FINAL Project Report

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GitLab Repository:

https://mcsscm.utm.utoronto.ca/csc207_20239/group_42

Demo Recording:

https://drive.google.com/file/d/1tOTcNVIE64tHyf8PMrol9KLD1u4F0jur/view?usp=sharing

Slide Show:

https://docs.google.com/presentation/d/1-wjXRY9V5b18LtSkxX4_wtPEGuWfbe7skAnMP_-f2MI/edit?usp=sharing

SECTION 1: REPORT SUMMARY

The initial scope of this project, as outlined in our project report, encompassed the following key elements:

Objective: Our goal is to create an escape room game that is inclusive for all and provides an immersive and engaging game experience and fosters problem-solving and critical thinking skills for players.

Features and Functionalities:

- We aimed to create an escape room game that has four different rooms with different themes (crime, prison, future, and zombie).
- Design Save/ Load Game functionalities
- Integrate timer, restart, and reset game features
- The player needs to click on the clue objects and play 4 mini games (crime, prison, future and zombie themes) to pass through to the next room.
- Include Audio description, room description, room images, and motor control for inclusivity and accessibility of users.

Additions:

- Adding new user stories numbered 22, 23, 24, and 25 that include features such as View MiniGame Clue Answer that enhances player's experience

Exclusion:

- Exclude user stories numbered 3, 9, 11, 12, 21 to prioritize other important user stories.

Refinement:

- Combine user stories Room Images(4) and Room Description(5).
- Adding new branch such as Instruction(16) to resolve any merge conflict

Rationale:

The decision to add additional user stories to eliminate some of our less-priority user stories is due to time constraints. This ensures our game can be finished and has the most important features in a short amount of time.

Impact:

The addition of new user stories greatly improves our user interface and game functionality, enhancing the user experience. Furthermore, the removal of some user stories also simplifies the project, ensuring our game can be finished on time and meet the user's expectations.

SECTION 2: PROCESS DOCUMENTATION

2.1. SPRINT 1 OVERVIEW

2.1.1 Sprint Overview:
 Our sprint 1 starts from **November 10th** to **November 17th**. The goal for this sprint is to finalize the implementation of functionalities such as saving and loading the game, getting started with the button and timer features, and finding the room images.

2.1.2 Stories Selected for this Sprint:
User stories numbered 1, 2, 7, 14, 22

2.1.3 Team Capacity:

We expect to be able to complete at least four user stories by Friday, November 15th, and merge our feature branches on Sunday, November 17th.

2.1.4 Participants:

Angela: Finish user stories SaveView(1) and LoadView(2) and write project report

Taha: Design the implementation of the user story Timer(17) and find room images

Farah: Finish user story ExitButton(14) and finding room images

Fauzan: Finish user story KeyBoard(7) and find clueObject images

2.1.5 Tasks Completed:

- Finished the user stories SaveView(1), LoadView(2), exitButton(14)(not merged yet)
- Created a new branch called SaveFolder, and found all room images.

2.2. SPRINT 1 PRODUCT BACKLOG

- SaveView(1): As a user, I want to be able to save games so that I have the option to go back to the specific game state at any time.
- LoadView(2): As a user, I want to be able to load the game so that I can return to the specific game state that I want.

- ExitButton(14): As a user, I want to be able to find a button so that I can end the game at any time (emergency exit).

- KeyBoard(7): Given I am a player, When I am prompted to press ENTER or TAB, the game registers my keys and does the action required. Then, I navigate/go to other rooms

- Timer(17): As a user, I want to be able to see the remaining time left to escape all 4 rooms so that I can manage my time and avoid losing the game.

- Save Folders (22): As a user, I want to be able to see the images and descriptions of the room so that I know which room I am in.

2.3. SPRINT 1 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
SaveView(1)	Taha, Fauzan	**https://mcsscm.utm.utoronto.ca/ csc207_20239/group_42/-/merge _requests/7**
LoadView(2)	Farah	**https://mcsscm.utm.utoronto.ca/ csc207_20239/group_42/-/merge _requests/4**
Save Folder (22)	Angela	**https://mcsscm.utm.utoronto.ca/ csc207_20239/group_42/-/merge _requests/4**

2.4 SPRINT 1 RETROSPECTIVE

Participants: Angela, Taza, Farah, and Fauzan

Unfinished Task:
-   Need to merge user story KeyBoard(7) + ExitButton(14)
-   Find images for our ClueObjects

Modification:
-   Add new user story Save Folders (22)

Success to Continue:
We regularly share insights and knowledge during the sprint review meetings and have a clear and collaborative task breakdown.

