Sprint 2 Planning Document
Team 1: Trey Rosenfeldt, Jonah Irons, Helen Fivecoate, Austin Rogers, Jennifer Sheng, Mohana Barve

Sprint Overview

During this sprint our team hopes to continue building on our base game. A lot of the work we are doing is advancing the skeleton work we did on sprint 1, with additions to customizations, map detail, and more user interfaces. This sprint will set the game up to be almost complete with starting to build the attack interfaces and interactions, creating possible interactions with non-player characters, creating more complex character capabilities, and building on map customization with creating the inside of buildings and adding a calendar with real events in it. Our first sprint set up a strong baseline, and if we continue at this pace, our third sprint will be working on the finishing touches and making sure all parts work together.

Scrum Master: Trey Rosenfeldt

Meeting Plan: Wednesdays @ 3:00pm, Thursdays @ 10:15 am

Risks and Challenges:

Now that we have gained some experience in using the game-building software, it is critical that we cohesively merge all the features that we have worked to create into the main game. It is simple to make the features stand-alone, but in order to create a polished product they must function well together. We also run the risk of cluttering the UI during this sprint due to the addition of many new features. We need to make sure that each new addition to the UI fits well with the buttons and menus that have already been created so that it is not a confusing experience for the user when playing the game.

Current Sprint Detail

User Story #1
#16: As a player, I would like to experience different music /audio depending on where I am on the map

#	Description	Estimated Time	Owner
1	Brainstorm different game states / areas that should have different music	1 Hr	Jonah
2	Research/find/create music for different locations	5 Hrs	Jonah
3	Add appropriate audio tracks for each area of the game	3 Hrs	Jonah
4	Add transitions for tracks, adjust levels, fade, etc	2 Hr	Jonah

Acceptance Criteria:
● There will be different music playing while the user is in different sections of the map
● When the user loads up a game save, the audio playing on open will correspond to the in game location
● Given the game is paused, the music in the background will lower / stop, and will resume when the settings menu is closed again.

User Story #2
#17: As a player, I would like to experience different music/audio depending on who I am battling / whether I am in combat or not.

#	Description	Estimated Time	Owner
1	Brainstorm different enemy types / interactions that require different music	2 Hrs	Jonah
2	Add audio track to play while in a battle state	2 Hrs	Jonah
3	Make other audio stop while in a battle state	1 Hr	Jonah

Acceptance Criteria:
● Given the battle state has been implemented, if the user enters battle, then a different battle music will play
● Given the battle state has been implemented, if the user exits battle in any way then the battle music will end
● Given the battle state has been implemented, the appropriate music will start playing

again

User Story #3
#18: As a player, I would like to experience SFX on different actions, player-specific or UI interaction-based.

#	Description	Estimated Time	Owner
1	Brainstorm what actions in the game require SFX	1 Hr	Jonah
2	Find / create SFX for corresponding in-game actions	1 Hr	Jonah
3	Add SFX to different actions	3 Hrs	Jonah

Acceptance Criteria:
- The user will be able to hear different SFX depending on what UI/menu interaction occurs, i.e. opening the inventory vs clicking the menu button
- The user will be able to hear different SFX for player manipulation, such as walking sounds and battle sounds
- The user will be able to adjust the level of SFX using the volume slider in the settings

User Story #4
#30: As a player, I would like to battle random enemies as I travel through the map

#	Description	Estimated Time	Owner
1	Design a few enemies with different battle sequences	3 Hrs	Jonah
2	Add player models to game in varying locations around the map	2 Hrs	Jonah
3	Integrate battle sequence for each enemy	4 Hrs	Jonah
4	Debug battle interaction and completion	2 Hrs	Jonah

Acceptance Criteria:
- The user will be able to see different enemies located around the map
- The user will be able to interact with the random enemies to initiate a battle sequence
- Given an enemy has been defeated, the enemy will not be able to be battled again on the current save.

