Final Project Report
Created 2023.11.15

Group 65
Andrew Nic Cole
Devin Mendes
Chau Nguyen
Amber Richardson

SECTION 1: REPORT SUMMARY

Our goals for this project were to address various accessibility concerns.

Additionally, we added game modes to add variety to how the player moves rooms, and object types to add variety to how the player picks up objects. This ensures the game is more engaging than picking up all the objects and heading to the winning room.

SECTION 2: PROCESS DOCUMENTATION

Sprint 1 – November 10th to November 17th

2.1.1 Sprint Overview:
One of our goals for this sprint is to add the accessibility features ZoomOption and CommandButtons. Another goal is to complete ObjectTypes to add interactivity to the game. Finally, our last goal is to complete GameModes to make the implementation of specific game modes in future sprints easier.

2.1.2 Stories Selected for this Sprint:
- 1.1 GameModes (Amber)
    - o The UML for this user story was altered to reflect added helper methods and better implement the acceptance criteria "A player can only select a game mode on a new game."
- 1.2 Statistics (Amber)
- 1.4 Command Buttons (Nic)
- 1.3 ObjectTypes (Devin)
- 1.5 ZoomOption (Chau)

2.1.3 Team Capacity:

Our internal deadline to complete implementation is the morning of Thursday, November 16th, with assignment of merge requests/code reviews and our retrospective meeting occurring in class on the 16th.

2.1.4 Participants:

- Amber
    - o 1.1 GameModes
    - o Creation of this document
- Nic
    - o 1.4 Command Buttons
- Devin
    - o 1.3 ObjectTypes
- Chau
    - o 1.5 ZoomOption

2.1.5 Tasks Completed:

- 1.1 GameModes
- 1.4 Command Buttons
- 1.5 ZoomOption

2.2. SPRINT 1 PRODUCT BACKLOG

- User Stories not yet tackled:
    - o 1.1 GameModes
    - o 1.2 Statistics
    - o 1.3 Object Types
    - o 1.4 Command Buttons

- o 2.6 GameMode: Chaotic Movement
- o 2.7 Game mode: Always trolled
- o 2.8 Informative NPCs
- o 2.9 Informative Objects
- o 2.10 Visual Path

User storied added this sprint:

- o 3.11 Traversal and Alt Text

2.3. SPRINT 1 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
[DEV 1.1]	Nic	Part 1: https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/1 Part 2: https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/3
[DEV 1.5]	Chau	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/4
[DEV 1.5]	Amber	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/5

2.4 SPRINT 1 RETROSPECTIVE

1. Participants: All members of the team
2. Tasks finished:
- CommandButtons (created and approved merge request to /dev)
- ZoomOptions (created and approved merge request to /dev)
- GameModes (created and approved merge request to /dev)
3. Tasks unfinished:
- The RadioButtons as a part of GameModes don't appear to be traversable

using tab but are traversable using the up and down keys
- Object Types needs puzzles to be easier and possible fewer runners to impede the flow of the game less. A game mode can be added with more difficult puzzles and runner features.
4. What went well:
- Coding before class, reviewing merge requests and merging in class.
5. What could be done better:
- DM your group member when you send them a merge request or comment on their merge request so that they can check it out.
- Merging to /dev instead of /main :O
6. Best/worst experience:
- Devin is working on accessing AdventureGameView Object

Sprint 2 – November 11th to November 24th

2.1.1 Sprint Overview:

The goal of this sprint is to start working on more ambitious features of the game, such as the Visual Path, the Informative NPCs, and Statistics. Additionally, we hope to finish Object Types. As we are more unsure of the difficulty and effort needed for the stories being tackled in this sprint, we hope this sprint helps us better predict the effort we'll need for future user stories.

2.1.2 Stories Selected for this Sprint:
- 1.2 Statistics (Amber)
- 2.8 Informative NPCs (Nic)
- 1.3 ObjectTypes (Devin)
- 2.10 Visual Path (Chau)

2.1.3 Team Capacity:

Our internal deadline to complete implementation is the morning of Thursday, November 23rd, with assignment of merge requests/code reviews and our retrospective meeting occurring in class on the 23rd.

