface.

Project Demo Link: <https://www.youtube.com/watch?v=S5pxrz5yKvg>

(The computer audio in this demo wasn't recorded for the first link, <https://youtu.be/YCHuJihqMKA> Here is the version that the computer audio is recorded but the microphone wasn't very clear), computer audio includes background music, button pressing sound (0:25 - 0:35), shop buying object sound (1:57 - 2:17), music volume setting (3:03 - 3:09)

SECTION 2: PROCESS DOCUMENTATION

2.1. SPRINT 1 OVERVIEW (Date: Nov. 12 - Nov. 19)

2.1.1 Sprint Overview:

Our goal for this sprint is to revise our Design Document submitted in Phase 1 based on the comments as based on the grades and comments we think we have a lot to change such as rethinking or adding user stories and splitting bigger user stories into smaller parts. We also need to get familiar with merge requests and git branching. And start working on the most difficult and most time-consuming user story first.

2.1.2 Stories Selected for this Sprint:

Alan:

- DEV-1.1 Map

Andrew:

- DEV-1.3 Accessibility/Settings (later split into DEV-1.3 Brightness, DEV-1.8 Background Music, DEV-1.12 Colour Contrast)

Daniel:

- DEV-1.6 Homepage and Visual Design (Assisting)
- DEV-1.4 Shop

William:

- DEV-1.6 Homepage and Visual Design (initially called DEV-1.6 Homepage, had split into two user stories: DEV-1.6 Homepage and Visual Design, and DEV-1.7 Difficulty)

2.1.3 Team Capacity:

We expected to fully revise the design document by the 14th.

Finished familiarising with specifications and merging commands by the 16th.

Finish the user stories by the 19th.

2.1.4 Participants:

Alan:

- DEV-1.1 Map
 - Coding: Figure out how to implement map as well as how to display it.

Andrew:

- DEV-1.3 Brightness
 - Designing: Visual Design for the setting menu.

Daniel:

- DEV-1.6 Homepage and Visual Design

- Assisting: Assist William with the visual design and implemented full screen background capabilities
- DEV-1.4 Shop
 - Coding Implemented dependent attributes and methods

William:

- DEV-1.6 Homepage and Visual Design
 - Designing: Visual design of the Homepage and the game is designed by hand
 - Coding: Adding needed classes and work on homepage design.
- Management: Make sure that every member of the team is familiar with merging requests, branches, other related git commands, and specifications.

2.1.5 Tasks Completed:

William finished the visual design of Homepage and the game with the help from Daniel (we conducted extensive discussion) and we found possible background pictures and logos. William also added Troll class for future needs. And either let everyone have a chance to try merging requests/ or test them verbally to ensure the team is on the right track.

Andrew finished the visual design of the setting menu, and the structure for the setting class.

Alan finished the map design and how to implement it. Come up with room designs that can logically fit on a single layer.

2.2. SPRINT 1 PRODUCT BACKLOG

User Stories	Owner	Priority	Status
DEV-1.1 Map	Alan	1	Selected
DEV-1.2 Inventory Popup	Alan	2	
DEV-1.3 Accessibility/Settings	Andrew	1	Selected
DEV-1.4 Shop	Daniel	1	Selected
DEV-1.5 Ending Select	Daniel	2	
DEV-1.6 Homepage and Visual Design	William	1	Selected
DEV-1.7 Difficulty	William	1	
DEV-1.9 Button Effect	Alan	2	

Update on the user stories in this sprint:

- Changed user stories:
 - DEV-1.2 Inventory Popup, initially DEV-1.2 Fancy GUI
 - DEV-1.6 Homepage and Visual Design, initially DEV-1.6 Homepage
 - DEV-1.7 Difficulty, initially DEV-1.7 different characters
- Added new user stories:
 - DEV-1.9 Button Effect

Selected User stories:

- William: DEV-1.6 Homepage and Visual Design
- Daniel: DEV-1.6 Homepage and Visual Design (assisting) & DEV-1.4 Shop
- Alan: DEV-1.1 Map
- Andrew: DEV-1.3 Accessibility/Settings

2.3. SPRINT 1 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
N/A	William He	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/3
N/A	Andrew Ding	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/2
N/A	Alan Wang	Not enough merge requests
N/A	Daniel Hu	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/1

Note: We have been trying hard to figure out how to utilise the git. In the end, a lot of git issues appeared and we have yet to figure out the structure of the git flow and commands at the end of the sprint. Therefore, very limited codes were done, and no user stories were reviewed.

