Quacking up a Storm- Game Design Document, Technical Design Document, and Task List

Oops! All Birds Studios
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Game Design Document

Overview

Quacking up a Storm is a casual adventure game in which the player must explore a rainy cityscape to find, collect, and maintain lost ducklings in order to return them to their mother. The player, dressed for a rainy day, will be able to use their handy umbrella in order to aid in their search for lost ducklings. Like Super Mario Odyssey, the player must explore and interact with their environment to collect some sort of object (in *Quacking Up a Storm's* case, ducklings; in *Super Mario Odessey's* case, moons). It carries a similar feel to *Untitled Goose Game* in regards to play and art style. In both *Quaking Up a Storm* and *Untitled Goose Game*, the player explores a low-polygon environment at their own pace to complete tasks.

Upon launching the game, the user is greeted by a title screen from which they can start the game. When the game starts, a cut scene that introduces the main character and the central conflict of the game plays. The camera pans to them sitting in their living room watching a weather report. They're interrupted by a knock on the door and walk over to answer it. The perspective shifts to the main character's point of view as they open the door. However, no one's at the door. After a brief, confused pause, they're interrupted by a quack and look down to find a distraught mother duck. She explains that her ducklings became lost in the storm and she needs their help to find them. Because the main character's house is shaped like a loaf of bread, the mother duck chose to come to them for help. The protagonist abruptly stops her frantic dialogue by putting their hand up, closes the door on the mother duck, and opens it a few moments later donning their raincoat and boots and with their handy umbrella at the ready. Following this cutscene, the player is transported to the first level, set in a local park. This serves as the tutorial level of the game, where the user learns the game's basic controls and how to identify the visual and audio cues associated with the missing ducklings.

Quacking Up a Storm's art style will be simplistic in a low-poly style with a limited color pallet. The character models will be similar to the characters in *Animal Crossing*, with a large head, cone-shaped body, and spherical hands. See Figure 1 for concept art of the main character.

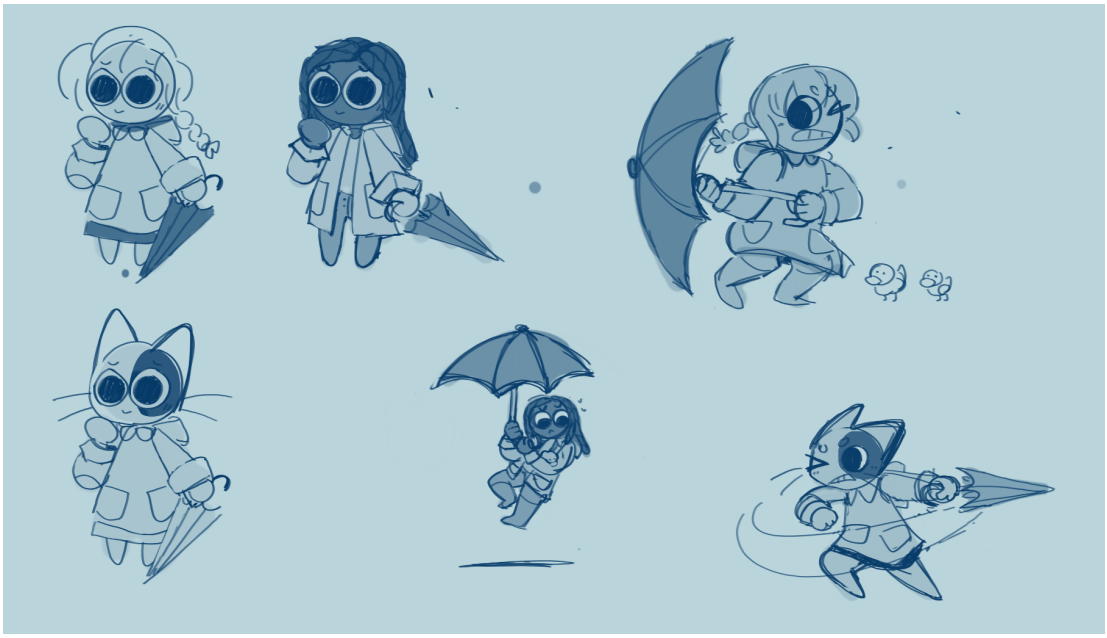


Figure 1.

