

FINAL Project Report

Created 2023.11.13

Project Name

Sheryl Buttar

Ali Zaeri

Alexander Voidoc

Jayant Arora

Final Video:

<https://youtu.be/NTNzFGW1Y0E>

SECTION 1: REPORT SUMMARY

This project is dedicated to designing an adventurous game with educational aspects that ensures a fun, enriching experience for children and students. At Castaway Chronicles, our aim is to cater to a diverse group of learners, including the visually impaired, students with ADHD and special-education students. Students with special learning needs and attention-deficit disorders often struggle to stay engaged in their learning and thereby require more creative teaching techniques that are thoughtfully designed to accommodate their learning styles, empowering and encouraging them to thrive in their educational journey. We intend to improve the previous assignments from the course by expanding upon the existing templates and incorporating additional functionalities. Through the completion of mini-games and challenges, centered around educational and recreational games, kids will be driven to learn on their own with Castaway Chronicles. This will allow them to win the game and collect coins. With this approach, the team at Castaway Chronicles aspires to make a meaningful impact in the lives of children that face difficulties in mastering foundational skills.

SECTION 2: PROCESS DOCUMENTATION

2.1. SPRINT 1 OVERVIEW

2.1.1 Sprint Overview:

Our goal for this sprint is to establish the base functionality for every fundamental aspect of the game including, the grid, the player, navigation, and minigames.

Start: November 12, 2023

End: November 19, 2023

2.1.2 Stories Selected for this Sprint:

List the user stories selected for the sprints and the owners of these stories.

Make note of any updates or changes to user stories that made during this sprint.

Name	ID	Owner	Description	Implementation Details	Priority	Effort
Randomly Generated Grid	1.6	Alex	As a player, I want there to be a grid of cells that I can navigate through with some cells having random islands on them.	Create a class that stores all of the cells for the grid. These cells may randomly have an island assigned to them so that when the player goes over this grid cell, they would enter that island. All randomly generated.	1	3
Procedural Generation of more grids	1.7	Alex	As a player, I want to be able to move off the current grid into another newly generated grid and be able to move back and forth between an unlimited amount of grids.	Have a controller that stores a position mapping for the different grids for memory when returning back to the grid. Everytime the player tries to move off the current grid, either make a new one or load a previously created one.	2	2
Navigating through islands within the grid	1.8	Ali	As a player, I want to be able to easily select from a list or grid of available islands so I can navigate to them and explore the available options from that destination.	Implement a dropdown list or a list of buttons available on a grid, and implement a navigation method, changing the player's location to the destination and triggering any entrance cues.	1	2
Location indication	1.5	Ali	As a player, I want a clear indicator of my current location on the grid, so that I can easily plan my route and make informed decisions about where to go.	Implement a location indicator on the user interface, providing real-time updates on the player's current island or grid cell with audio and visual cues.	2	2

Lives Left	1.1	Jayant	As a player, I want to keep track of my remaining lives so that I know how many more chances I have to complete games.	Create an attribute associated with the player's file that decrements by 1 every time the player loses a life, display on user screen	1	1
Set Name	1.2	Jayant	As a player, I want the option to set my player name so that I can have a personalized gaming experience.	Create a rename function associated with the player class to change the player's name that is displayed	3	1
Diverse Games	4.3	Sheryl	As a player, each time I arrive on an island I want to have the option of playing new, and a variety of mini-games, educational and adventurous, to keep the experience exciting.	Implement a randomizer to generate different pre-assigned games and play styles based on the island that the player is currently visiting. Each island would be a separate class and mini-games	1	3
Instructions	1.3	Sheryl	As a player, I want to know the specific rules/goals for each activity on each island so that I can fully understand the game I am playing and increase my chances of winning.	Create an instructions pop-up that is displayed before the start of each mini-game with short, yet understandable rules and guidelines for the game.	1	2

2.1.3 Team Capacity:

We expect to be able to complete the base components of the game by Friday, November 19. On Friday, November 19, to conclude the sprint, the team will conduct code reviews in-person together as well as plan for the next sprint.

