

Aliens vs Zookeepers Game Design Document

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Table of Content

[Game Overview](#)

[Game Concept](#)

[Feature Set](#)

[Aliens](#)

[Zookeepers](#)

[Gameplay and Mechanics](#)

[Gameplay](#)

[Gameplay Progression](#)

[Core Gameplay Structure](#)

[Objectives](#)

[Game Mechanics](#)

[Physics](#)

[Movement](#)

[Screen Flow](#)

[Options](#)

[Game World](#)

[Overview](#)

[The Zoo](#)

[Travel](#)

[Scale](#)

[Objects](#)

[Weather and Time of Day](#)

[Characters](#)

[Overview](#)

[Player Characters](#)

[Non-Player Characters](#)

[Alien](#)

[Backstory](#)

[Special Abilities](#)

[Actions/Animations](#)

[Zookeeper](#)

[Backstory](#)

[Special Abilities](#)

[Animals](#)

[Backstory](#)

[Actions/Animations](#)

[User Interface](#)

[Overview](#)

[Artificial Intelligence](#)

Technical and System Description

Target Hardware

Development Hardware and Software

Scripting Language

Camera

1st Person Camera

3rd Person Camera

Game Engine

Management

Overview

Detailed Schedule

Ideation Sprint

Prototype Sprint

Production Sprint

Release Sprint

Game Art

Concept Art

Game Overview

Game Concept

Aliens vs Zookeepers is a multiplayer real time hide-and-seek game. This game takes place at Monty Mamba Zoo. A group of aliens try to abduct specific animals from the zoo to complete their research goal. Therefore the zookeeper must stop them from performing abduction by tranquilizing all of them before the timer ends or before the aliens complete their goal. There can be up to 4 players in one room. Player 1 controls the zookeeper, the rest of the players in the same room control the aliens. The main focus of the game is player versus player strategic gameplay.

Feature Set

- 3D world
- Animals in the zoo start in their pens and wander around randomly throughout the game
- Can have up to 4 players per game

Aliens

- Aliens have the ability to abduct a closest animal that's in range with a casting time
- Aliens can transform into animals (with cooldown) and produce corresponding animal sounds randomly. However, when the aliens start abducting animals, they automatically transform back to aliens.
- Aliens can also go through meerkat burrows (with cooldown)
- Aliens can see other aliens' name tags (if there are more than 1 alien)

Zookeepers

- Zookeepers can shoot tranquilizers (with cooldown). If it hits an alien, the alien (in both alien form and animal form) gets eliminated immediately
- Zookeepers can switch the tool in hand (with cooldown) from tranq gun to an alien scanner. It provides the feedback of proximity of the closest alien to the zookeeper but not the direction

Gameplay and Mechanics

Gameplay

Gameplay Progression

- All players join the game at the same time. However, the zookeeper does not have control or sight for the first 10 seconds. Within these 10 seconds, the aliens can

check their goal, observe their current location, find a place to hide or transform into an animal, and start looking for target animals

- As the game progresses, the zookeeper can see the remaining target animals aliens need to abduct as well as the remaining number of aliens. The aliens can see the number of each type of animal they need to abduct as well as the number of aliens remaining. Both types of players can see the timer on screen. Once the timer ends, the aliens win

Core Gameplay Structure

Real-time player-versus-player strategy

Objectives

Within the given time:

- Alien: Abduct all the listed target animals without being tranquilized
- Zookeeper: tranquilize all the aliens before they finish abducting all the target animals