2.1.4 Participants:

- Amber
    o 1.2 Statistics
    o Formatting of this document for this sprint
    o Retrospective notes
- Nic
    o 2.8 Informative NPCs
    o Game content: Fancy images
- Chau
    o 2.10 Visual Path
    o Set up GUI elements of the Visual path: buttons for Journey and Progress thus far

2.1.5 Tasks Completed:

- 1.2 Statistics
- 2.8 Informative NPCs
- 1.3 ObjectTypes

2.2. SPRINT 2 PRODUCT BACKLOG

- User Stories not yet tackled or finished:
    o 1.2 Game Modes
    o 1.3 Statistics
    o 2.6 GameMode: Chaotic Movement
    o 2.7 Game mode: Always trolled

- o 2.8 Informative NPCs
- o 2.9 Informative Objects
- o 2.10 Visual Path
- o 3.11 Traversal and Alt Text

2.3. SPRINT 2 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
[Dev 1.2] Statistics	Devin	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/11
[Dev 1.3] Object Types	Nic	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/9
[Dev 2.8] Informative NPCs	Amber	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/10
[Dev 1.3] Object Types	Nic	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/12

2.4 SPRINT 2 RETROSPECTIVE

- Meeting attendees: everyone
- Unfinished tasks:
  - o Nic: Progression/Observer pattern that was implemented this sprint did not have a needed abstract class and will be fixed
    - ▪ More NPC dialogues to be added
    - ▪ NPC dialogue audio
  - o Chau: Visual Path is 30% done. Will be continued next sprint
  - o Devin: additions still needed for ObjectTypes
    - ▪ Percentage change of ObjectType being basic lowered to make the game more playable

- Capitalizes first letter of scrambled words to make them easier
- Descriptions for popups for puzzles and runner popup
- Make objects Serializable to be saved
  - Make treasure objects not required being "unlocked" again if dropped
- Practices that went well
  - Pulling from develop to get GUI changes before adding to the GUI. This makes panels have fewer conflicts
  - Texting people about merge requests
- Revised practices
  - Considering using "rubber duck" method to work through problems
- Best and worst experience
  - Issues with Git conflicts

Sprint 3 – November 25th to November 30th

2.1.1 Sprint Overview:

The goal of this sprint is to refine or complete the more ambitious features started in sprint 2, specifically the NPC that guides the player, and the Visual Path. Additionally, the implementation of the other game modes will be done in this sprint. Finally, accessibility will be addressed by making the main game panel traversable and adding audio to the NPC.

2.1.2 Stories Selected for this Sprint:
- 2.6 Chaotic Movement Game Mode (Amber)
- 3.11 Traverse and Alt Text (Amber)
- 2.8 Informative NPCs (Nic)
- 2.7 Troll Game Mode (Devin)
- 2.10 VisualPath (Chau)

2.1.3 Team Capacity:

Our internal deadline to complete implementation is the morning of Thursday, November 30th, with assignment of merge requests/code reviews and our retrospective meeting occurring in class on the 30th.

2.1.4 Participants:

- Amber
    - o 2.6 Chaotic Movement Game Mode and 3.11 Traverse and Alt Text
    - o Formatting of this document for this sprint
    - o Retrospective notes
- Nic
    - o 2.8 Informative NPCs – dialogues and audios
    - o Game content: Fancy room images
- Devin
    - o Game content: Fancy object images
    - o 1.1 Game modes – Curse of the Troll
- Chau
    - o Finishing VisualPath

2.1.5 Tasks Completed:

- 2.6 Chaotic Movement Game Mode
- 3.11 Traverse and Alt Text
- 2.8 Informative NPCs
- 1.3 ObjectTypes
- 2.10 VisualPath

2.2. SPRINT 3 PRODUCT BACKLOG

- User Stories not yet tackled or finished:
    - o 2.9 Informative Objects

2.3. SPRINT 3 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
[Dev 2.6] Chaotic Movement Game Mode	Devin	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/15
[Dev 3.11] Traverse and Alt Text	Nic	1. https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/14 2. https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/17
[Dev 2.7] Curse of the Troll Game Mode	Amber	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/16
[Dev 2.8] Informative NPCs	Amber	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/13

2.4 SPRINT 3 RETROSPECTIVE

- Meeting attendees: everyone
- Unfinished tasks:
    - Chau: Adding ScrollBar to both Progress and Journey JFrame to account for when the path gets longer than the dimension of the popup window
    - Devin wants to add a close button
    - Design document by Saturday
        - Modifying UML
        - Emphasize accessibility features
- Practices that went well
    - Adding the view as a parameter for easier implementation of methods outside of the AdventureView class that want to add