2.1.4 Participants:

Alex:

- Develop the initial grid and try to get it to be infinite
- Implement sprint 1 user stories, shown in overview (2.1.2)

Ali:

- Work on implementing movement in grid with player icon
- Implement sprint 1 user stories, shown in overview (2.1.2)

Sheryl:

- Talk to Sid about different accessibility needs
- Update user stories based on feedback, discuss with team what is required and make changes in UML
- Implement sprint 1 user stories, shown in overview (2.1.2)

Jayant:

- Research how to make learning engaging for ADHD, special needs students
- Implement sprint 1 user stories, shown in overview (2.1.2)
- Work with team to see how our different components would come together (make a base player and class that we will all work off of in our respective branches)

2.1.5 Tasks Completed:

- Added .dev branch
- Added .gitignore file
- Setup the branch and git repo cloned on everyone's computer
- User stories from above

2.2. SPRINT 1 PRODUCT BACKLOG

All User Stories:

Name	ID	Owner	Description	Implementation Details	Priority	Effort
Save Game	2.1	Jayant	As a player I want to be able to save my game progress so that I can continue my adventure game later on without losing my progress (coins, lives left, etc.) and game data.	Save game file by saving to serialized binary file	1	3
Lives Left	1.1	Jayant	As a player, I want to keep track of my remaining lives so that I know how many more chances I have to complete games.	Create an attribute associated with the player's file that decrements by 1 every time the player loses a life, display on user screen	1	1
Manage Inventory	3.1	Jayant	As a player, I want to be able to view and manage my inventory so that I can see what items I've collected and if they will be useful on my journey.	Create a list attribute associated with the player that stores all items in player inventory	2	1
Coins Collected	2.2	Jayant	As a player, I want to keep track of the number of coins I've earned, so that I can know how many coins I require to reach the winning amount (500).	Create an integer attribute associated with the player class that increases/decreases depending on the events taking place with the player	2	2
Set Name	1.2	Jayant	As a player, I want the option to set my player name so that I can have a personalized gaming experience.	Create a rename function associated with the player class to change the player's name that is displayed	3	1
Visited	4.1	Jayant	As a player, I want to know if I have visited a particular island already, so that I can focus on exploring new islands as new islands provide maximum rewards.	Create a boolean attribute that starts as false and changes to true once an island has been visited	2	2

Lose Entire Game	4.2	Jayant	As a player, I want the game to end/lose the game after I run out of my 3 lives, so that the game restarts fresh.	If the attribute introduced in "Lives Lost" reaches 0, take the game back to the home page giving the player the option to restart	1	2
Pickup Item	2.3	Jayant	As a player, I want to be able to pick up items available on islands so that I can add them to my personal inventory, this will make them no longer available on the island.	Create a function that picks up an item, adding it to the player's item list and removing it from the items list for the island.	2	1
Drop Item	2.4	Jayant	As a player, when at an island, I want to be able to drop items in my inventory so that my inventory is specific to what I want, the items I drop should then be added to items available on the island I dropped them at.	Create a function that drops an item, removing it from the player's item list and adding it from the items list for the island.	2	1
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Inclusive Learning	4.4	Sheryl	As a player, I would like a certain number of attempts for each mini-game depending on the difficulty level chosen at the start of the game.	Create a predetermined number of tries per game as per the difficulty level chosen by the user and filter mini-games to have a certain number of problems/difficulty accordingly	3	1

Rewards	1.4	Sheryl	As a player, I would want to see additional rewards for completing minigames quickly or precisely, as well as within a set amount of time depending game to game.	Implement a reward system (a certain number of gold coins) per mini-game based on accuracy and time spent on the mini-game	2	1
Penalty	2.5	Sheryl	As a player who loves a challenge, I would like some consequences for losing a mini-game.	In the instructions text, notify a user the consequences of losing a game and in the implementation, predetermine penalties depending on the game and difficulty	2	2
Customize Difficulty	3.2	Sheryl	As a player with a short attention span, I want every island to provide distinct adventurous or educational opportunities with various themes and difficulties.	Create distinct island classes with corresponding mini-game options for each topic and difficulty level as a player progresses through the game	1	2
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Return to Previously Visited Islands	2.6	Ali	As a player, I want the option to retrace my steps and return to islands I've visited before, so that I can improve my performance in the games on those islands and gain additional gold.	Save the previous island after visiting a new one. Add that to the history of each island, and make them accessible using a /back command.	1	1
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Procedural Generation of more grids	1.7	Alex	As a player, I want to be able to move off the current grid into another newly generated grid and be able to move back and forth between an unlimited amount of grids.	Have a controller that stores a position mapping for the different grids for memory when returning back to the grid. Everytime the player tries to move off the current grid, either make a new one or load a previously created one.	2	2
Pirates in open water	2.7	Alex	As a player, I want certain grid cells to have pirate ships that if I run into, will play a minigame to see if I win or lose gold.	Have certain cells randomly designated as pirate cells that if crossed over, will initiate a minigame for gold. If a minigame is won, the pirate will disappear, otherwise the pirate will still exist.	1	2
Pirates moving	2.8	Alex	As a player, I want the pirates to be able to move making it harder to avoid them.	Have pirates make a random move every time the player moves in some direction by moving to a nearby "open" cell or potentially the same cell the player is trying to move to. Pirates cannot move between grids, only within.	2	2
Fog around Unexplored areas	3.6	Alex	As a player, I want there to be fog in the cells I haven't visited that clears and stays clear when I travel near. This way I can see the areas I've already visited.	Give the cells a fog attribute that visually occludes the cell when it's enabled. Disable it once the player gets near allowing them to see whats in the cell if anything.	3	2
Randomly placed hidden and visible obstacles.	3.7	Alex	As a player, I want some cells to be obstacles that must be navigated around or some cells to have hidden traps.	In addition to randomly selecting the cells to have islands, also give them the potential of having hidden traps or an obstacle that the player must go around.	3	3