Game Mechanics

Physics

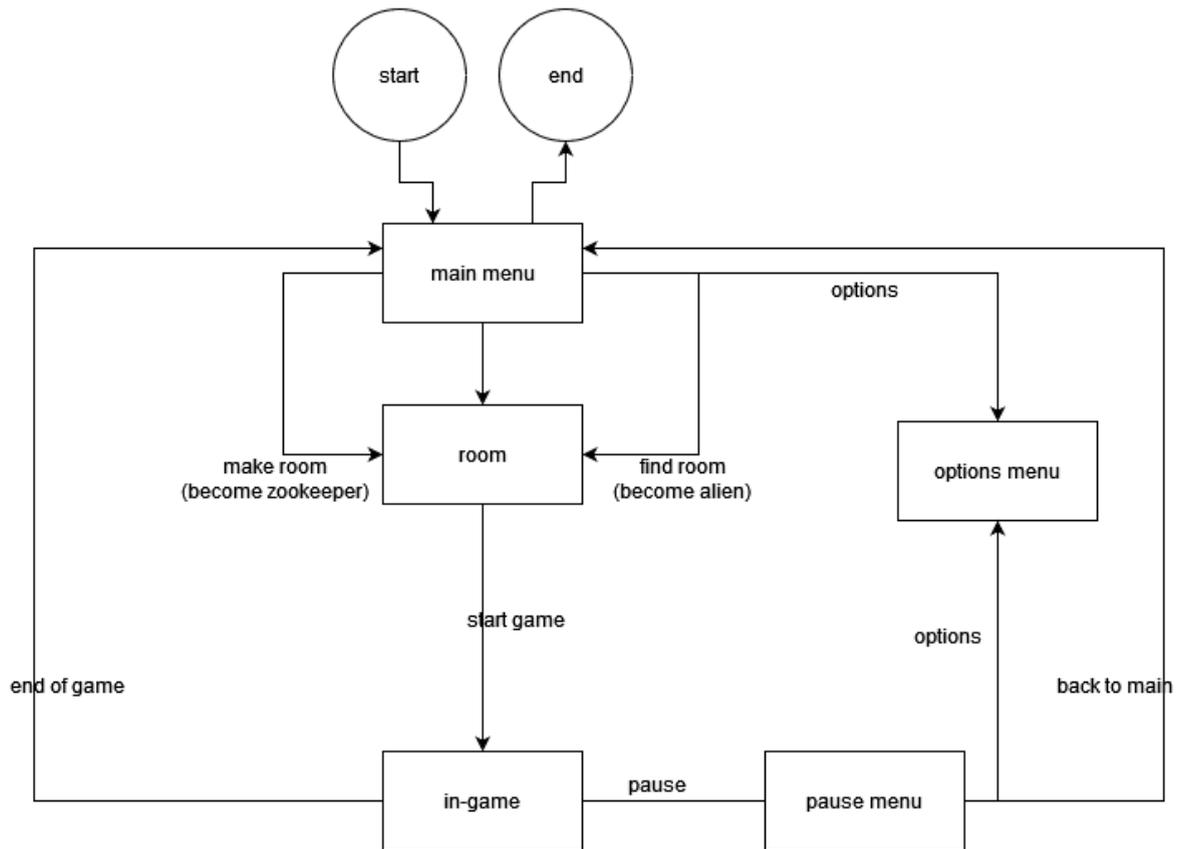
- Tranq darts are affected by gravity
- all visible models (except meerkat burrows) have collisions in the zoo

Movement

- Generally, players can move the character in the game world using WASD key input
- For the aliens specifically, players can burrow through one meerkat burrow to move the character to the connecting burrow

Screen Flow

Screen Flow flowchart:



Options

Music: adjust music volume

SFX: adjust SFX volume

Game World

Overview

The game takes place in a zoo that is structured to give and block line of sight of the zookeepers and give mobility to the aliens.

The Zoo

The zoo has six enclosures, each enclosure is made from bricks and glass allowing for obstruction of vision and allowing vision from specific angles. Each enclosure is large enough to hold at least five of the animals it is intended for and have enough room for movement between them.

Travel

Burrows are scattered around the map, one in each enclosure. The position is meant to be visible from at least one window of the enclosure, and must not be a straight walk from the

entrance of the enclosure. Each burrow is set up to take the player to the opposite most side of the map, giving the aliens some recovery from almost being captured.