GUI features/ popups
- o Using AI for assistance on non-coding features (audio, visuals)
- o Communication when merge requests were made
- Revised practices
  - o Feel we worked through issues during sprint two, so this sprint didn't really have any hiccups
- Best and worst experience
  - o Trying to fix the traversal was very annoying because the method setFocusTraversable always had one panel that was not traversable despite it being true
  - o Using OOP to pass in AdventureGameView to help with things like popups that require the main view
- Notes for final presentation
  - o Nic wants to work on the procedure of how we will present

Sprint 4 – December 1st to December 5th

2.1.1 Sprint Overview:

The goal of this final sprint is to make minor fixes to the game, and to improve on the documentation throughout the files. Additionally, any changes necessary to the Design Document or this document will be completed this sprint.

2.1.2 Stories Selected for this Sprint:

2.1.3 Team Capacity:

Our internal deadline to complete these changes is December 2nd, so we can prepare for our presentation starting December 3rd.

2.1.4 Participants:

- All: Edits to individual's parts in the design document, final report, and documentation additions to files

2.1.5 Tasks Completed:

- AmberDocumentation (Amber's fixes to documentation, visibility of test files, and deletion of unnecessary files)
- 2.7 Troll Game Mode
- NPC Documentation for commenting classes, variables, and methods relating to NPC
- JavaDoc can be compiled
- Continuity/Path issues in Rooms.txt fixed
- 2.10 VisualPath

2.2. SPRINT 4 PRODUCT BACKLOG

- User Stories not yet tackled or finished:
  - o 2.9 Informative Objects

2.3. SPRINT 4 CODE REVIEWS

Branch	Name of Reviewer	Pull Request Link
AmberDocumentation	Nic	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/18
NPC	Devin	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/20
Curse-of-the-Troll	Nic	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/19

visualPath	Nic	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/21
TraverseAndAltText	Chau	https://mcsscm.utm.utoronto.ca/csc207_20239/group_65/-/merge_requests/22

2.4 SPRINT 4 RETROSPECTIVE

As this sprint only was a few days, we had no official retrospective meeting. However, on our group chat we discussed the final changes we hoped to make, and plans on how we wanted to present our live demo.

SECTION 3: SUMMARY

Accomplishments

We were really proud of the work we completed, which included finishing all but one user story we started with, plus finishing an additional user story that was added.

We found we worked well and were good at communicating issues and changes, which led to few merge conflicts and no arguments. Our best practice was making a solid plan that we stuck to, which helped us stay on track.

Limitations

While we finished almost everything we planned, there were various additions that we thought of that we did not have time to complete, specifically due to time constraints. The user story 2.9 Informative Objects was not tackled, mainly due to it's similarity to 2.8 Informative NPC, but with more time we would have implemented this story in a way that would have helped the user on top of the NPC.

Additionally, we had ideas on how to improve our current user stories that we did not have time for. Our biggest area we wanted to expand on was related to

accessibility; we wanted to improve the accessibility of the various pop-up panels in the game, have text be traversable with alt text, have AI-generated audio that says what is written on the panel, or as Sid suggested, an option to make the font larger.

Explanation of changes:

For the movePlayer method in the AdventureGame and the interact method in InteractBehavior, AdventureView had to be passed as a parameter, as we wanted to ensure the user could not interact with the game during a popup. Similarly, the movePlayer method in the MovementGameMode classes and interact method in InteractBehavior have a couple new parameters to aid in implementing the various game modes and object types respectively. We wanted to make the game more visually engaging, and so we used AI to change the images of the objects and rooms.

Regarding the AdventureGamePath class, there were significant similarities between the Distance (corresponding to the Journey button) and the Displacement (corresponding to the Progress button) and not enough similarities to render two independent classes. Instead, Displacement is implemented to have its content extracted from the AdventureGamePath of the player; thus, Displacement and Distance are merged into AdventureGamePath. This greatly reduces redundancies in our codebase while still upholding SOLID design principles.

Other minor changes included making abstractions to the Publisher class, and the addition of helper methods for clarity.

Works Cited

AI Tools for game content:

Room and object images generated from simplified versions of their descriptions.
    DeepAI. Novermber 2023. https://deepai.org/machine-learning-
    model/surreal-graphics-generator
Some NPC dialogues produced from basic prompts about game context.
    ChatGPT3.5. Novermber 2023. https://chat.openai.com/
NPC audio produced from the dialogue texts. PlayHT. November 2023.
    https://play.ht/studio/files