Different biome types	4.7	Alex	As a player, I want certain grid areas to follow a certain theme and have more of certain types of objects in them and a different appearance.	Randomly select a theme that adjusts the appearance and the random chances of certain cells having certain events.	3	3
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2.3. SPRINT 1 CODE REVIEWS

During this sprint, all code reviews were done in-person, explaining and showing each other code in real life, rather than through the Gitlab system. With that being said, no code review pull request links are available, but the stories reviewed and name of reviewer information is shown below:

Story Reviewed	Name of Reviewer	Pull Request Link
[1.6]: Randomly Generated Grid	Sheryl Buttar	N/A - See message above
[1.5]: Location Indication	Jayant Arora	N/A - See message above
[1.1]: Lives Left	Alex Voidoc	N/A - See message above
[1.2] Set Name	Ali Zaeri	N/A - See message above

2.4 SPRINT 1 RETROSPECTIVE

Participants:

- Alex Voidoc
- Ali Zaeri
- Sheryl Buttar
- Jayant Arora

Unfinished Tasks:

- Didn't finish drawing UI for game on iPad

Summary of Practices that Went Well:

- Daily communication on WhatsApp group chat (keeping track of what everyone is doing, any questions get addressed, etc.)
- Collaborative approach and communication with one other as we all got familiar with the concepts of the game was helpful
- In-person meetings with one group member documenting the important things were helpful

Summary of New or Revised Practices Moving Forward

- Quick online Zoom/phone call meetings are more efficient than conversations on text

Summary of Bad Practices not to be Repeated

- Delay in putting implementations of base classes on GitLab - led to multiple group members naming certain attributes/methods different things, extra confusion.

Best/Worst Experience

- In-person group meeting was very helpful

2.5. SPRINT 2 OVERVIEW

2.5.1 Sprint Overview:

Our goal for this sprint is to complete the back end of the game, and plan out how this would work on the front end. The game should be able to load/save and the

grid should be working as an infinite grid, with pirate and island icons. The islands should also be functional with their games. Basic front end layout (grid, island icons) should also be completed.

Start: November 20, 2023

End: November 29, 2023

2.5.2 Stories Selected for this Sprint:

All changes to user stories during this sprint are shown in the product backlog section of this sprint (2.6)

Name	ID	Owner	Description	Implementation Details	Priority	Effort
Save Game	2.1	Jayant	As a player I want to be able to save my game progress so that I can continue my adventure game later on without losing my progress (coins, lives left, etc.) and game data.	Save game file by saving to serialized binary file	1	3
Coins Collected	2.2	Jayant	As a player, I want to keep track of the number of coins I've earned, so that I can know how many coins I require to reach the winning amount (500).	Create an integer attribute associated with the player class that increases/decreases depending on the events taking place with the player	2	2
Pickup Item	2.3	Jayant	As a player, I want to be able to pick up items available on islands so that I can add them to my personal inventory, this will make them no longer available on the island.	Create a function that picks up an item, adding it to the player's item list and removing it from the items list for the island.	2	1