Scale

The zoo is about 70-80 meters in diameter. This allows the zoo to hold around 30 animals with more than enough room to move around without being cramped between animals and a wall.

Objects

There are props scattered around to give more character to the zoo and serve no other purpose than to be another obstacle to the players.

Weather and Time of Day

The time is consistent at all times to be a sunset showing stars in the sky. The weather is clear allowing easy sightings of UFOs in the sky.

Characters

Overview

Characters in this game are designed to be close to spherical shape with bouncing animation as they walk. All characters have the same movement speed.

Player Characters

- Alien
- Zookeeper

Non-Player Characters

Animals - Elephant, panda, lion, sloth, penguin, meerkat

Alien

Backstory

A creature that comes from space. Focuses on animal research.

Special Abilities

- Abduction:
 - after a short casting time without being interrupted (actively moving, being tranquilized and transforming into an animal), the closest animal in range to the alien is abducted successfully
 - abduction will transform aliens back to the alien form if it's in animal form

- Transformation:
 - with a cooldown (short), aliens can transform into a desired animal form
 - alien can still be tranquilized and be detected using scanner while in animal form
- Burrowing:
 - with a cooldown (long), aliens can burrow through a meerkat burrow to the connecting one. This is a way to get away from the zookeeper but has very long cooldown and has a dust trail showing the direction of the connecting burrow

Actions/Animations

- When the alien burrows, a trail of dust follows the alien to the destination and plays a burrow sound
- An animation of a UFO approaching plays when the alien is casting abduction to an animal. As the abduction casting finishes, an abduction sound is played
- Alien turns into the desired animal immediately when the corresponding key is pressed and a transformation sound is played

Zookeeper

Backstory

A guy who works at Monty Mamba Zoo. He tries his best to get rid of the invading aliens.

Special Abilities

- Tranquilizer:
 - a gun that is used for tranquilizing aliens. With a cooldown (short), the zookeeper can shoot a dart in the direction he is facing
- Scanner:
 - a handheld device that plays sound with different speed base on the nearest alien's proximity
 - scanner cannot give feedback on the direction of the nearest alien

Animals

Backstory

The animals who live a happy life in Monty Mamba Zoo.

Actions/Animations

Animals move to a random point nearby and the hopping animation plays.

User Interface

Overview

The UI in the game has slight differences between the zookeeper and alien players; but, overall is consistent to not confuse players when rotating characters. A skill bar is located at the bottom of the screen containing the icons and action keys within the icon images. The alien players have a wider skill bar due to the many animals they can transform into; whereas, the zookeepers will have a shorter skill bar to toggle between the dart gun and the radar gun. When approaching a certain object, an action key icon will appear above the skill bar: "abduct animal", "Transform" or "Burrow" for aliens and "Shoot Trang" for zookeeper. Current game status between the two types of players is located at the top left corner that will display different information. The timer will also always be displayed at the top of the screen.

Zookeeper Point of View:



Alien Point of View:



Artificial Intelligence

The animals in this game share the same AI behavior. The main AI behavior is pathfinding. The AI sets a destination and uses navmesh to navigate to the destination point. It remains at the same place if no available path is found. When the animal is being abducted, the pathfinding stops and it remains in the same place.

Technical and System Description

Target Hardware

- PCs

Development Hardware and Software

- Hardware: PCs
- Software: Unity 2021.3.3f1

Scripting Language

- C#

Camera

1st Person Camera

This camera is applied to the Zookeeper character. This camera is a child of the player character and can be freely rotated along the y-axis. It can be rotated along the z-axis with restriction to avoid crashing into the ground. The Zookeeper character is hidden on the local end to avoid seeing undesired visible objects. The Zookeeper character also rotates along the y-axis when the player rotates the camera along the same axis.

