FINAL Project Report

Created 2023.12.01

Project Name

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GitLab Repository:

https://mcsscm.utm.utoronto.ca/csc207_20239/group70

Project Demo:

https://drive.google.com/drive/folders/1G5l6qApXXiWLuV1q0XHiAsBpEtXAoPqR?usp=sharing

https://clipchamp.com/watch/w6PgidacEsE

SECTION 1: REPORT SUMMARY

This project is an advanced version of the Adventure Game we did in this course. We added new features and kept our design proposal. We made several changes to the UMLs during production and selected the most important user stories to finish this project. The scope of the project hasn't changed mostly but some user stories have been deducted. General features like NPCs, Shop, and Minigames have been implemented but more minor priorities of the proposal like achievement badges and mouse click options have been canceled during the production process due to other implementations and their importance to the project goal.

SECTION 2: PROCESS DOCUMENTATION

2.1. SPRINT 1 (Nov 9 - Nov 14)

2.1.1 Sprint Overview:

" Our goal for this sprint is to write all skeleton codes for the entire AdventureGame without implementing specific methods."

2.1.2 Stories Selected for this Sprint:

Amas Tam [User story 1.1] - As a developer, I want to have different views so that it can accommodate the accessibility specific and the general public. [Modified]

Alan Chan [User story 1.3] - As a developer, I want to create an NPC interface so that I could add specific types of NPCs that implement the interface to the main game. The skeleton of the shop class was also created (early stage of User Story 3.2), as it was related to the ShopOwner NPC.

Ariunzaya Bartsadgui (Astryd) [User story 1.4] - As a developer, I want to change the AdventureObject class to an interface so that I could have different types of objects (i.e. KeyObject, MiniGameObject) that implement the interface.[Modified]

Zizhen (Cici) Zhan [User story 1.2]- As a developer, I want to modify the Troll interface into a MiniGame abstract class so that I can have different specific minigames that extend from the abstract class.

2.1.3 Team Capacity:

"We expect to finish the basic implementations of our chosen user stories by November 14"

2.1.4 Participants:

Amas Tam - Responsible for completing User Story 1.1, creating User story branch, and merge requests. Check Zizhen's merge request

Alan Chan - Responsible for completing User story 1.3, creating User story branch, and merge request. Check Ariunzaya's merge request

Ariunzaya Bartsadgui (Astryd)-Responsible for completing User story 1.4, creating User story branch and merge request. Check Alan's merge request

Zizhen (Cici) Zhan - Responsible for completing User story 1.2, creating User story branch, and merge request. Check Amas's merge request and approve finished implementations.

2.1.5 Tasks Completed:

By the end of this sprint, the general architecture of the game has been created. The basic interfaces, abstract classes, and concrete classes were created without further implementation of the method. All necessary documentation has been included. The following classes and interfaces have been initiated:

- MiniGame.java (Interface for all minigames, following factory design pattern)
- PuzzleGame.java (Concrete class for MiniGame interface)
- ReactionGame.java (Concrete class for MiniGame interface)
- TriviaGame.java (Concrete class for MiniGame interface)
- AdventureGame (getAccessibility, toggleAccessibility methods have been implemented and their test in BasicAdventureTest)
- NPC (Interface for all non- playable characters found in the game)
- HintGiver.java (A class that contains info about hint giving NPC, user story 1.3)
- ItemGiver.java (A class that contains info about item giving NPC, user story 1.3)

- Player.java(getMoneyAmount, removeMoney, addMoney, addHints methods added)
- Shop.java (A class that have all info about shop)
- ShopOwner.java (A class that have shop owner NPC)
- AdventureObjects package(a package that contains all objects and related classes)
- KeyObject.java, KeyObjects.txt (Concrete decorated class for keyObjects of the game and its text file)
- MiniGameObject.java, MiniGameObjects.txt (Concrete decorated class for MiniGameObjects of the game and its text file)
- MiniGameObject.java, MiniGameObjects.txt (Concrete decorated class for MiniGameObjects of the game and its text file)
- ShopObject.java, ShopObjects.txt (Concrete decorated class for ShopObjects of the game and its text file)
- SpecialObject.java, Specialbjects.txt (Concrete decorated class for SpecialObjects of the game and its text file)
- ObjectDecorator.java(Abstract class for concrete classes)

2.1.6 SPRINT 1 PRODUCT BACKLOG

[User story 1.1] - As a developer, I want to have different views so that it can accommodate the accessibility specific and the general public. [Modified]

[User story 1.2]- As a developer, I want to modify the Troll interface into a MiniGame abstract class so that I could have different specific minigames that extend from the abstract class.