Drop Item	2.4	Jayant	As a player, when at an island, I want to be able to drop items in my inventory so that my inventory is specific to what I want, the items I drop should then be added to items available on the island I dropped them at.	Create a function that drops an item, removing it from the player's item list and adding it from the items list for the island.	2	1
Rewards	1.4	Sheryl	As a player, I would want to see additional rewards for completing minigames quickly or precisely, as well as within a set amount of time depending game to game.	Implement a reward system (a certain number of gold coins) per mini-game based on accuracy and time spent on the mini-game	2	1
Penalty	2.5	Sheryl	As a player who loves a challenge, I would like some consequences for losing a mini-game.	In the instructions text, notify a user the consequences of losing a game and in the implementation, predetermine penalties depending on the game and difficulty	2	2
Inclusive Learning	4.4	Sheryl	As a player, I would like a certain number of attempts for each mini-game depending on the difficulty level chosen at the start of the game.	Create a predetermined number of tries per game as per the difficulty level chosen by the user and filter mini-games to have a certain number of problems/difficulty accordingly	3	1
Return to Previously Visited Islands	2.6	Ali	As a player, I want the option to retrace my steps and return to islands I've visited before, so that I can improve my performance in the games on those islands and gain additional gold.	Save the previous island after visiting a new one. Add that to the history of each island, and make them accessible using a /back command.	1	1

Pirates in open water	2.7	Alex	As a player, I want certain grid cells to have pirate ships that if I run into, will play a minigame to see if I win or lose gold.	Have certain cells randomly designated as pirate cells that if crossed over, will initiate a minigame for gold. If a minigame is won, the pirate will disappear, otherwise the pirate will still exist.	1	2
Pirates moving	2.8	Alex	As a player, I want the pirates to be able to move making it harder to avoid them.	Have pirates make a random move every time the player moves in some direction by moving to a nearby "open" cell or potentially the same cell the player is trying to move to. Pirates cannot move between grids, only within.	2	2

2.5.3 Team Capacity:

We expect to complete the components above by the end of the sprint (November 29). Then, we will meet in person and discuss what we've finished, what already works, and so on, along with reviewing code and structure for one another. Our group's in-person meetings are the most efficient and useful as we get to work hands-on with drawings and code and really get all of our ideas flowing.

2.5.4 Participants:

Here, provide a list of team members, by name, and the tasks and responsibilities they were assigned during the sprint. Note both coding responsibilities and any other responsibilities as well (i.e. documentation related, management related).

Alex Voidoc:

- Incorporate the pirates in the open water and their functionality
- Design pirate movement according to player movement, and ensure that pirates cannot move through grids, they stay in one grid, unlike the player

Ali Zaeri:

- Work on how the player will navigate through islands
- Work on indicating where the player is on the grid (player icon), setting up player icon to follow the movements on keyboard (WASD)

Sheryl Buttar:

- Create more minigames based on the 3 different categories
- Build a consequence for losing a minigame and connect with other classes to ensure functionality
- Research on incorporating black and white on interface for accessibility options

Jayant Arora:

- Work on getting functionality of save game working
- Build methods to keep track of all changes in coins collected
- Build methods to manage inventory/pickups/drops of items

2.5.5 Tasks Completed:

- Created all minigames for all 3 categories
- Built the pirate movement algorithm
- Converted WASD commands to player icon movement
- Built the internal side of save game
- Incorporated methods to keep track of coins collected
- Majority of the internal side is built!

2.6. SPRINT 2 PRODUCT BACKLOG

Changes Made:

- Story 2.3 - pickup item updated functionality, now, instead of picking up an item, the method will pick up a magic potion/power-up that will be viewable on screen, this will give the player an instant benefit. The properly formatted changed user story is reflected on the design document

Stories Removed: (See Design Document or Sprint 1 Product Backlog to see the formatted story)

- Story 1.8 - changed design of game, rather than having the player decide to go on a specific island from a list, the player follows the infinite grid to wherever it takes them
- Story 2.4 - removing the "drop item" concept as the team has decided to not include any items for functionality purposes. Pickup item (story 2.3) has been updated, shown in the "changes made" section above

Stories completed from previous sprints (crossed out in table below):

- 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7

Name	ID	Owner	Description	Implementation Details	Priority	Effort
Save Game	2.1	Jayant	As a player I want to be able to save my game progress so that I can continue my adventure game later on without losing my progress (coins, lives left, etc.) and game data.	Save game file by saving to serialized binary file	1	3
Lives Left	1.1	Jayant	As a player, I want to keep track of my remaining lives so that I know how many more chances I have to complete games.	Create an attribute associated with the player's file that decrements by 1 every time the player loses a life, display on user screen	1	1
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Accessible Gameplay	4.5	Sheryl	As a visually-impaired player I hope for accessible features in mini-games auditory prompts, and auditory as well as printable .txt file feedback.	Implement an auditory to feature and if a player clicks a particular key (ie, shift key) generate a .txt file which can then be transferred to a braille display, or for feature references as required by the user	1	3
Island Objects	3.3	Sheryl	As a player, I want to be able to view items available on an island so that I can choose to pick up/drop something from my personal inventory.	Have images of these objects prepared for each island and create island objects for each respective island	3	1