2.4. SPRINT 1 RETROSPECTIVE

Participants: William, Daniel, Alan, Andrew

Unfinished tasks: Gitlab merging and other issues such as accidentally overwriting files and deleting important files.

What went well: Each member had a solid foundation of the design of each user story

New/revised practices: It is good for team members to work together via virtual and personal meetings regularly

Bad practices: Deterred attention onto other assignments, and the git issues experienced during the sprint delayed progress.

Best experience: Having each member dedicate their own user story and have a basic understanding of how they will implement it.

Worst experience: Major Gitlab issues including conflicts, errors, and loss of progress.

2.5. SPRINT 2 OVERVIEW (Date: Nov. 20 - Nov. 25)

2.5.1 Sprint Overview:

Our goal for this sprint is to start working on the coding part of the user stories left from last week. We aim to finish one user story with some revisions conducted. Finally, to make some merges for this week's task.

2.5.2 Stories Selected for this Sprint:

Alan:

- DEV-1.1 Map

Andrew:

- DEV-1.3 Brightness

Daniel:

- DEV-1.6 Homepage and Visual Design (Assisting)
- DEV-1.4 Shop

William:

- DEV-1.6 Homepage and Visual Design
- DEV-1.7 Difficulty: If previous one is done, start working on this user story, focusing on the transition from homepage to a game

2.5.3 Team Capacity:

We expected to have at least a user stories draft by Nov. 23rd, with revisions conducted based on how code affects the visual appearance on Nov. 25. And make some merges for this week's task by the beginning of the next sprint.

2.5.4 Participants:

Alan:

- DEV-1.1 Map
 - Coding: Finished implementing a working version of Map that can be displayed.

Andrew:

- DEV-1.3 Brightness
 - Coding: finished the implementation of the brightness feature that allows users to change the brightness of the game, and finished setting page that pops up when the user clicks the setting button.

Daniel:

- DEV-1.4 Shop:
 - Coding: Completed the implementation of Shop class. Adapted implementation of new methods and attributes for Player and AdventureObject classes
 - Designing: Create new shop object based on the difficulty of the game
- DEV-1.6 Homepage and Visual Design
 - Assisting & Designing: Utilised graphic design software to create visuals such as buttons, backdrops, and titles.

William:

- DEV-1.6 Homepage and Visual Design
 - Coding: Complete the User stories (including homepage showing up with add button event for all button in the homepage)
 - Coding: basic features (such as buttons) when starting the game is implemented
 - Coding several revision of the above code is conducted
- Management: Make sure that every member on the team is on track by setting and reminding them about the deadlines

2.5.5 Tasks Completed:

William finished a first draft of DEV-1.6 visual design of the homepage and the game and revised several times of the code. Specifically, he revised the code for the homepage, and some basic design of the game after pressing the corresponding difficulty button on the homepage.

Andrew finished the coding for the setting menu and implemented the brightness function that allows users to change the brightness of the game.

Daniel finished the backend implementation of DEV-1.4 Shop, which includes Shop, Player, and AdventureObject classes.

Alan finished the map feature that only shows visited rooms and the passages around it as well as creating a map for the newly designed game layout.