In order to match the rainy setting, its music and sound effects will mostly be composed on piano. There will be a consistent rain sound during gameplay.

Gameplay

Players are able to freely explore and interact with their environment with the goal of finding all of the lost ducklings hidden around the map. Players can move through the available levels in order to complete this objective. Sometimes, a player may need to hit a box out of the way to reach a duckling. Once ducklings have been found and are following the player they will need to return them to Mama Duck while avoiding and hiding from any dogs they may see along the way home. Should a dog spot the ducklings, they will be scared away back to where they were first found.

Detailed Features and Mechanics

Exploring

- Players will be able to explore their environments by walking, sprinting, jumping, hiding, and floating (by holding the umbrella up) in order to find the missing ducklings. They will not be able to sprint while floating and they will not be able to jump or sprint while hiding.

Hitting

- On occasion, players may need to hit a box out of the way in order to reach a duckling. They will be able to do so with their trusty umbrella. Players will not be able to hit while hiding or floating.

Following

- Once the ducklings have been found, players will need to interact with them in order to get the ducklings to follow the player. The ducklings will follow and stay behind the player until they are returned to Mother Duck.

Hiding

- Should the player encounter a dog, they will want to hide the ducklings from view to protect them. They will lock their viewing direction in place and begin to "side-step" to prevent the dogs from spotting the ducklings and scaring them away.

Scared

- Ducklings are easily scared creatures, and as such should a dog spot them they will quickly run away and return to where they were first found. The player will have to go back to where each duck is hiding to get them to follow the player again.

Interactions and Rules

Quacking Up a Storm will use WASD movement mapping in order to move the character. The user can sprint by using the shift key. Users can make the character jump by pressing the space key once and float by pressing it twice. In regards to interacting with their environment, users can use E to interact with objects, the left mouse button to hit objects, and the right mouse button to open their umbrella in the direction they are currently facing. When the umbrella is open, the user's facing direction is locked in place to allow for "side-stepping" movement. The camera will initially be set behind the character but can be moved by the user via their mouse. In order to snap the camera back to its initial orientation, the user can use the C button. The character's movement will be absolute, meaning that changing the camera's position will not affect the direction the character moves.

Objectives

Describe how a player wins or loses. This can be overall and/or level-by-level.
The user wins a level by collecting all of the scattered ducklings and returning them to Mama Duck.