Location indication	4.5	Ali	As a player, I want a clear indicator of my current location on the grid, so that I can easily plan my route and make informed decisions about where to go.	Implement a location indicator on the user interface, providing real-time updates on the player's current island or grid cell with audio and visual cues.	2	2
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Fog around Unexplored areas	3.6	Alex	As a player, I want there to be fog in the cells I haven't visited that clears and stays clear when I travel near. This way I can see the areas I've already visited.	Give the cells a fog attribute that visually occludes the cell when it's enabled. Disable it once the player gets near allowing them to see whats in the cell if anything.	3	2
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2.7. SPRINT 2 CODE REVIEWS

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Story Reviewed	Name of Reviewer	Pull Request Link
[2.2]: Coins Collected	Sheryl Buttar	N/A - See Above Message
[1.4]: Coins Collected	Ali Zaeri	N/A - See Above Message
[2.1]: Save Game	Alex Voidoc	N/A - See Above Message
[2.7]: Pirates Moving	Jayant Arora	N/A - See Above Message

2.8 SPRINT 2 RETROSPECTIVE

Participants:

- Alex Voidoc
- Ali Zaeri
- Sheryl Buttar

- Jayant Arora

Unfinished Tasks:

- Pirates not implemented
- Island games are made but not connected to islands
- Save game not working correctly

Summary of Practices that Went Well:

- Reviewed overall user stories and priorities while deciding tasks for each member for the week
- Towards the end of each meeting, set deadlines for tasks for each member to complete throughout the week (sent deadlines to WhatsApp chat)

Summary of New or Revised Practices Moving Forward

- Revisit priorities for each user story; some stories should be higher priorities than what is listed

Summary of Bad Practices not to be Repeated

- After an in-person/online code review, confirm the upload with the group members it affects, this will help as the communication gap caused problems

Best/Worst Experience

- Best experience was successful implementation of player moving through grid cells

2.9. SPRINT 3 OVERVIEW

2.9.1 Sprint Overview:

This sprint's objective is to complete the implementation of significant front-end elements, including the settings, grid area, and mini-game interface. In addition, we want to combine the main back-end elements related to players and minigames. Additionally, we must ensure that our accessibility features, such as audio and color contrast, function as needed. Finally, composing a script and recording a group video of our project to present.

Start Date: November 30, 2023

End Date: December 5, 2023

2.9.2 Stories Selected for this Sprint:

All changes to user stories are shown in the product backlog section of this sprint (2.10)

Name	ID	Owner	Description	Implementation Details	Priority	Effort
Manage Inventory	3.1	Jayant	As a player, I want to be able to view and manage my inventory so that I can see what items I've collected and if they will be useful on my journey.	Create a list attribute associated with the player that stores all items in player inventory	2	1
Visited	4.1	Jayant	As a player, I want to know if I have visited a particular island already, so that I can focus on exploring new islands as new islands provide maximum rewards.	Create a boolean attribute that starts as false and changes to true once an island has been visited	2	2

Lose Entire Game	4.2	Jayant	As a player, I want the game to end/lose the game after I run out of my 3 lives, so that the game restarts fresh.	If the attribute introduced in "Lives Lost" reaches 0, take the game back to the home page giving the player the option to restart	1	2
Accessible Gameplay	4.5	Sheryl	As a visually-impaired player I hope for accessible features in mini-games auditory prompts, and auditory as well as printable .txt file feedback.	Implement an auditory to feature and if a player clicks a particular key (ie, shift key) generate a .txt file which can then be transferred to a braille display, or for feature references as required by the user	1	3
Customize Difficulty	3.2	Sheryl	As a player with a short attention span, I want every island to provide distinct adventurous or educational opportunities with various themes and difficulties.	Create distinct island classes with corresponding mini-game options for each topic and difficulty level as a player progresses through the game	1	2
Feedback on Island Arrival	4.6	Ali	As a player, I want to receive visual and auditory feedback when reaching a new island, so that I can feel a sense of accomplishment and progress in the game, as well as receiving confirmation of my arrival.	Implement triggers with audio and visual cues upon island arrival using event handlers. Add customizable settings to adjust celebration metrics. (e.g. different themes)	1	3
Engaging Movement Experience	3.5	Ali	As a player struggling to pay attention, I want engaging animations and/or sound effects during island-to-island movement, so that I'm motivated to explore the game world.	Implement event triggers for movement between islands, presenting audio and visual effects. Potentially add customizable audio and images as a "loading screen".	3	2