New/Revised Practice Moving Forward:

We should place more emphasis on documenting our code, so we know what changes are made on our project within our team. In addition, to avoid merge conflicts, it is necessary to not include XML, .DS_Store files in our feature branches.

Best Experience:

The effective communication between the team ensured that everyone was on the same page regarding the project goals and individual priorities.

Worst Experience:

Our team experienced challenges that are related to git merge conflicts due to different XML files and project configuration files.

2.1. SPRINT 2 OVERVIEW

2.1.1 Sprint Overview:

Our sprint 2 starts from **November 17th** to **November 24th**. The goal for this sprint is to finalize the implementation of the UI features of games such as incorporating the timer, game buttons, and room imageView. We also want to get started with designing the implementation of the audio components of our game.

2.1.2 Stories Selected for this Sprint:

User stories numbered 4, 14, 15, 17, 18

2.1.3 Team Capacity:

We expect to be able to complete at least four user stories and create all the necessary audio files by Friday, November 24th, and merge our feature branches to the Develop branch on Saturday, November 25th.

2.1.4 Participants:

Angela: Finish user story Display Possible Place + Images (4), write a project report, and fix UML diagrams

Taha: Finish user stories Timer(17) and design Audio Time(18)

Farah: Finish the user stories Restart Button(15) and Exit Button(14)

Fauzan: Finding the clue object Images, and writing project report

2.1.5 Tasks Completed:

- Finished user stories Display Possible Place + Images(4), Exit Button(14), Restart Button(15), Timer(17)
- Finish project report for section Sprint 1
- Finalized all images for the Clue Objects
- Fixed three UML diagrams

2.2. SPRINT 2 PRODUCT BACKLOG

Room Images + Descriptive Text (4): As a deaf player, I should be able to see the images and descriptions of the room so that I will know which room I am in.

Exit Button(14): As a user, I want to be able to find a button so that I can end the game at any time (emergency exit).

Restart Button(15): As a user, I want to be able to find a button so that I can restart the game.

<u>Time(17):</u> As a user, I want to be able to see the remaining time left to escape all 4 rooms so that I can manage my time and avoid losing the game.

<u>Audio Hint (18):</u> As a non-sighted user, I want to be able to listen to a warning every 10 minutes reminding me how much time I have left to escape so that I can manage my time and avoid losing the game.

2.3. SPRINT 2 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
Room Description + Images (4)	Taha	**https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/17**
Restart Button + Exit Button (14 + 15)	Angela, Fauzan	**https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/20**
Timer (17)	Farah	**https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/tree/Time(17)?ref_type=heads**
Saved-Folder (22)	Angela	**https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/23**

2.4 SPRINT 2 RETROSPECTIVE

Participants: Angela, Taha, Farah, and Fauzan

Unfinished Task:
- Need to finish user story AudioTime (18)
- Need to create all audio files related to the game, and merge them to the Save-Folders feature branch.

Modification:
- Create a new branch called Saved-Folder (22) from the Save Folder branch due to merge conflicts.
- Eliminate user story Display Possible Places (3)
- Modify Singleton Pattern, Command Pattern, and MVC UML

Success to Continue:

We establish a clear communication channel within the team and regularly communicate about the changes, challenges and new ideas about the project.

New/Revised Practice Moving Forward:

To increase efficiency and productivity, we should set clear responsibilities outlined on Google Docs for each week. We should also encourage each other to give honest feedback, so we can make continuous improvements on our projects.

Best Experience:

Our team proactively helped each other to resolve any problems that were related to code implementation or git merge issues. Our team fosters a collaborative and inclusive culture.

Worst Experience:

Our project lacked effective project management practices. Our timeline was not consistently monitored, which led to delays and missed deadlines for completing our user stories.

2.1. SPRINT 3 OVERVIEW

Our sprint 3 starts from **November 24th** to **December 2nd** with a goal of finishing all high priority user stories.

2.1.2 Stories Selected for this Sprint:
User stories numbered 6, 14, 17, 18, 19, 23, 24, 25

2.1.3 Team Capacity:
We expect to be able to finish all user stories by Friday, December 1st and fix the Design Document by Saturday, December 2nd.

2.1.4 Participants:
Angela: Finish Room Description Audio (6), integrate design patterns into code (strategy + singleton), sprint report, revise UML

Taha: Finish AudioHint(18) and Hint (19), fix timer + button issues and code comments, implement new user stories (23, 24, 25).