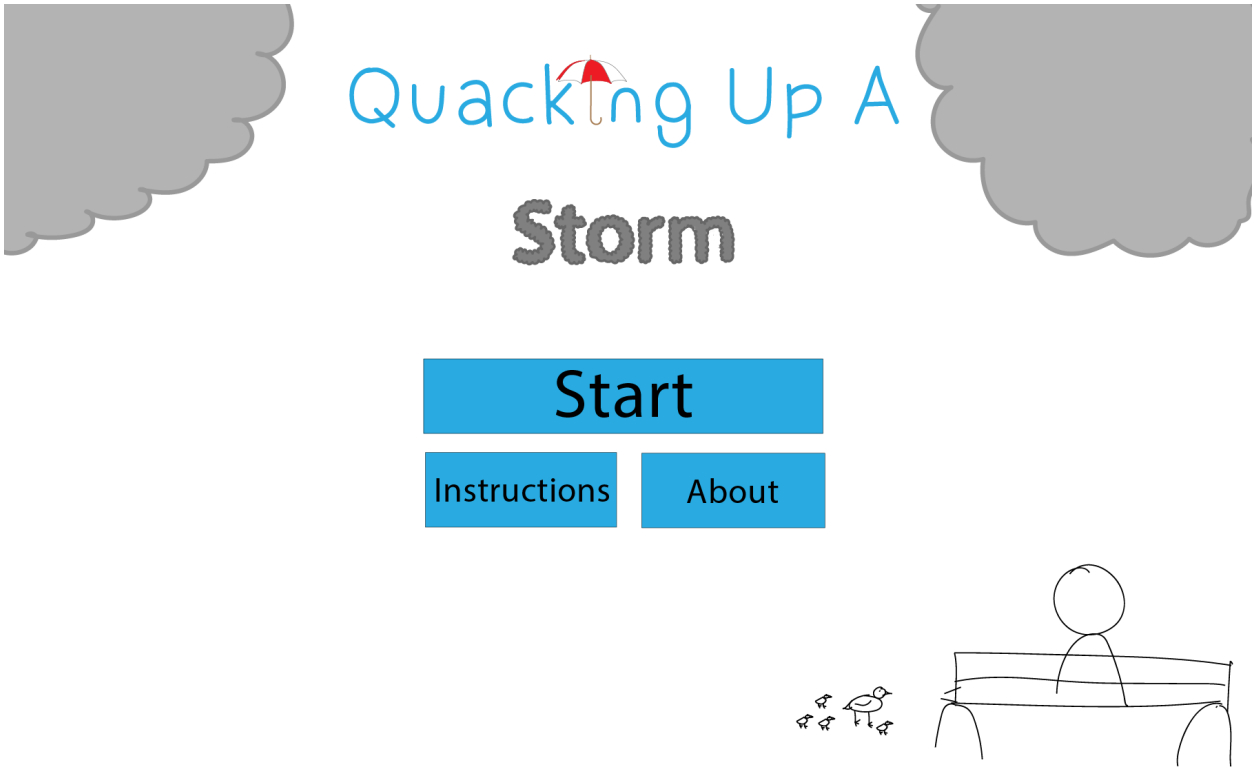
Conflict

Ducklings are hidden throughout the map, so the user must rely on audio and visual cues to find them. Some ducklings will have ended up in hard-to-reach places, so players must climb platforms in order to reach them. Enemies, like dogs, will scare the ducklings away, meaning that the user will have to relocate any scared ducklings.