[User story 1.3] - As a developer, I want to create an NPC interface so that I could add specific types of NPCs that implement the interface to the main game.

[User story 1.4] -As a developer, I want to change the AdventureObject class to an interface so that I could have different types of objects that implement the interface.

2.1.7 SPRINT 1 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
[User story 1.1] - As a developer, I want to have different views so that it can accommodate the accessibility specific and the general public. [Modified]	Zizhen (Cici) Zhan	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/6
[User story 1.2]- As a developer, I want to modify the Troll interface into a MiniGame abstract class so that I could have different specific minigames that extend from the abstract class.	Alan Chun Lok Chan	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/7
[User story 1.3] - As a developer, I want to create an NPC interface so that I could add specific types of NPCs that implement the interface to the main game.	Ariunzaya Bartsadgui	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/9#b0817fd50cc3854dc23a280f63dd982c2ca62d29
[User story 1.4] - As a developer, I want to change the AdventureObject class to an interface so that I could have different types of objects (i.e. KeyObject, MiniGameObject) that implement the interface.[Modified]	Amas Tam	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/3

2.1.8 SPRINT 1 RETROSPECTIVE

The Sprint 1 wrap-up meeting happened on Nov 14th, 2023 during lecture time. All team members were involved and pushed their merge requests and did the code reviews for each team member's requests. Creating merge requests and branching out has been accomplished and is ready to be well-practiced through any further sprints. Due to the implementation of NPC and MiniGame interfaces, the Adventure Object class needs further modification which will be customized through future sprints. During merge requests, the BasicTest.java file didn't properly run due to some operating system-specific files pushed to the Development branch. Thus, we resolved this issue during the meeting. We decided to work on further implementation of the classes we created during this sprint and work on further user stories.

2.2. SPRINT 2 (Nov 14 - Nov 21)

2.2.1 Sprint Overview:

" Our goal for this sprint is to implement further methods more specifically on NPCs, shop, and finalize game storyboard"

2.2.2 Stories Selected for this Sprint.

Amas Tam [User story 3.2] - As a player, I want there to be a shop owner/merchant within the game so that I can purchase objects/materials to help me win the game.

Alan Chan [User story 1.3] - As a developer, I want to create an NPC interface so that I could add specific types of NPCs that implement the interface to the main game. Changes were made for it to adhere to the Strategy Design Pattern.

Ariunzaya Bartsadgui (Astryd) [User story 2.2] - As a visually impaired player, I can choose accessibility mode at the beginning of the game so that I can progress the game without trouble.[remodified back to its original form after this sprint]

Zizhen (Cici) Zhan [User story 2.3]- As a player, I want to be able to interact with other characters within the game so that I can receive hints and objects about the game.

2.2.3 Team Capacity:

"We expect to work on further implementation of methods in each class and prepare each class for integration, debugging, and finalizing by Nov 21"

2.2.4 Participants:

Amas Tam - Responsible for completing User story 3.2, implementing methods in Shop.java according to Observable design pattern, making necessary changes to MiniGameObject, and writing its test cases.

Alan Chan - Responsible for completing User Story 1.3, and implementing NPC interface-related methods with its associated class changes.

Ariunzaya Bartsadgui (Astryd)-Responsible for completing User Story 2.2, implementing the Accessibility View class, and associated changes to AdventureGameApp.

Zizhen (Cici) Zhan - Responsible for completing User story 2.3, making changes to fundamental Adventure Game classes according to the game storyboard.