Farah: Fix Restart Button, add a visual exit button, finish InventoryAudio(13), write sprint report + revise UML

Fauzan: Finish user stories Clues(10), playMiniGame(8), revise code comments + user stories

2.1.5 Tasks Completed:

- Creating InventoryAudio(13) + Instruction (16) to fix issues related to our features
- Finished user stories numbered 6, 14, 17, 18, 19, 23, 24, 25
- Integrate design patterns to the code and fixed UML diagram
- Re-structured the mini-game interface + revise strategy pattern

2.2. SPRINT 3 PRODUCT BACKLOG

AudioHint(18): As a blind user, I want to be able to listen to a hint if I am stuck guessing the password so that I can move on to the next room.

Room Description Audio(6): As a non-sighted player, I should be able to hear all of the information about the room so that I will be able to play the game.

Hint(19): As a non-sighted screen reader user, I want to be able to hear a hint if I am stuck guessing the password so that I can move on to the next room.

InventoryAudio(13): As a non-sighted user, I want to hear the description of the clues in my inventory so that I can put the clues together to guess a password.

Clues(10): As a user, I should be able to look at objects/clues in the room which can help me formulate a password so that I can move forward by going to the next room.

PlayMiniGame(8): As a user, I want to play the puzzles available in each room so that I can access the clues of the room.

Guess Password (23): As a user, I want to be able to guess the password for the current room so that I can continue escaping all of the rooms to win the game.

Display Victory (24): As a user, I want to be able to be notified when I have won the game so that I can celebrate and conclude the experience on a high note.

View MiniGame Clue Answer (25): As a user, I want to be able to review the answers to the mini-game clues so that I can correctly guess the password for the current room.

2.3. SPRINT 3 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
Save-Folder (22) (Adding addition audio files)	Taha	**https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/23**
Room Description Audio(6)	Taha	**https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/24**
Hint(19) + new user stories 23, 24, 25	Angela, Fauzan	**https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/27**
Instruction(16) - AudioHint	Angela, Farah	**https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/26**
Inventory Audio (13)	Taha, Fauzan	**https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/28**
AdventureGameControllerClass	Angela	https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/31
Clues (10)	Farah	https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/33
PlayMiniGame(8)	Angela	https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/34
Final Changes (For code comments)	Angela, Farah, Fauzan, Taha	https://mcsscm.utm.utoronto.ca/csc207_20239/group_42/-/merge_requests/38

2.4 SPRINT 3 RETROSPECTIVE

Participants: Angela, Taha, Farah, and Fauzan

Unfinished Task:
There were no unfinished tasks.

Modification:
- Added new user stories: Guess Password (23), Display Victory (24), View MiniGame Clue Answer (25).
- Modified Strategy Pattern UML and MiniGame interface implementation.

Success to Continue:
We have regular calls and consistent check-ins and encourage a supportive environment with collaborative problem-solving.

New/Revised Practice Moving Forward:
Detailed task assignments to avoid overlaps and ensure each member contributes effectively.

Best Experience:
We are open and comfortable sharing ideas and thoughts without judgment.

Worst Experience:
We have difficulty in scheduling calls due to busy and conflicting schedules.

Accomplishment:

The accomplishment of our project is that we were able to integrate additional user interface features, and inclusivity features and create new user stories that enhance our whole game experience. In our game, we implement essential UI features such as the hint button, exit button, restart button, and timer that informs the time that is left for the player to escape the room.

We also incorporate accessibility features such as clue object description with images, audio room description, audio hint features, and motor control accessibility, catering to both visually impaired and hearing-impaired players. Lastly, we added new user stories such as GuessPassword(24) and View MiniGameClueAnswer(26), contributing to a more immersive and enjoyable gaming experience.

Changes/ Limitation:

In pursuit of a more flexible code implementation, we refine our strategy pattern UML. Instead of having 3 different classes, which are easyMiniGame, hardMiniGame and mediumMiniGame, implement prisonMiniGame, crimeMiniGame, zombieMiniGame, and futureMiniGame. Due to time constraints, we removed a lot of lower-priority user stories such as Display Possible Place(3) and changed backgroundColor(21) to prioritize high-impact features. We also removed other user stories such as Knowledge(11) and Inventory(12) because we realize they aren't useful features for the players. Instead, we focus on the construction of more essential user stories such as View MiniGameClueAnswer(26) which allows the user to view the current clue answer that they have and allows them to go to the next room.

Overall Summary:

In summary, this project underscores the agile development approach in software development. Through refinement of our user stories and strategic decision-making,

we have achieved a successful end product. Upon reflection, we take pride in the team's collaboration and adaptability, resulting in an innovative escape room game that is inclusive for all players.