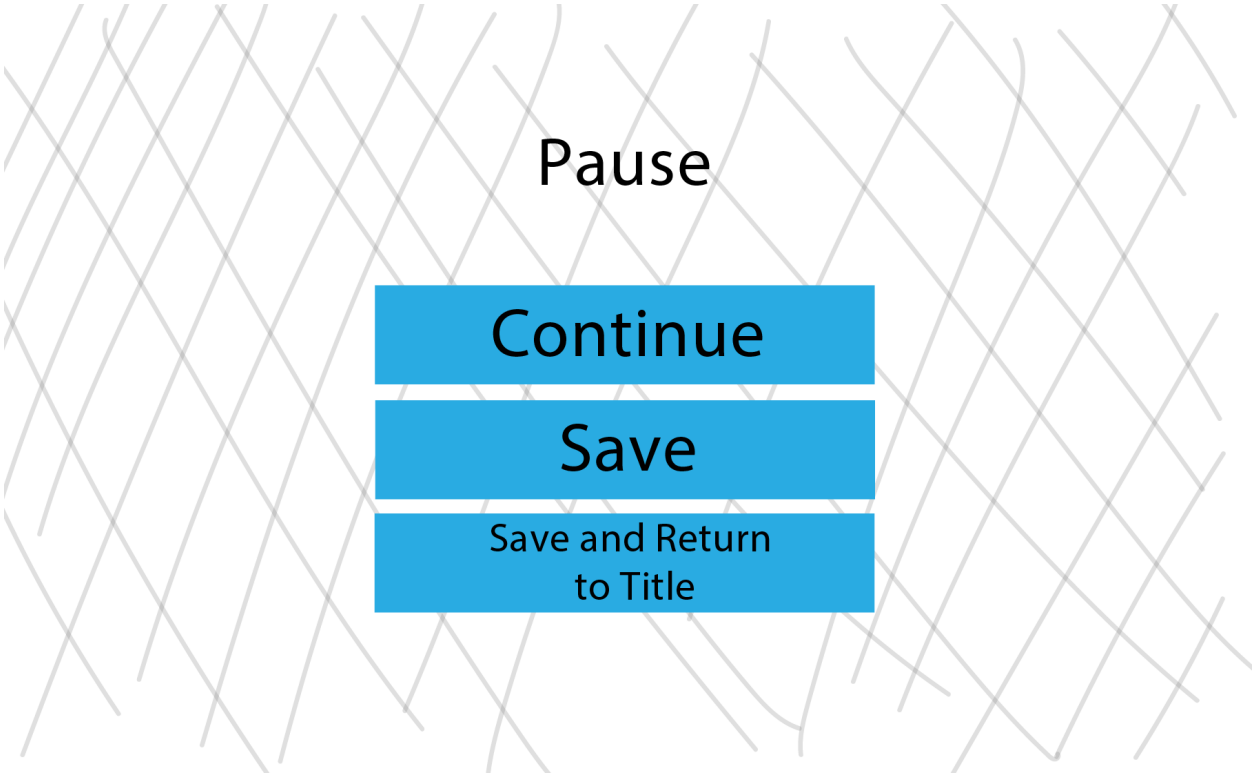
Menus and Interfaces

Describe each game menu and how the player interacts with them. Must include images showing GUI layouts for each menu. It must also include images showing the HUD and any other visual interface.

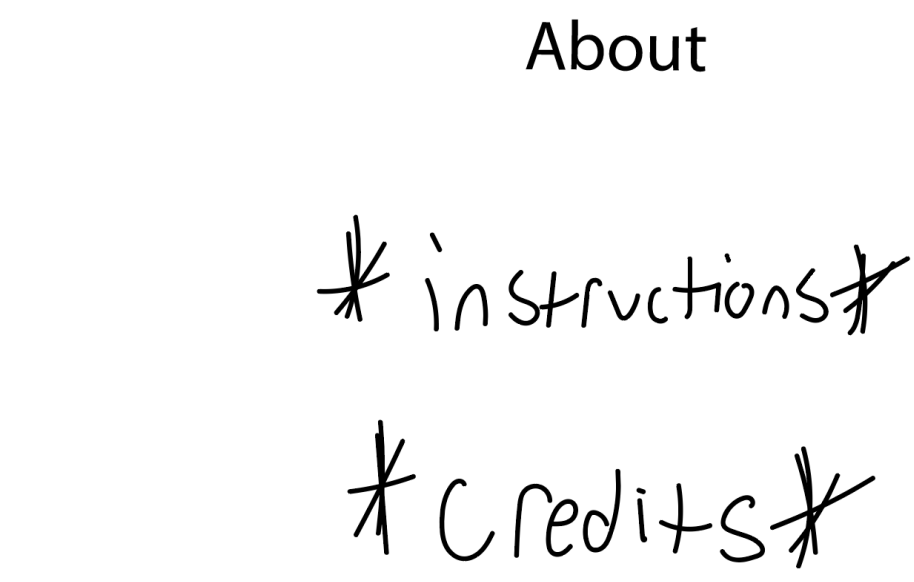
- Title Screen
    - User can start a new game, continue their game, quit the game, view the game's instructions, and view the About Screen by using their mouse



- Pause Menu
    - User can save their game and return to the title screen by using their mouse



- About Screen
    - User can view the credits and instructions for the game



- HUD
    - Shows the user how many ducklings they have collected and are left to find