Fog around Unexplored areas	3.6	Alex	As a player, I want there to be fog in the cells I haven't visited that clears and stays clear when I travel near. This way I can see the areas I've already visited.	Give the cells a fog attribute that visually occludes the cell when it's enabled. Disable it once the player gets near allowing them to see whats in the cell if anything.	3	2
Randomly placed hidden and visible obstacles.	3.7	Alex	As a player, I want some cells to be obstacles that must be navigated around or some cells to have hidden traps.	In addition to randomly selecting the cells to have islands, also give them the potential of having hidden traps or an obstacle that the player must go around.	3	3
Different biome types	4.7	Alex	As a player, I want certain grid areas to follow a certain theme and have more of certain types of objects in them and a different appearance.	Randomly select a theme that adjusts the appearance and the random chances of certain cells having certain events.	3	3

2.9.3 Team Capacity:

We expect to be able to complete the components of the Leaderboard by Monday, December 4th and the presentation video by early Tuesday, December 5th. Mini games and player functionalities should be done close to Sunday, December 4th so front-end UI can be implemented without hassle.

2.9.4 Participants:

Sheryl Buttar:

- MiniGameFactory class (connects mini games to the players current island), Documentation of this week's sprint, Revise UML Designs

Jayant Arora:

- Update Islands to connect to Mini games, Template for presentation, Manage

final report/document submission

Ali Zaeri:

- Implement Audio functionalities, work on final report/document submission

Alexander Voidoc:

- Implement Color contrast functionalities, Manage front-end design

2.9.5 Tasks Completed:

What was actually finished during this sprint?

- kept track of number of visits for player to a specific island (to aid in implementing difficulty features)
- Implementing how the game will end (win/loss)
- Adding accessibility features (black/white screen, audio aids)
- customizing difficulty for games based on skill level
- getting overall UI to work, game in full working condition
- updating documentation, design documents, UMLs, etc. and polishing all of our work

2.10. SPRINT 3 PRODUCT BACKLOG

Changes Made:

In this sprint

- No “changes” made to user stories in this sprint, some stories were removed however (see below)

From previous sprints

- Story 2.3 - pickup item updated functionality, now, instead of picking up an item, the method will pick up a magic potion/power-up that will be viewable on screen, this will give the player an instant benefit. The properly formatted

changed user story is reflected on the design document

Stories Removed: (See Design Document or Sprint 1 Product Backlog to see the formatted story)

In this sprint

- Story 3.3 - our team has decided to completely get rid of the idea of picking/dropping things on islands, including magic potions (this was mentioned in sprint 2 product backlog). As a result, multiple stories have been changed/deleted (3.1, 2.3, 2.4)
- Story 3.1 - as shown in the story 3.3 directly above, there is no longer a need to manage inventory, so this story 3.1 has been removed
- Story 4.7 - this story was also unnecessarily and "extra" and was not implemented
- Story 3.7 - this story was also unnecessarily and "extra" and was not implemented
- Story 2.3 - deleted as mentioned above in story 3.3 (this story was *previously* marked as "changed" now it is completely removed)

From previous sprints

- Story 1.8 - changed design of game, rather than having the player decide to go on a specific island from a list, the player follows the infinite grid to wherever it takes them
- Story 2.4 - removing the "drop item" concept as the team has decided to not include any items for functionality purposes. Pickup item (story 2.3) has been updated, shown in the "changes made" section above

Stories completed from previous sprints (crossed out in table below):

- 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7
- 2.1, 2.2, 2.5, 2.7, 2.8

The rest of the stories that are not crossed out below will be completed in the duration of this sprint.