2.2.5 Tasks Completed:

By the end of this sprint, we wrote all necessary methods for each class except MiniGame trolls without debugging or integrating. All necessary documentation has been provided. The following classes have been implemented and modified:

- AdventureGame.java
- AdventureLoader.java
- AdventureObject package entirely
- Player.java
- Room.java
- AdventureGameView.java
- **ALL** .txt files
- AccesibilityView.java
- AdventureGameApp.java
- **ALL** NPC interface-related classes
- **ALL** Shop related classes
- BasicAdventureTest.java

2.2.6 SPRINT 2 PRODUCT BACKLOG

We worked on our selected user stories.

[User story 3.2] - As a player, I want there to be a shop owner/merchant within the game so that I can purchase objects/materials to help me win the game.

[User story 1.3] - As a developer, I want to create an NPC interface so that I could add specific types of NPCs that implement the interface to the main game.

[User story 2.2] - As a visually impaired player, I can choose accessibility mode at the beginning of the game so that I can progress the game without trouble.[Modified]

[User story 2.3]- As a player, I want to be able to interact with other characters within the game so that I can receive hints and objects about the game.

2.2.7 SPRINT 2 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
[User story 3.2] - As a player, I want there to be a shop owner/merchant within the game so that I can purchase objects/materials to help me win the game.	Ariunzaya Bartsadgui	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/13/diffs
[User story 1.3] - As a developer, I want to create an NPC interface so that I could add specific types of NPCs that implement the interface to the main game	Zizhen Zhan	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/12
[User story 2.2] - As a visually impaired player, I can choose accessibility mode at the beginning of the game so that I can progress the game without trouble.[Modified]	Amas Tam	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/15

[User story 2.3]- As a player, I want to be able to interact with other characters within the game so that I can receive hints and objects about the game.	Alan Chan	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/10

2.2.8 SPRINT 2 RETROSPECTIVE

In this sprint, we wrote the game mainly and finalized our game storyboard. Our meeting was held on Nov 21st after the lecture with all team members. During the meeting, we discussed each other's work and what was needed to finish our project. Accessibility and Minigame remain big tasks to work on for the next sprint alongside integration-related further changes to all other classes. Documentation of methods plays a significant role in this sprint as we are working as a team on each other's work. After a discussion on Accessibility, we decided to follow our original user story and our game storyboard was one thing that we accomplished as it triggered many further changes to our existing codes.

2.3. SPRINT 3 OVERVIEW (Nov 21 - Dec 1)

2.3.1 Sprint Overview

"Our goal for this sprint is to implement Minigames and Accessibility and start integrating our independent implementations and modify the Development branch."

2.3.2 Stories Selected for this Sprint:

Amas Tam [User story 2.1] - As a visually impaired user, I can change the text size in the settings to see the text according to my needs.

Alan Chan [User story 3.2] - As a player, I want to be able to interact with other characters within the game so that I can receive hints and objects about the game. Changes were made so that the NPCs can be interacting with using text input.

Alan Chan [User story 3.2] - As a player, I want there to be a shop owner/merchant within the game so that I can purchase objects/materials to help me win the game.

Ariunzaya Bartsadgui (Astryd) [User story 2.4] - As an English student, I want to be able to play minigames that are trivia-based like Jeopardy so that I can enhance my academic skills even when I am gaming and advance to the next room.[Modified]

Zizhen (Cici) Zhan [User story 3.1]- As a player, I want to be able to play a timed minigame that requires me to click on a number that pops up within a certain amount of time. [Modified]

Zizhen (Cici) Zhan [User story 2.4]- As an English student, I want to be able to play minigames that are trivia-based like Jeopardy so that I can enhance my academic skills even when I am gaming and advance to next room.[Modified]

2.3.3 Team Capacity:

"We expect to finish 90% of the coding tasks of this project by the end of this print excluding minor changes and small debugging."

2.3.4 Participants:

Amas Tam - Responsible for User Story 2.1, modifying AdventureGame for accessibility

Alan Chan - Finishing NPC and shop-related classes and methods

Ariunzaya Bartsadgui (Astryd)- Write TriviaGame for Zizhen to finish

Zizhen (Cici) Zhan - Adjust Minigame class according to factory design pattern and finish MiniGame concrete implementation.