Characters

Character	Main character (unnamed)	Mama Duck	The ducklings	The dogs	City dwellers
Backstory	Approached by Mama Duck while watching the weather report.	Desperately searching for her ducklings.	Got lost in the storm and became scattered around the city.	Want to play with the ducklings, who are much smaller than they are.	N/A
Personality traits	Altruistic Doesn't speak	Anxious Really likes bread	Scared Follow the main character around when they find them	Excitable Scare the ducklings	Fill up space

Story

Mama Duck, a loving mother to her brood of ducklings, took them on a river outing just as a gentle rain began to fall. Unbothered by the approaching storm, they continued their leisurely swim until the rain intensified, causing the river's current to grow too strong for the ducklings to swim against. Mama Duck managed to swim to the safety of the riverbank, heartbroken as she watched her precious ducklings being carried away by the current. She tried searching for them, but it was futile, for she was but a lone duck in the big city. After an extensive search through the protagonist's neighborhood, Mama Duck stumbled upon a peculiar, bread-shaped house, which sparked a flicker of hope. The unusual architecture gave her a sense of trustworthiness, prompting her to ask the resident for help.

Meanwhile, our main character had been watching the weather report from the comfort of their living room when an unexpected, frantic knock echoed at their door. Confused by the unexpected guest, especially in the midst of the storm, they answered the door only to find an empty stoop. It was only the persistent quacks of an anxious duck that drew their attention downward. The distressed duck conveyed the urgency of her situation, explaining that her beloved ducklings were lost and pleaded for the protagonist's help. Touched by the mother duck's plight, the main character swiftly donned their rain gear and ventured into the rain alongside Mama Duck, determined to aid in the search for her missing ducklings.

Levels

- Park (tutorial)
    - A basic city park populated by trees, greenery, and maybe a few benches and city dwellers. The user learns how to move their character, use their umbrella, detect the ducklings' audio and visual cues, and return ducklings to Mama Duck. This level is the "0th" level.
- City
    - A somewhat complex, busy cityscape with more ducklings than the park level. Populated by city dwellers, skyscrapers, trash, and possibly cars. This level is the first level with the same objective as the last.

Possible Future Content

- The addition of a sewer level, where users hide ducklings from giant rats instead of dogs.
- The addition of a hint system, whereby the user can receive hints on the locations of missing ducklings by talking to the Rat King
- The addition of the Rat King, a character who resides in the sewers and gives hints to the player on the location of any remaining ducklings. The player can find him in sewer grates
- The addition of a mini-map

Technical Design Document

Quacking Up a Storm will be developed using the Unity game engine. Game assets will be made using Blender, Autodesk Sketchbook, and FL Studio. Visual Studio will be used to write game code.