Name	ID	Owner	Description	Implementation Details	Priority	Effort
Save Game	2.1	Jayant	As a player I want to be able to save my game progress so that I can continue my adventure game later on without losing my progress (coins, lives left, etc.) and game data.	Save game file by saving to serialized binary file	1	3
Lives Left	1.1	Jayant	As a player, I want to keep track of my remaining lives so that I know how many more chances I have to complete games.	Create an attribute associated with the player's file that decrements by 1 every time the player loses a life, display on user screen	1	1
Coins Collected	2.2	Jayant	As a player, I want to keep track of the number of coins I've earned, so that I can know how many coins I require to reach the winning amount (500).	Create an integer attribute associated with the player class that increases/decreases depending on the events taking place with the player	2	2
Set Name	1.2	Jayant	As a player, I want the option to set my player name so that I can have a personalized gaming experience.	Create a rename function associated with the player class to change the player's name that is displayed	3	1
Visited	4.1	Jayant	As a player, I want to know if I have visited a particular island already, so that I can focus on exploring new islands as new islands provide maximum rewards.	Create a boolean attribute that starts as false and changes to true once an island has been visited	2	2
Lose Entire Game	4.2	Jayant	As a player, I want the game to end/lose the game after I run out of my 3 lives, so that the game restarts fresh.	If the attribute introduced in "Lives Lost" reaches 0, take the game back to the home page giving the player the option to restart	1	2
Diverse Games	4.3	Sheryl	As a player, each time I arrive on an island I want to have the option of playing new, and a variety of mini-games, educational and adventurous, to keep the experience exciting.	Implement a randomizer to generate different pre-assigned games and play styles based on the island that the player is currently visiting. Each island	1	3

				would be a separate class and mini-games		
Instructions	4.3	Sheryl	As a player, I want to know the specific rules/goals for each activity on each island so that I can fully understand the game I am playing and increase my chances of winning.	Create an instructions pop-up that is displayed before the start of each mini-game with short, yet understandable rules and guidelines for the game.	1	2
Inclusive Learning	4.4	Sheryl	As a player, I would like a certain number of attempts for each mini-game depending on the difficulty level chosen at the start of the game.	Create a predetermined number of tries per game as per the difficulty level chosen by the user and filter mini-games to have a certain number of problems/difficulty accordingly	3	1
Rewards	4.4	Sheryl	As a player, I would want to see additional rewards for completing minigames quickly or precisely, as well as within a set amount of time depending game to game.	Implement a reward system (a certain number of gold coins) per mini-game based on accuracy and time spent on the mini-game	2	1
Penalty	2.5	Sheryl	As a player who loves a challenge, I would like some consequences for losing a mini-game.	In the instructions text, notify a user the consequences of losing a game and in the implementation, predetermine penalties depending on the game and difficulty	2	2
Customize Difficulty	3.2	Sheryl	As a player with a short attention span, I want every island to provide distinct adventurous or educational opportunities with various themes and difficulties.	Create distinct island classes with corresponding mini-game options for each topic and difficulty level as a player progresses through the game	1	2

Accessible Gameplay	4.5	Sheryl	As a visually-impaired player I hope for accessible features in mini-games auditory prompts, and auditory as well as printable .txt file feedback.	Implement an auditory to feature and if a player clicks a particular key (ie, shift key) generate a .txt file which can then be transferred to a braille display, or for feature references as required by the user	1	3
Location indication	4.5	Ali	As a player, I want a clear indicator of my current location on the grid, so that I can easily plan my route and make informed decisions about where to go.	Implement a location indicator on the user interface, providing real-time updates on the player's current island or grid cell with audio and visual cues.	2	2
Customizable Grid Cells	3.4	Ali	As a player, I want the option to choose the size and difficulty of the grid cells for maneuvering, so that I can tailor the game's navigation to my preference and skill level.	Create a grid customization feature allowing players to choose grid cell size and difficulty settings via a settings menu. Implement system responsiveness to player selections which in turn modify game terrain and mechanisms.	2	3
Feedback on Island Arrival	4.6	Ali	As a player, I want to receive visual and auditory feedback when reaching a new island, so that I can feel a sense of accomplishment and progress in the game, as well as receiving confirmation of my arrival.	Implement triggers with audio and visual cues upon island arrival using event handlers. Add customizable settings to adjust celebration metrics. (e.g. different themes)	1	3
Engaging Movement Experience	3.5	Ali	As a player struggling to pay attention, I want engaging animations and/or sound effects during island-to-island movement, so that I'm motivated to explore the game world.	Implement event triggers for movement between islands, presenting audio and visual effects. Potentially add customizable audio and images as a "loading screen".	3	2