2.6. SPRINT 2 PRODUCT BACKLOG

User Stories	Owner	Priority	Status
DEV-1.1 Map	Alan	1	In Progress
DEV-1.2 Inventory Popup	Alan	2	Removed
DEV-1.3 Brightness	Andrew	1	In Progress
DEV-1.4 Shop	Daniel	1	In Progress
DEV-1.5 Ending Select	Daniel	2	Removed
DEV-1.6 Homepage and Visual Design	William	1	In Progress
DEV-1.7 Difficulty	William	1	Selected

DEV-1.8 Background Music	Andrew	2	
DEV-1.9 Button Effect	Alan	2	In Progress
DEV-1.12 Colour Contrast	Andrew	1	

Update on the user stories in this sprint:

- Changed user stories:
 - DEV-1.3 Brightness, initially DEV-1.3 Accessibility/Settings
- Added new user stories:
 - DEV-1.8 Background Music
 - DEV-1.9 Button Effect
 - DEV-1.12 Colour Contrast
- Deleted User Stories:
 - DEV-1.2 InventoryPopup

Selected User stories:

- William: DEV-1.6 Homepage and Visual Design (To revise), DEV-1.7 Difficulty
- Daniel: DEV-1.6 Homepage and Visual Design, DEV-1.4 Shop
- Alan: DEV-1.1 Map
- Andrew: DEV-1.3 Brightness

2.7. SPRINT 2 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
DEV-1.3 Brightness	William	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/3
DEV-1.4 Shop	Andrew	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/17

DEV-1.3 Accessibility	Alan	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/11
DEV-1.6 Homepage and Visual Design	Daniel	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/4

2.8. SPRINT 2 RETROSPECTIVE

Participants: William, Daniel, Alan, Andrew

Unfinished tasks: UI of DEV-1.4 Shop, merge all completed branches into Developer branch.

What went well: Significant progress in terms of code and fluency with git

New/revised practices: Met together in person and online to test, review, and provide feedback to our code.

Bad practices: Not reading the project specification thoroughly

Best experience, worst experience: Able to meet together frequently, a vast improvement from the previous week. Gitlab ambiguity and troubles revolving around merging and pulling.

2.9. SPRINT 3 OVERVIEW (Date: Nov. 26 - Dec. 1)

2.9.1 Sprint Overview:

Our goal for this sprint is to work on the new user stories if the previous story finished in the last week. Or keep working on the existing user story. As well as merging all the work done from last week and possibly this week.

2.9.2 Stories Selected for this Sprint:

Alan:

- DEV-1.1 Map
- DEV-1.9 Button Effect

Andrew:

- DEV-1.12 colour contrast

Daniel:

- DEV-1.4 Shop

William:

- DEV-1.7 Difficulty
- DEV-1.6 Homepage and Visual Design (to finalise)

2.9.3 Team Capacity:

We expected to have two regular meetings other than retrospectives so that all members can work together or receive suggestions from peers. And everyone can have at least one draft of code for the most difficult user story, while others have revised several times.

2.9.4 Participants:

Alan:

- DEV-1.1 Map:
 - Coding: Update Map so that it only displays visited rooms and the passages connected to said visited rooms.
 - Coding: Update Map so that it displays the newly designed game.
 - Fix bugs caused by new implementations of other user stories.
- DEV-1.9 Button Effect:
 - Coding: Implement Button Effect
 - Design: Figure out what effect to implement (Decided on enlarge effect)

Andrew:

- DEV-1.12 colour contrast
 - Coding: Implementation for the feature for players with restricted vision. The feature is integrated into the settings menu.

Daniel:

- DEV-1.4 Shop

- Coding: Implementation for Shop UI and buttons. Have it connected to Player, AdventureObject, Shop classes
- DEV-1.4 Shop
 - Coding: Altered parseObjects() method from AdventureLoader to fit with both room objects and shop objects. Edited objects.txt
- DEV-1.6 Homepage and Visual Design
 - Coding: Added sound effects when a button is pressed for all buttons.

William:

- DEV-1.6 Homepage and Visual Design of the game
 - Coding: Finalised Code and eliminated errors such as saving/loading
- DEV-1.7 Difficulty:
 - Design: Design of the game with different difficulty, with using different trolls, rooms, objects, ways to control directions (using WASD), selecting suitable background music.
 - Coding: Implement or update relevant functions that is relevant to the visual view
- Management: Make sure that every member on the team is on track by setting and reminding them about the deadlines, holding retrospectives and other meetings

2.9.5 Tasks Completed:

What was actually finished during this sprint?