Game Objects and Components

Dynamic Game Objects

- Main Character
- Mother Duck
- Duckling
- Dog
- City Dweller
- Trash
- Terrain

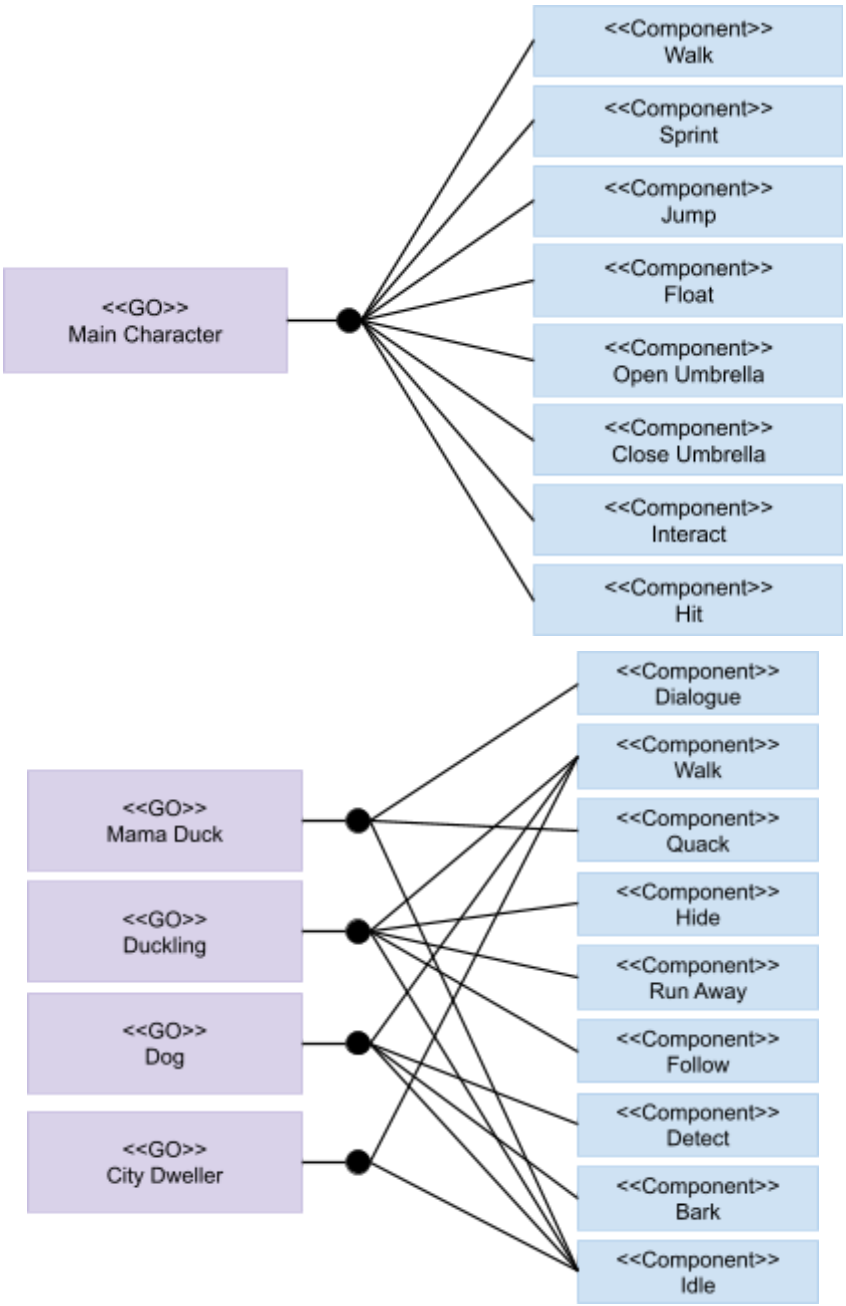
Static Game Objects

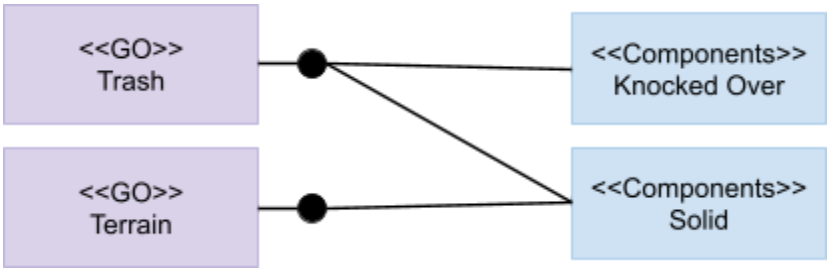
- Title Screen Icons
    - New Game Button
    - Continue Game Button
    - Quit Game Button
    - Background Image
    - Studio Logo
- Pause Menu Icons
    - Resume Game Button
    - Return to Menu Button
    - Game Status Indicators
- HUD Icons
    - Number of Ducks Remaining

Components

- Walk
- Sprint
- Jump
- Float
- Open Umbrella
- Close Umbrella
- Interact
- Hit
- Dialogue
- Quack
- Hide
- Run Away