Randomly Generated Grid	4.6	Alex	As a player, I want there to be a grid of cells that I can navigate through with some cells having random islands on them.	Create a class that stores all of the cells for the grid. These cells may randomly have an island assigned to them so that when the player goes over this grid cell, they would enter that island. All randomly generated.	1	3
Procedural Generation of more grids	4.7	Alex	As a player, I want to be able to move off the current grid into another newly generated grid and be able to move back and forth between an unlimited amount of grids.	Have a controller that stores a position mapping for the different grids for memory when returning back to the grid. Everytime the player tries to move off the current grid, either make a new one or load a previously created one.	2	2
Pirates in open water	2.7	Alex	As a player, I want certain grid cells to have pirate ships that if I run into, will play a minigame to see if I win or lose gold.	Have certain cells randomly designated as pirate cells that if crossed over, will initiate a minigame for gold. If a minigame is won, the pirate will disappear, otherwise the pirate will still exist.	1	2
Pirates moving	2.8	Alex	As a player, I want the pirates to be able to move making it harder to avoid them.	Have pirates make a random move every time the player moves in some direction by moving to a nearby "open" cell or potentially the same cell the player is trying to move to. Pirates cannot move between grids, only within.	2	2
Fog around Unexplored areas	3.6	Alex	As a player, I want there to be fog in the cells I haven't visited that clears and stays clear when I travel near. This way I can see the areas I've already visited.	Give the cells a fog attribute that visually occludes the cell when it's enabled. Disable it once the player gets near allowing them to see whats in the cell if anything.	3	2

2.11. SPRINT 3 CODE REVIEWS

Story Reviewed	Name of Reviewer	Pull Request Link
[2.1]: Save Game	Alex Voidoc Ali Zaeri	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/7#widget-state
[4.1] Visit Count	Alex Voidoc Ali Zaeri	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/7#widget-state
[3.5] Engaging Movement Experience	Alex Voidoc	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/10
[4.6] Feedback on Island Arrival	Alex Voidoc	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/10
[4.3] Diverse Games	Jayant Arora	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/8
[1.5] Location Indication	Alex Voidoc	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/12
[1.6] Randomly Generated Grid	Ali Zaeri	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/13
[4.1] End Game	Alex Voidoc	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/14

[4.3] Diverse Games	Sheryl Buttar	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/16
[3.5] Engaging Movement Experience	Jayant Arora	https://mcsscm.utm.utoronto.ca/csc207_20239/group_64/-/merge_requests/17

2.12 SPRINT 3 RETROSPECTIVE

Participants:

- Alex Voidoc
- Ali Zaeri
- Sheryl Buttar
- Jayant Arora

Unfinished Tasks:

- Save game and load game functionality was implemented but not available to players on the UI

Summary of Practices that Went Well:

- Multiple Zoom meetings to clarify what's required to be completed by each member, clarify parts of code, etc.
- Communication between group members, letting each other know if we require help on a certain part of our responsibilities

Summary of New or Revised Practices Moving Forward

- Draw things out! Drawing on an iPad/whiteboard helps for everyone to understand what is going on!

Summary of Bad Practices not to be Repeated

- Not telling group members whether we pushed to a branch or on the main master file! This caused problems as sometimes, group members thought they pushed, but it was only local to their computer or only on their branch, no one could find the changes!

Best/Worst Experience

- Best experience was seeing everything come together in the final moments, great to see all of our hard work over the past month or two pay off!

SECTION 3: SUMMARY

In summary, our project has successfully realized the majority of our initial goals outlined in the proposal. The game is not only operational but also fulfills our overarching mission of aiding students with learning disabilities. We take pride in achieving this milestone, showcasing a fully functional game enriched with accessibility features, including a black/white color option and audio cues for player orientation.

While the core functionality of the game has been implemented seamlessly, we encountered some limitations with the incorporation of additional features initially planned. Notably, the pickup/drop items and inventory features (story 3.3, 2.3, 2.4) were omitted. Our decision to forgo these elements stemmed from a refined understanding of the game concept; we found that managing a user inventory and collecting items would detract from the game's simplicity. Moreover, the option for players to select an island (story 1.8) was transformed into an infinite grid, a modification aimed at enhancing player engagement. Detailed information regarding these alterations can be found in the product backlog sections (Sprint 3 Product Backlog (2.10)) and the updated design document (Section 2: User Stories).

In reflection, the Castaway Chronicles team is immensely proud of the work

accomplished during the past two months in bringing this game to fruition. The experience has been a valuable learning opportunity, providing insights into addressing accessibility needs, fostering effective teamwork in software design, navigating Git, utilizing various Java libraries, and more.

We express our gratitude for this opportunity and sincerely hope you enjoyed learning about our project!

Castaway Chronicles

by Alex Voidoc, Ali Zaeri, Sheryl Buttar & Jayant Arora