User Story #5
#10: As a player and Purdue, I would like to go into classrooms and into other buildings. (Programming)

#	Description	Estimated Time	Owner
1	Figure out logic to switch map view to another map when entering building	4 Hr	Jennifer
2	Make label pop up when player is close to a building and clicks it, asking player if they want to enter	3 Hr	Jennifer
3	Playtest and debug	2 Hr	Jennifer

Acceptance Criteria:
- Given that the player is exploring the world, when the player moves close to a building and clicks it, a pop up should appear asking if the player wishes to enter the building
- Given that the player has entered the building, they should be taken to separate, simpler "map" with a few classrooms
- Given that the player is exploring the building, there should be proper collision interactions in place.

User Story #6
#11: As a player and Purdue, I would like to go into classrooms and into other buildings. (Design)

#	Description	Estimated Time	Owner
1	Design simple building interior layout	3 Hr	Jennifer
2	Brainstorm color scheme and make tilemap	3 Hr	Jennifer
3	Playtest and debug	1 Hr	Jennifer

Acceptance Criteria:
- Given that the player has entered a building, they should see a simple building layout map that they can explore and walk around in.
- Given that the player has entered a building, they should be able to enter different classrooms that are clearly represented by the building layout.
- Given that the player has entered a building, they should see a tilemap/color scheme that is consistent with the rest of the game.

User Story #7
#12: As a player and Purdue student, I would like to be able to learn about Purdue trivia by interacting with the environment and NPCs.

#	Description	Estimated Time	Owner
1	Brainstorm trivia questions	3 Hr	Jennifer
2	Create interactable objects on map	4 Hr	Jennifer
3	Make "notebook" that stores new trivia facts the player encounters	3 Hr	Jennifer
4	Add notebook icon on main HUD that player clicks to access anytime	3 Hr	Jennifer
5	Add sparkle icon on things that contain trivia	2 Hr	Jennifer
6	Playtest and debug	2 Hr	Jennifer

Acceptance Criteria:
- Given that the player is exploring the main campus, there should be sparkle icons on objects and NPCs that provide trivia facts, which can be clicked when close.
- Given that the player is learning new trivia, they should be added to a notebook.
- Given that the player wishes to look back at trivia that they have collected, there should be a book icon somewhere on the main HUD or pause menu that the player can press to access the notebook
- Given that the player is viewing the notebook, there should be an indicator telling the player how many trivia facts they have and haven't learned

User Story #8
#29: As a player, I would like to have a class system for my characters (e.g. general fighter, hard hitter, healer, etc.).

#	Description	Estimated Time	Owner
1	Research and define the class system, determining the available classes and their roles.	2 Hr	Mohana
2	Implement a system to assign a class to a character within the customization menu.	2 Hr	Mohana
3	Add a visual icon that appears on the character's body representing their selected class.	2 Hr	Mohana

#	Description	Estimated Time	Owner
4	Ensure that the selected class and corresponding icon are stored along with other character customizations.	2 Hr	Mohana
5	Debug and test the system to ensure proper functionality and persistence of class selection.	2 Hr	Mohana

Acceptance Criteria:

- Given a player selects a class for their character, then a corresponding class icon should appear on the character's body.
- Given a player saves their character, then the class selection and icon should be stored along with other customizations.
- Given a player reloads their saved character, then the class and icon should persist.

User Story #9
#59: As a player and Purdue student, I would like to see the difficulty level of courses in specific majors.

#	Description	Estimated Time	Owner
1	Research Purdue's website to identify which courses are known to be more complex.	4 Hr	Mohana
2	Organize and categorize the courses by difficulty level.	2 Hr	Mohana
3	Implement a UI feature that displays course difficulty levels.	2 Hr	Mohana
4	Ensure difficulty ratings are displayed consistently across all courses.	1 Hr	Mohana
5	Test the feature to confirm accurate difficulty representation.	1 Hr	Mohana

Acceptance Criteria:

- Given a player selects a course, then the difficulty rating should be displayed.
- Given a player exits and reopens the course menu, then the difficulty ratings should persist.
- Given a player switches between different courses, the difficulty rating should update accordingly.

User Story #10

#61: As a player and Purdue student, I would like to see which professors teach specific courses, their difficulty ratings, and where their offices are.