- Follow
- Detect
- Bark
- Idle
- Knocked Over
- Solid





Assets

Visual Assets

- Main Character Character Model, Textures, Rigging, and Animations
- Mother Duck Model, Textures, Rigging, and Animations
- Ducking Models, Textures, Rigging, and Animations
- Dog Model, Textures, Rigging, and Animations
- Breakable Box Model, Texture, and Animation
- City Dweller Model, Texture, Rigging, and Animation
- Level Terrain
    - Park Terrain Model and Texture
    - City Terrain Model and Texture
    - Platforming Objects Model and Texture

Audio Assets

- Title Screen theme song
- Park Level theme song
- City Level theme song
- Sewer Level theme song
- Quack sound effect
- Cheeping sound effect
- Walking sound effect, for both the main character and ducklings
- Jumping sound effect
- Rain sound effect
- Sound effect that plays when the user hits something with their umbrella

Story Assets

- “We’ll eventually see this turn into a possibility of flooding, but here’s a look at the latest warnings that we have now that have been issued by the city. A warning was just issued for the south side of the city which goes until 3 p.m. Be prepared for strong gusts of wind, penny-size hail, and intense downpours with lots of thunder and lightning. Here’s a look at that system that’s causing all that severe weather. You can see all the rain associated with it in those deep red areas, but it’s moving at a pretty fast pace, which is why we could have some pretty strong wind gusts here– 60 to 70 miles per hour. Some areas could see things lessen up a little bit as it moves on, particularly in the west side of the city. For the rest of the city, you can see where we’ve had light to moderate showers

throughout the day, but there's another pocket coming up from the southwest that's getting ready to head over us."

- *Quack*
  "OhthankGodyouansweredthedoormyducklingsweresweptawayinthestormanIcan'tfindthemI'vebeenlookingforthemforhourspleasehelpmeIdon'tknowwhattodo–"

Task List

Milestones

Proof of Concept (POC) - Target Date: 12/01/2023

Description: By 12/01/2023, we will have a proof of concept that demonstrates the core functionality of *Quacking Up a Storm*. It will also aim to validate the feasibility and viability of our project. This milestone serves as the foundation upon which the rest of the project will be built.

Key Deliverables:

- Functional prototype showcasing core features
- Technical documentation outlining the architecture, technologies, and methodologies used
- A presentation to the project stakeholders demonstrating the POC's capabilities and potential

Success Criteria:

All essential functionalities outlined in the project proposal must be functional in the prototype. The prototype should be stable and reliable, with minimal errors and issues. We should be able to effectively articulate the technical and conceptual aspects of the proof of concept to project stakeholders.

Final Exam - Target Date: 12/13/2023

Description:

By 12/13/2023, we aim to have a fully developed, tested, and refined project ready for deployment and use by our intended audience.

Key Deliverables:

- A fully functional and tested product that meets all project requirements and objectives
- User documentation and manuals for the end-users, ensuring they can use the product effectively
- A comprehensive final report summarizing the entire project, including challenges, successes, and lessons learned
- A presentation for project stakeholders to showcase the completed project and its impact

Success Criteria:

The product must meet all defined project requirements and objectives and should be thoroughly tested, with identified issues resolved. All end-user documentation should be clear, concise, and readily available. The final report should provide an insightful overview of the project journey.

The presentation to stakeholders should effectively communicate the project's successes and achievements.

Schedule

Proof of Concept (POC) - Target Date: 12/01/2023

10/27/2023	Complete GDD, TDD, and Task List.
10/30/2023	Begin development of the “foundation” of the game. The “foundation” includes the base game code, sound effects, level design, and asset modeling. Ideally, we should begin to animate the main character’s asset. Begin storyboarding cutscene. Base game code includes: - The user is able to walk - The user is able to sprint - The user is able to jump - The user is able to move the camera - The user is able to snap the camera back to its original position
11/03/2023	Complete Dev Update 1
11/10/2023	Complete base game code, sound effects, level design, asset modeling, and complete Dev Update 2. At a minimum, the asset models for the main character and ducklings should be completed. Begin modeling for park level, create background music for title screen and park level, and create HUD. Begin writing game code. This will include: - The user can interact with objects - The user can hit objects - The user can open their umbrella Ideally, animations for the main character will be complete. If asset models are not complete, continue working on them. If they are completed, begin creating textures for them. Begin working on animations for remaining assets.
11/17/2023	Park level should be feature complete. Background music for title screen and park level should be complete. Complete Dev