William: Finalises the design of games with different difficulty. Finished designing the game with different txt files and background music. Implemented all the visual design of the game that makes the games visually appealing.

Daniel: Finished altering parseObjects, objects.txt, and partial implementation of the shop UI. Completed implementation of sound effects on button click.

Alan: Finished all additional map features as described in 2.9.4 and fixed map bugs as well as adding a button effect that enlarges buttons when hovered over.

2.10. SPRINT 3 PRODUCT BACKLOG

User Stories	Owner	Priority	Status
DEV-1.1 Map	Alan	1	In Progress
DEV-1.2 Inventory Popup	Alan	2	Removed
DEV-1.3 Brightness	Andrew	1	Complete
DEV-1.4 Shop	Daniel	1	In Progress
DEV-1.5 Ending Select	Daniel	2	Removed
DEV-1.6 Homepage and Visual Design	William	1	Complete
DEV-1.7 Difficulty	William	1	In Progress
DEV-1.8 Background Music	Andrew	2	Selected
DEV-1.9 Button Effect	Alan	2	Selected
DEV-1.12 Colour Contrast	Andrew	1	In Progress

No update on the user stories in this sprint

Selected User stories:

- William: DEV-1.6 Homepage and Visual Design (To Finalise), DEV-1.7 Difficulty
- Daniel: DEV-1.4 Shop
- Alan: DEV-1.1 Map, DEV-1.9 Button Effect
- Andrew: DEV-1.12 Colour Contrast

2.11. SPRINT 3 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
DEV-1.3: Brightness	William	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/5
DEV-1.4: Shop	William	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/9
DEV1.8: Music	Andrew	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/26
DEV-1.7 Difficulty	Alan	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/30
DEV-1.6 Homepage and Visual Design	Daniel	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/23

2.12. SPRINT 3 RETROSPECTIVE

Participants: William, Daniel, Alan, Andrew

Unfinished tasks: Done most of the DEV-1.4 Shop UI. Implementation of shop object behaviour in player inventory (use item, apply item effects)

What went well: Even better communication and meetings amongst group members. Most code is compatible with each other, minimal errors

New/revised practices: Reading all piazza posts, revising specifications and announcements to be updated on confusions/news.

Bad practices: Merging, committing, and deleting files without letting other members know. These caused errors and disrupted gitflow.

Best experience, worst experience: Having code come along with interfaces visualising as expected and group members helping each other.

2.13. SPRINT 4 OVERVIEW (Date: Dec. 2 - Dec. 5)

2.13.1 Sprint Overview:

Our goal for this sprint is to finish up all the user stories. We also need to run and test the program multiple times to make sure the code is correct. We also need to revise the code to see if any tests and documentation are missing.

2.13.2 Stories Selected for this Sprint:

Alan:

- DEV-1.1 Map
- DEV-1.9 Button Effect

Andrew:

- DEV-1.8 Music

Daniel:

- DEV-1.4 Shop

William:

- DEV-1.7 Difficulty

2.13.3 Team Capacity:

We expected to finish the entire coding part by 3rd, and start to working on revision of documentation, tests, and other minor improvements at that time.

2.13.4 Participants:

Alan:

- DEV-1.1 Map:
 - Coding: Add a feature that shows players current location.
 - Coding: Add a background to the map. Fix an issue with the map not showing after loading a game.
 - Coding: Add Javadocs.
- DEV-1.9 Button Effect:
 - Coding: Change button effect from button enlargement to button colour change as button enlargement causes shifts to pane.

Andrew:

- DEV-1.8 Music
 - Coding: Implemented music feature. Added different background music for different stages of the game. Added Option to change to volume of the music in the setting menu.