#	Description	Estimated Time	Owner
1	Research Purdue's website to gather information on professors, their courses, and office locations.	4 Hr	Mohana
2	Organize and structure the professor-course data in a way that is easy to navigate.	2 Hr	Mohana
3	Implement a UI screen displaying professor names alongside their courses	2 Hr	Mohana
4	Ensure the UI allows players to click on a professor to view additional details (office location, difficulty rating, etc.).	1 Hr	Mohana
5	Test the feature to confirm professor details display correctly.	1 Hr	Mohana

Acceptance Criteria:
- Given a player selects a professor, then their associated courses and office location should be displayed.
- Given a player exits and reopens the professor menu, then the information should persist.
- Given the player switches between different professors, their associated courses and office locations should update accordingly.

User Story #11
#31: As a player, I would like a Battle UI to show up when I get near an enemy.

#	Description	Estimated Time	Owner
1	Create a design for the Battle UI.	1 Hrs	Trey
2	Implement the Battle UI for the user	5 Hr	Trey
3	Implement custom Resource classes for items	2 Hrs	Trey
4	Create different weapons to use in battle	2 Hrs	Trey
4	Debug and test the program to make sure all UIs work together	2 Hrs	Trey

Acceptance Criteria:
- Given the player walks up to a specific object, then the Battle UI will open.
- Given the player wants to use a weapon, then they can see the weapons they can use.
- Given the player runs tries to run away, then a chance will allow the user to leave the fight.

User Story #12

#33: As a player, I would like to be able to switch between character items during battle as well as ability to use potions during battle.

#	Description	Estimated Time	Owner
1	Create different potions that can be used during battle.	1 Hr	Trey
2	Implement functionality for all potions and weapons in battle.	3 Hrs	Trey
3	Program the ability to use different weapons during a fight (along with using a turn to switch a weapon from the item bar to inventory)	3 Hrs	Trey
4	Debug and test response time with the HUD	3 Hrs	Trey

Acceptance Criteria:
- Given the player clicks a potion in the Battle UI, then the potion will be used correctly.
- Given the player switches weapons, then ui will update accordingly.
- Given the player switches the items out from the inventory, then their turn will be skipped.

User Story #13

#32: As a player, I would like to be able to use different attacks in battle.

#	Description	Estimated Time	Owner
1	Design an attack system	1 Hr	Trey
2	Implement the attack system for the user	3 Hrs	Trey
3	Create a way to use different weapons and they do different damage	3 Hrs	Trey
4	Debug and test the program	2 Hrs	Trey

Acceptance Criteria:
- Given the player clicks a weapon, then the weapon will do that specific damage to an enemy.
- Given the player switches, then weapons, then the weapon damage will change.
- Given the player uses a special weapon, then it will have a specific chance to do something to the enemy(it may stun them or critical them).

User Story #14

#36: As a player, I would like to be able to view my character's abilities.

#	Description	Estimated Time	Owner

1	Brainstorm abilities to add.	1 Hr	Helen
2	Create a preview on hud that shows simplified abilities.	3 Hrs	Helen
3	Create button that pulls up detailed view of abilities	2 Hrs	Helen
4	Develop a detailed view of abilities.	3 Hrs	Helen
6	Test and debug.	1 Hr	Helen

Acceptance Criteria:
- Given the player is in gameplay, they can see a preview of simplified main abilities.
- Given the player presses the button or key command for detailed view, a window appears with bars to show player abilities.
- Given the player is viewing the bars for each ability, the bars have a max number that they can be increased to.

User Story #15
#44: As a player, I would like to get stronger or more abilities based on my level.

#	Description	Estimated Time	Owner
1	Hook abilities up to multipliers.	2 Hr	Helen
2	Create functions to increase and decrease abilities whenever needed	2 Hrs	Helen
3	Develop increase in abilities based on level	3 Hrs	Helen
4	Create ability for new abilities to appear based on level.	2 Hrs	Helen
5	Test and debug.	1 Hr	Helen

Acceptance Criteria:
- Given the player levels up, the player is given a number of credits they can apply to increase one or more abilities.
- Given the player levels up to level three, the player gains access to a new ability.
- Given the player has increased their health ability 1 time, there is space for 2 more health in the bar.

