

Animal Tales Final Summary Report

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Project Overview: Animal Tales is a virtual reality simulation game with both single and multiplayer functionality where players can experience life through the lens of various animals in their natural habitat. From hunting to hibernation, this simulator will immerse players as a creature of their choice, providing insight on what the animal senses throughout their daily lives. Players are able to choose aspects about the animal such as habitual environmental conditions, feed choice, and exploration habits. Time based tracking is built in to simulate the environment as close as possible to the real world, and players can dive into a new realm of living that fully aims to be as close as possible to the world outside.

Purpose of the Project: The main purpose of this project is to educate users on animal lifestyle and their wildlife habits throughout a variety of tasks and quests as the user navigates with their virtual animal identity. Additionally, this game aims to garner awareness for animals that are currently facing the possibility of endangerment and extinction, thus giving players the opportunity to view external organizations that aim to conserve wildlife such as charities, nonprofits and research that are raising support for these causes. We aim to highlight specific orgs such as the Aquatic Life Institute or Faunalytics. Besides educational purposes, any user of any age can have a profound experience of what it is like to become this animal for an indefinite amount of time. This project also offers domestic animal choices, serving as a great tool for users who own household pets who want to explore what their pets are experiencing.

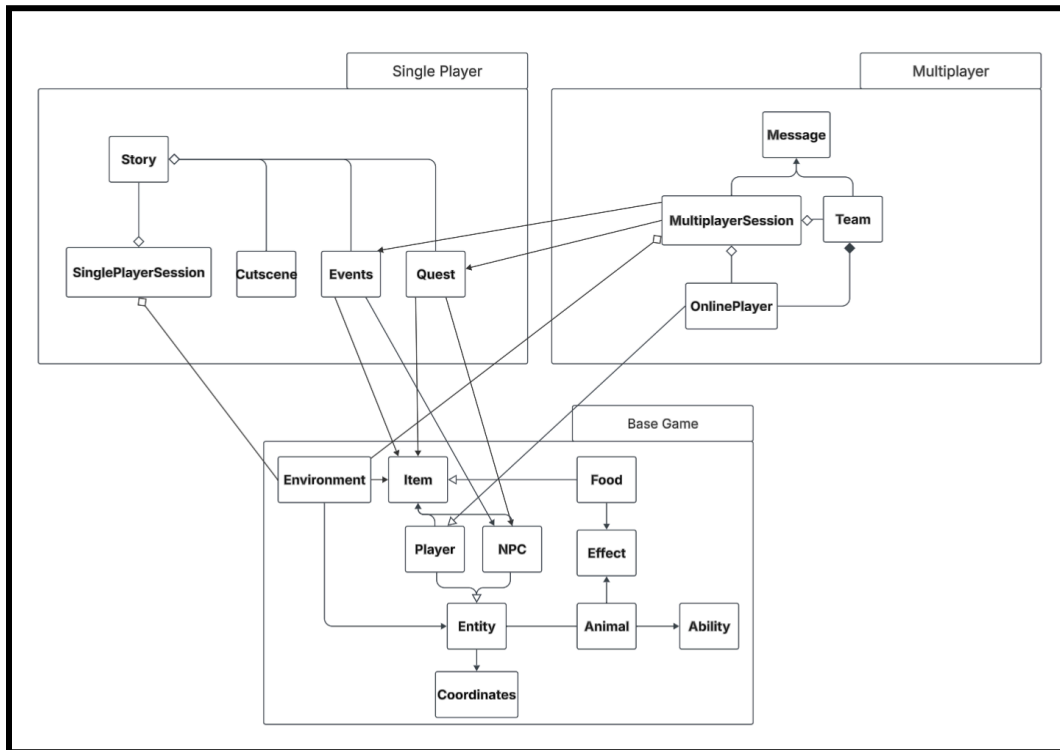
Requirements:

- **Functional Requirements:** Functional requirements for the Animal Tales application include providing users with a variety of animals and environments to experience, the ability to interact with their environment and other NPC or player animals, the ability for the state (health, age, hunger, etc) of their own animal to be updated, help options to direct players through the controls and gameplay, and completely functioning gameplay mechanics.
- **Non-Functional Requirements:** Some essential non-functional requirements are providing excellent server uptime, accurately depicting the animals and environments provided in the game, safely ensuring progress and data is saved in the event of a system crash, providing support to many VR systems, and regularly updating/supporting the game.

Design Goals: Design goals emphasized for this project aim to build an application that is efficient, cross functional, and engaging. Starting off with application speed, response time between user actions and system requirements should be as close to minimal as possible. This is to ensure smooth gameplay. The design should keep in mind that this game should seamlessly

run on all types of VR systems, i.e. Oculus, HTC Vive, Meta Quest etc. When developing the gameplay, an emphasis on realism in regards to animal behaviour should be highlighted through the options provided for the player. Finally, an emphasis on security should be prevalent especially in multiplayer mode where users are connecting to a server and interacting with each other.

System Design:



The final system of the Animal Tales application will be composed of three closely related packages: the Base Game, Single Player, and Multiplayer. The Base Game package will contain the foundational classes of the game as a whole, such as the classes for Animals and Environments. This package will also be responsible for providing the methods necessary for changing the state of these objects (i.e the animals' health, age, hunger, etc.) as well as handling the basic game mechanics of the game (moving, collecting items, attacking, eating, etc.).

The other two packages, Single Player and Multiplayer, will use many of the classes from the Base Game package and provide plenty of additional features to better reflect the gamemode each of those packages is meant to represent. The Single Player package will provide all the classes necessary for playing the Single Player mode of the game. This mostly entails having a Story class which can be used to provide unique and compelling story sessions for the various animal options provided in the game. The Multiplayer package will mostly focus on providing users the ability to interact and communicate with one another. This means providing players with the ability to form teams, send messages, use voice chat, attack other players, or work with others to complete quests and events.