	Update 3. Begin modeling for city level and background music. If assets and textures are completed, begin animating cutscene. Ideally, all animation should be completed.
12/01/2023	Park level should be fully complete to be presented for POC. Ideally, city level will be feature complete.

Final Exam - Target Date: 12/13/2023

12/08/2023	City level should be feature complete. Cutscene should be animated. If necessary, begin voice acting. Begin creation of end screen.
12/13/2023	Cutscene should be complete and in the game.

Quality Assurance (QA) Testing

The game's components and gameplay features to be tested are as follows:

Game Components:

1. Walk
2. Sprint
3. Jump
4. Float
5. Open Umbrella
6. Close Umbrella
7. Interact
8. Hit
9. Dialogue
10. Quack
11. Hide
12. Run Away
13. Follow
14. Detect
15. Bark
16. Idle
17. Knocked Over
18. Solid

Gameplay Features:

- Player Objectives: Conditions for winning and losing levels.
- Conflict and Challenges: Player interactions with hidden ducklings, platforming challenges, and enemy behaviors.

QA Testing Schedule:

Phase 1: Component Testing - Logic Errors

Duration: From 10/30/2023 to 11/10/2023

- Week 1: Foundation Testing:
  - Walk, Sprint, Jump, Float: Test character movement and actions.
  - Camera Control: Verify that the camera functions correctly.
  - Snap Camera: Ensure the camera resets as expected.
  - Base Game Code: Test the core game functionality.
- Week 2: Interactions and Basic Features Testing
  - Interact, Hit: Verify interactions with objects.
  - Open Umbrella: Test umbrella functionality.
  - Sound Effects: Check the audio elements.
  - Level Design: Verify initial level structure.
  - Asset Modeling: Ensure asset models are integrated.

Phase 2: Component Testing - Runtime Errors

Duration: From 11/10/2023 to 12/01/2023

- Week 3: Asset Completion Testing
  - Main Character and Ducklings: Ensure asset models are fully completed.
  - Background Music: Test audio for title screen and park level.
  - HUD: Verify the functionality of the Heads-Up Display.
- Week 4: Code and Animation Testing
  - Game Code: Test features like object interactions and user actions.
  - Texture Completion: Ensure textures for assets are integrated.
  - Animation: Verify all animations for characters and assets.
  - Level Feature Completeness: Test that park level is fully featured.
  - City Level Completion: Test features in the city level.

Phase 3: Gameplay Feature Testing - Logic Errors

Duration: From 11/10/2023 to 12/01/2023

- Player Objectives: Test conditions for winning and losing levels.

- Conflict and Challenges: Validate player interactions with hidden ducklings and platforming challenges.

Phase 4: Gameplay Feature Testing - Runtime Errors
Duration: From 11/10/2023 to 12/01/2023

- Player Objectives: Test conditions for winning and losing levels in runtime.
- Conflict and Challenges: Validate the impact of gameplay features on runtime performance.

Phase 5: Integration Testing
Duration: From 11/10/2023 to 12/01/2023

- Test the integration of all components and gameplay features to ensure they work together smoothly.

Phase 6: User Acceptance Testing (UAT)
Duration: From 11/10/2023 to 12/01/2023

- Gather user feedback and ensure the game is enjoyable and free of major issues.

Reporting and Bug Tracking:
Throughout the testing process, detailed bug reports will be generated for any issues discovered. These reports will include steps to reproduce the problem, severity, and any other relevant information. Bugs will be categorized as critical, major, or minor, and the development team will be responsible for addressing and resolving these issues.