User Story #16
#55: As a player, I would like to talk to my academic advisor when I need new classes.

#	Description	Estimated Time	Owner
1	Learn how to create a spot on the map to make the advisor accessible.	1 Hrs	Helen
2	Create a screen to talk to the advisor.	2 Hrs	Helen
3	Create advisor character and dialog.	2 Hrs	Helen
4	Create buttons to talk to advisor and schedule classes/ start new ones.	2 Hrs	Helen
5	Attach advisor to updating new classes in the major information.	2 Hrs	Helen
6	Test and debug	1 Hr	Helen

Acceptance Criteria:
- Given the player finds the advisors building on the map, an option to visit with their advisor appears.
- Given the player chooses to visit with their advisor, a window with an image of the advisor and dialog instructing them what to do appears.
- Given the player chooses to enroll in courses for the next semester with the advisor, the current course information on the phone updates.

User Story #17
#23: As a player, I would like to be able to see a calender of the major events that occur on campus

#	Description	Estimated Time	Owner
1	Find a list of events the occur at Purdue	2 Hr	Austin
2	Create a new method for the user to access calendar	3 Hr	Austin
3	Create calendar UI with all events on the list	5 Hr	Austin

Acceptance Criteria:
- Given that I am able to find major events at Purdue, I will compile them into a list with specifications about each of them
- Given that the user is within the game, there will be a method to access the calendar

- Given that the user access the calendar, there will be a UI so that the user is able to view all of the events that occur on the calendar

User Story #18

#37: As a player, I'd like to be able to collect items I encounter while roaming around the game.

#	Description	Estimated Time	Owner
1	Create an object item that is able to be picked up	4 Hr	Austin
2	Turn the current list of items in the game into the new "Object" item giving them more functionality	3 Hr	Austin
3	Create a new button that allows users to pick up items that they discover within the map	3 Hr	Austin

Acceptance Criteria:
- Given that I am within our game file on Godot, there will be an object class that adds functionality to items so they are able to be picked up
- Given that there is already items implemented into the game, they will be added to the new item class so that they have the ability to be picked up
- Given that the user is within game, they will have the ability to pick up items they find within the map

User Story #19

#38: As a player, I would like to see all of the items I am able to collect and which ones I have collected.

#	Description	Estimated Time	Owner
1	Create new items and add them to a list along with previously existing items	3 Hr	Austin
2	Add an in-game UI so that users are able to see all of the items on a list that are able to be collected	4 Hr	Austin
3	Add to the item UI the functionality to see which items have been previously collected	3 Hr	Austin

Acceptance Criteria:
- Given that I create new items and old items exist, they will be added to a list of all the possible items that can be collected in the game
- Given that the user is in the game, they will be able to access a UI where they can view the list of all the possible items that can be collected
- Given that the item list UI is successfully created, it will have the functionality to display the items that the user has already collected

Remaining Backlog

Table of Contents	Highlighted = worked on this sprint	~~Crossed out~~ = finished a previous sprint

Functional Requirements:

Game Setup and Core Functionality

1. As a Player, I would like a login and account creation so I can see the leaderboards and (if time allows) go into multiplayer areas.
2. ~~As a player, I would like to save my game and be able to log into the same location, and point of the story I was at when I exited.~~
3. ~~As a player, I would like to delete my save from the game.~~
4. ~~As a player, I would like to interact with a pause screen to adjust the volume of sound effects and music.~~
5. ~~As a player, I would like to interact with a pause screen to adjust the brightness of the screen and contrast.~~
6. ~~As a player, I would like to be able to set custom key bindings for controls in the game.~~