2.3.5 Tasks Completed:

In this sprint, we wrap up all coding tasks and readjust our implementations according to design patterns. All necessary coding has been finalized with changes to the following classes and interfaces:

- AdventureGame.java (Accessibility changes, shop-related changes)
- AdventureGameView.java (Accessibility changes)
- LoadView.java, SaveView.java,AdventureGameApp.java (Accessibility changes)
- Additional .txt files
- AdventureLoader.java (shop related changes)
- HintGiver.java, ItemGiver.java NPC.java Observer.java (NPC related changes)
- Shop.java, PLayer.java, ShopIteract.java, ShopOwner.java (Shop related changes)

- EnglishTrivia.java, EnglishTriviaModel.java, EnglishTriviaView.java (Minigame)
- MiniGame.java, MiniGameFactory.java, PuzzleGAme.java, ReactionGame.java (MiniGame related changes)
- Text to speech accessibility changes

2.3.6 SPRINT 3 PRODUCT BACKLOG

[User story 2.1] - As a visually impaired user, I can change the text size in the settings to see the text according to my needs.

[User story 2.3] - As a player, I want to be able to interact with other characters within the game so that I can receive hints and objects about the game. Changes were made so that the NPCs can be interacting with using text input.

[User Story 3.2] As a player, I want there to be a shop owner/merchant within the game so that I can purchase objects/materials to help me win the game

[User Story 2.4] As an English student, I want to be able to play minigames that are trivia-based like Jeopardy so that I can enhance my academic skills even when I am gaming and advance to the next room.[Modified]

[User Story 3.1] - As a player, I want to be able to play a timed minigame that requires me to click on a number that pops up within a certain amount of time. [Modified]

2.3.7 SPRINT 3 CODE REVIEWS

Story Reviewed	**Name of Reviewer**	**Pull Request Link**
[User story 2.1] - As a visually impaired user, I can change the text size in the settings to see the text according to my needs.	Alan Chan	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/18

[User story 2.3] - As a player, I want to be able to interact with other characters within the game so that I can receive hints and objects about the game. Changes were made so that the NPCs can be interacting with using text input..	Zizhen Zhen	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/19
[User Story 3.2] As a player, I want there to be a shop owner/merchant within the game so that I can purchase objects/materials to help me win the game	Ariunzaya Bartsadgui	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/19
[User Story 2.4] As an English student, I want to be able to play minigames that are trivia-based like Jeopardy so that I can enhance my academic skills even when I am gaming and advance to the next room.[Modified]	Amas Tam	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/20 https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/15
[User Story 3.1] - As a player, I want to be able to play a timed minigame that requires me to click on a number that pops up within a certain amount of time. [Modified]	Amas Tam	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/20

2.3.8 SPRINT 3 RETROSPECTIVE

By the end of this sprint, we finished any implementations or code documentation needed for finishing this project. All participants attended the meetings on Nov 29

and Dec 1 in-person. We expect to finish accepting merge requests and record the demo in the next sprint. Furthermore, wrapping up the project, writing the project report, and revisiting the design proposal. Meetings were necessary for us to discuss what we have been doing during this phase as everyone had unique schedules of their own, and in-person meetings helped us to connect our work and solve each other's struggles. Our best practice was to not only work on classes that we initiated but also work on different classes and patterns our peers have written, which enabled us to correct any minor mistakes we originally didn't see

2.4. SPRINT 4 OVERVIEW (Dec 2 - Dec 5)

2.4.1 Sprint Overview:

"Our goal for this sprint is to finish the project"

2.4.2 Stories Selected for this Sprint:

Amas Tam [User story 1.4] -As a developer, I want to change the AdventureObject class to an interface so that I could have different types of objects (i.e. KeyObject, MiniGameObject) that implement the interface.[Modified]

Amas Tam, Alan Chan [User Story 3.2] As a player, I want there to be a shop owner/merchant within the game so that I can purchase objects/materials to help me win the game

Zizhen Zhan [User Story 3.4] As a visually impaired player, I want the ReactionGame and EnglishTriviaGame to be read aloud to me so it is accessible like the main game. [Added after suggestions from TA]

2.4.3 Team Capacity:

We expect to finish the project by Dec 05 including final touches like, testing the whole game, finishing accessibility-related user stories, adding necessary images, and completing the design proposal and project report.