3rd Person Camera

This camera is applied to the Alien character. This camera always looks at the alien and can be rotated freely along the y-axis. The Alien character does not rotate no matter which way the camera is looking at. The camera has restrictions while being rotated along the z-axis to avoid crashing into the ground.

Game Engine

Unity 2021.3.3f1 was used to develop this game

Management

Overview

This project was made for Greenlight Jam starting from 5/16/2022 to 6/19/2022. The entire project was divided into 4 sprints: ideation - 1 week, prototype - 1 week, production - 2 weeks, and release - 1 week. During each sprint, the team has specific goals to complete to ensure project progress.

Detailed Schedule

Ideation Sprint

- Brainstorming meeting
- Documentation, concept art

Prototype Sprint

- Setup project and Github
- Basic movements of the player character
- Camera movement
- Level greybox

Production Sprint

- Add in planned game mechanics
- Optimize multiplayer feature
- Add in assets

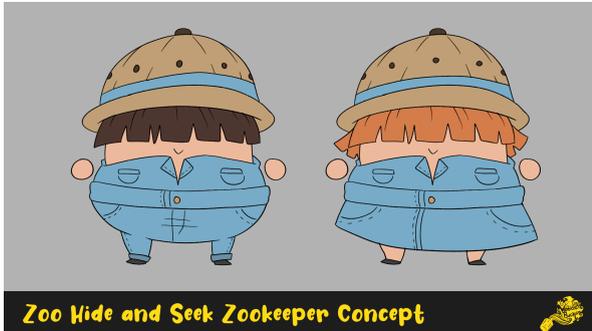
Release Sprint

- Test and fix bugs
- Complete asset implementation

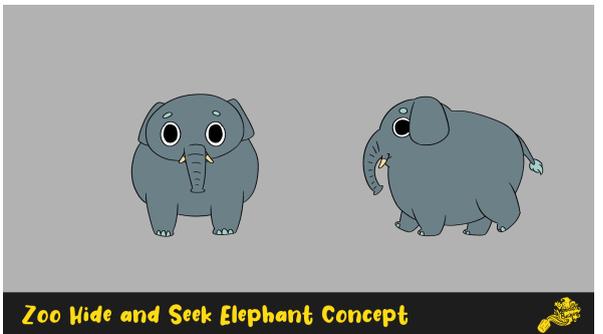
Game Art

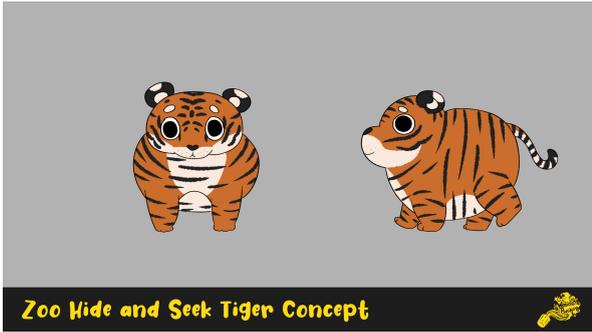
Concept Art

- characters



- NPCs





- Environment





Zoo Hide and Seek Souvenir Merch Concept 



Zoo Hide and Seek Zookeeper Hut Concept 

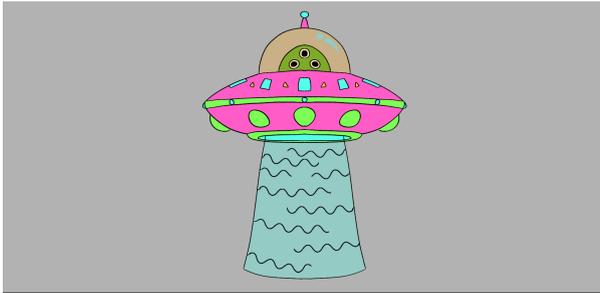


Zoo Hide and Seek Souvenir Exterior Concept 



Zoo Hide and Seek Map Concept 

- props



Zoo Hide and Seek UFO Concept 