Exploration and World Interaction

7. ~~As a player, I would like to be able to move through the map using keyboard controls (up, down, left, right).~~
8. ~~As a player, I would like to be able to view a mini-map of Purdue University for easier navigation during exploration and quests.~~
9. ~~As a player and Purdue student, I would like to explore where buildings are on the main campus and their names.~~
10. <mark>As a player and Purdue student, I would like to go into classrooms and into other buildings (Programming)</mark>
11. <mark>As a player and Purdue student, I would like to go into classrooms and into other buildings (Design)</mark>
12. <mark>As a player and Purdue student, I would like to be able to learn about Purdue trivia by interacting with the environment and NPCs.</mark>
13. As a player, I would like to see teachers in their office hours and the ability to see classes full during their class time.
14. As a player, I would like to go onto a computer UI to see what classrooms are full during what time of day.
15. As a player, I would like to be able to experience different biomes/regions within the Purdue campus.
16. <mark>As a player, I would like to experience different music /audio depending on where I am on the map.</mark>
17. <mark>As a player, I would like to experience different music/audio depending on who I am battling / whether I am in combat or not.</mark>
18. <mark>As a player, I would like to experience SFX on different actions, player-specific or UI interaction-based.</mark>
19. (If time allows) As a Player, I would like to be able to explore/unlock fast-travel locations.

20. (If time allows) As a Player, I would like to have buses around Purdue that I can fast-travel with.
21. (If time allows) As a Player, I would like to see major events on campus like the grand pre and industrial round table, as well as things like clubs and Greek life.
22. (If time allows) As a Player, I would like to have daytime and night time and time when I can go to my classes.
23. As a player, I would like to be able to see a calender of the major events that occur on campus.
24. (If time allows) As a Player, I would like a calendar to see the events and what day it is.
25. (If time allows) As a Player, I would like to have to go to sleep to skip the night and if I don't sleep I get fatigued.

Character and Customization Features
26. As a player, I would like to save the characters that I create in a database and also access a database of pre-made characters throughout the game
27. As a player, I would like to customize my character's head, including hairstyles, facial hair, mouth structure, and eyes.
28. As a player, I would like to customize my character's clothing and colors, including outfits, ties, bowties, and overall color schemes.
29. As a player, I would like to have a class system for my characters (e.g. general fighter, hard hitter, healer, etc.).

Combat and Items
30. As a player, I would like to battle random enemies as I travel through the map
31. As a player, I would like a Battle UI to show up when I get near an enemy.
32. As a player, I would like to be able to use different attacks in battle.
33. As a player, I would like to be able to switch between character items during battle as well as ability to use potions during battle.
34. As a player, I would like to be able to answer a trivia question and if i get it wrong i cannot battle.
35. As a player, I would like to be able to view my character's item inventory outside of battle.
36. As a player, I would like to be able to view my character's abilities.
37. As a player, I'd like to be able to collect items I encounter while roaming around the game.
38. As a player, I would like to see all of the items I am able to collect and which ones I have collected.
39. As a player, I would like to be able to battle boss professor cyborgs that grant greater rewards than NPCs do.
40. As a player, I would like to be able to develop different battle strategies based on which college my enemy is from.
41. As a Player, I would like to have a HUD with things like being able to see how many attacks I have left and being able to see how much more experience I need to level up and a health bar.
42. As a Player, I would like my HUD updated if I am attacked and lose health and if I heal.
43. As a player, I would like to be able to have items that can refresh the amount I can use an item or have an item that can increase the damage of an item.
44. As a player, I would like to get stronger or more abilities based on my level.
45. As a player, I would like to have level-ups of my items (similar to evolutions in Pokemon)

Quest and Achievement Progression

46. As a player, I would like to be able to unlock and complete quests from NPCs to unlock new content.
47. As a player, I would like different quests that work towards a goal and can help me twords mine.
48. As a player, I would like to be able to see cutscenes for key moments during the main quest.
49. As a player, I would like to be able to see cutscenes for the introduction as well as a final graduation scene where you can traverse walking on the stage.
50. As a player, I would like to be able to unlock achievements as I progress through and make choices throughout the game.
51. ~~As a player, I would like to have a quest menu so I can see what I need to complete, as well as potential rewards for completing these quests.~~
52. As a player, I would like to change majors (this means having the teachers and buildings for full majors).
53. As a player, I would like to add minors (this means having the teachers and buildings for full majors)
54. ~~As a player, I would like to go onto a computer UI to see my graduation status and when I need to do my classes.~~
55. <mark>As a player, I would like to talk to my academic advisor when I need new classes.</mark>