2.4.4 Participants:

Amas Tam - Responsible for completing and finishing the project demo, completing user story 3.4, and adjusting the design proposal.

Alan Chan - Responsible for completing and finishing the project demo, completing user story 1.4, and adjusting Adventure Object implementation and UML regards to Decorator design pattern.

Ariunzaya Bartsadgui (Astryd)- Responsible for completing and finishing the project demo, adjusting the design proposal, and submitting the project report & finished design proposal

Zizhen (Cici) Zhan - Responsible for completing and finishing the project demo, adjusting the design proposal, modifying MiniGame into a factory design pattern, as well as MiniGame integration into the main game. Adjusting all merge requests.

2.4.5 Tasks Completed:

We finished our project, submitted the project demo, pushed it to the main branch and submitted all .pdf files necessary. The following tasks have been modified and finished:

- The development branch has been finalized and pushed to the main branch
- User Story 1.4 has been finalized
- User Story 3.4 has been finalized
- Necessary .png files have been added
- Project demo has been recorded and sent
- Design Proposal modified
- Project report finished

2.4.6 SPRINT 4 PRODUCT BACKLOG

[User Story 3.4] As a visually impaired player, I want the ReactionGame and EnglishTriviaGame to be read aloud to me so it is accessible like the main game. [Added after suggestions from TA]

[User story 1.4] -As a developer, I want to change the AdventureObject class to an interface so that I could have different types of objects (i.e. KeyObject, MiniGameObject) that implement the interface.[Modified]

[User Story 3.2] As a player, I want there to be a shop owner/merchant within the game so that I can purchase objects/materials to help me win the game

[User story 3.3]As a visually impaired user, I can change the text size in the settings to see the text clearly according to my needs.

2.4.7 SPRINT 4 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
[User story 1.4] -As a developer, I want to change the AdventureObject class to an interface so that I could have different types of objects (i.e. KeyObject, MiniGameObject) that implement the interface.[Modified]	Ariunzaya Bartsadgui	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/18
[User story 3.3]As a visually impaired user, I can change the text size in the settings to see the text clearly according to my needs.	Zizhen Zhen	https://mcsscm.utm.utoronto.ca/csc207_20239/group_70/-/merge_requests/22

2.4.8 SPRINT 4 RETROSPECTIVE

We had two meetings with all participants during this sprint on Dec 4th via Discord and Dec 5th in-person. First meeting, we modified design proposals, finalized our user stories, and added user story 3.4. At the last meeting, we recorded our demo and pushed our finished Adventure Game to the main branch. Writing the project report, we reflected on what we have done so far during the project phase and revisited our works for polishing the project. The difficulty was arranging our time for meetings as most of the members were within finals. Still, our best practice during this sprint was finishing everything and wrapping up every single aspect of this project altogether.

SECTION 3: SUMMARY

Our project is the advanced version of the Adventure game we did in this course with new features including NPCs, Shop, and Minigames.
We adjusted our Design proposal and selected the most important user stories to continue. Approximately 80 percent of the design proposal hasn't changed but rather modified more specifically after feedback from phase 1. However, our UML has to be modified after implementation. Our design pattern has been changed several times during the project mainly because of the pattern's efficiency when it comes to working with different patterns and files. When we were writing our phase 1, we didn't give much thought to how all our UMLs contribute to the entire implementation of the game but rather what pattern works best for certain types of objectives of this game. So, we modified our UMLs in our design proposals. Our limitations are mainly team size and timing. The progress of coding has been extended due to either level of difficulty but also the inability to ask for help – we couldn't have much help on our codes from some TAs due to what we were doing was beyond the scope of the class –. So, during sprints 2 and 3, we depended on ourselves which is in fact our biggest accomplishment as a team. Overall, our product was satisfying the original design proposal, excluding some minor changes.