Daniel:

- DEV-1.4 Shop
 - Coding: Full implementation of Shop UI to be completed
 - Coding: Back button (back to the game from the shop) button and behaviour to be fully implemented

William:

- DEV-1.7 Difficulty
 - Coding: Finishes all the backend part such as update the update scene, interpret action, formattext methods, as well as extra methods such as initGame, returnHome.
 - Coding: Make sure tests and Javadoc are included.
- Management: Make sure that every member on the team is on track by setting and reminding them about the deadlines, holding retrospectives and other meetings

2.13.5 Tasks Completed:

William: Fully completed DEV-1.7 difficulty, including all working buttons, commands and functions implemented.

Daniel: Fully completed the implementation of Shop UI, including all buttons, different shops based on game difficulty, return to game behaviour, and player buying and using items bought from the shop.

Alan: Completely finished Map with all features as described in the report as well as Button Effects. Fixed bugs involving other classes

Andrew: Completed DEV-1.8 Music, added volume button in settings that allow users to change the volume of the music.

2.14. SPRINT 4 PRODUCT BACKLOG

User Stories	Owner	Priority	Status
DEV-1.1 Map	Alan	1	Complete
DEV-1.2 Inventory Popup	Alan	2	Removed
DEV-1.3 Brightness	Andrew	1	Complete
DEV-1.4 Shop	Daniel	1	Complete
DEV-1.5 Ending Select	Daniel	2	Removed
DEV-1.6 Homepage and Visual Design	William	1	Complete
DEV-1.7 Difficulty	William	1	Complete
DEV-1.8 Background Music	Andrew	2	Complete
DEV-1.9 Button Effect	Alan	2	Complete
DEV-1.12 Colour Contrast	Andrew	1	Complete

No update on the user stories in this sprint.

Selected User stories:

- William: DEV-1.7 Difficulty
- Daniel: DEV-1.4 Shop
- Alan: DEV-1.1 Map, DEV-1.9 Button Effect
- Andrew: DEV-1.8 Background Music

2.15. SPRINT 4 CODE REVIEWS

We're expecting that each team member will make some changes to the team repository at each sprint (meaning we expect to see roughly weekly commits). Moreover, we're expecting that before changes on feature branches are transferred to your team's development branch, your team will conduct code reviews. You can do these in class! Each team member should provide at least one code review for one of their peers at each sprint iteration. Your reviews will be documented in your repository, but we ask that you briefly document them here as well using this format:

Story Reviewed	Name of Reviewer	Pull Request Link
DEV-1.1: Map	William He	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/34
DEV-1.4: Shop	William He	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/45
DEV-1.7: Difficulty	Andrew Ding	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/43
DEV-1.7: Difficulty	Andrew Ding	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/48
DEV-1.1 Map	Daniel Hu	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/46
DEV-1.8 Background Music	Alan Wang	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/44
DEV-1.7 Difficulty	Alan Wang	https://mcsscm.utm.utoronto.ca/csc207_20239/group_59/-/merge_requests/38

2.16 SPRINT 4 RETROSPECTIVE

Participants: William, Daniel, Alan, Andrew

Unfinished tasks: Everything is done

What went well: Being able to run the game without errors and writing passing unit tests.

New/revised practices: N/A

Bad practices: Having merge conflict in the end, but being able to solve it smoothly.

Best experience: Having all of the work submitted

Worst experience: Having practised a long time when recording a ten minute video just trying to show all the work we have done. As well as git being slow due to the amount of people using it last minute to complete their merges.

SECTION 3: SUMMARY

In Project Phase 2, we have changed a reasonable amount of User Stories that we set in Project Phase 1. We reflected on the importance of the agile process that encompasses tasks such as the assigned user stories. We learned to be constantly updating it, instead of keeping it fixed. We were able to gain a lot of experience from the team working. As we hosted extra weekly meetings to discuss our progress and do code reviews together, the outcome of this entire process for us is phenomenal. One limitation that we met is the git flow. We encountered difficulties while merging code from different branches. But in the end, we are able to embrace our mistakes and paint our way for future projects through our expanded skillset.