Tutorial and Learning Features

56. ~~As a player, I would like to be able to have a tutorial experience to ease me into the controls of the game.~~
57. ~~As a player and Purdue student, I would like to see what classes are required for me to graduate/finish the game.~~
58. ~~As a player and Purdue student, I would like to see the classes I will take each semester and which classes I need for prerequisites.~~
59. <mark>As a player and Purdue student, I would like to see the difficulty level of courses in specific majors.</mark>
60. ~~As a player and Purdue student, I would like to learn where the classes are, whether that is large lecture halls or small classes.~~
61. <mark>As a player and Purdue student, I would like to see which professors teach specific courses, their difficulty ratings, and where their offices are.</mark>

Multiplayer and Social Features

62. (If time allows) As a Player, I would like to have a multiplayer area.
63. (If time allows) As a Player, I would like to communicate with online players.
64. (If time allows) As a Player, I would like to have a leaderboard about who had the quickest completion time.
65. (If time allows) As a Player, I would like to have a leaderboard about who had the highest percentage of questions answered correctly.
66. (If time allows) As a Player, I would like to see a stats page about how I did and things like how long I walked or how many items I collected, etc.

Non-Functional Requirements:
Architecture and Performance

We plan to develop the game entirely through Godot, which is an open-source game engine for creating 2D and 3D games. Godot handles all aspects of game development and design, such as character modeling, scene creation and manipulation, physics, movement, and audio, and contains support for multiplayer games, if necessary. Godot's custom language "GDScript" will be utilized for development, and it will all be done within a Godot environment.

Godot offers a lightweight development experience, allowing us to have small download sizes and efficient performance for our game - this is crucial, as reducing input delay and latency is vital to a smooth and effective experience. We aim to limit this latency to under 50ms, but striving to keep it as close to a 15-30 ms range. Godot ties seamlessly with Github, which will allow us to control the flow of our development process and monitor new changes and implementations as we work through the different aspects of the development process.

If we deploy the game on the web and/or mobile, we will utilize the built-in Godot services that are in place for a smooth deployment, which will allow for consistency across all game versions, and offer great portability for the product. Save files will be stored locally, on the user's system, as there is no need for a database to store individual player information as the game is single-player. Should we choose to implement Multiplayer, the necessary information and the game itself will be hosted through a remote server such as AWS or DigitalOcean.

Security

Security will be a strong point in our project when we are working on the login sequence and page. We will have to make sure that the user names and passwords get saved, hashed, and salted to secure valuable user information while requiring passwords to be at least 8 characters. The game will also securely save the points they were in the game. Saving the point they were in the game includes achievements, location, and bosses defeated. Along with making sure the data is safe we also have to make sure if a flood of requests comes in or if someone is trying to do specific attacks our program is prepared and can handle/timeout the user account where 5 failed attempts will trigger a temporary lock.

Usability

The interaction with the game's UI/UX is very important, as a smooth and comfortable experience is necessary for immersion to be preserved, as well as to ensure the learning experience is not interrupted. The response time of each button should be minimal, aiming to be under 40ms, and reducing lag and stuttering is a priority to ensure a proper gaming experience. Similarly, ensuring that load times stay within 10 seconds (on the high end) will maintain proper immersion. The log-in system will be necessary for saving progress so that a user does not have to restart their learning experience if they run out of time in that session. Implementing this feature and maintaining a smooth experience is vital to the performance of the product, and will be a priority during production.

Hosting/Deployment

The game will be contained in a complete game package, which will be downloadable by interested players. The game will be set up so that it can be deployed to the web and/or to mobile, by utilizing Godot's built-in services. Similarly, if the project develops further, we will utilize Godot's provided MultiplayerAPI to support multiplayer play, and will host the website through a DigitalOcean or AWS server.