ALIEN HUNTER

AUGMENTED

AND

VIRTUAL REALITY

(UCS752)

PROJECT

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November 2023

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Introduction

This report delves into the conception, development, and execution of "Alien Hunter" an augmented reality (AR) game designed for Android devices using the powerful Unity game engine.

This report provides a detailed overview of the game's objectives, the intricacies of its design and development, the prerequisites for its successful deployment, and comprehensive instructions guiding players through the gameplay experience. Through the lens of Alien Hunter, we endeavor to contribute to the growing body of knowledge surrounding AR gaming and offer insights into the collaborative and innovative processes undertaken in its development.

Objectives

The development of Alien Hunter was driven by a set of defined objectives, each contributing to the overarching vision of creating an immersive and engaging augmented reality (AR) gaming experience. The key objectives of Alien Hunter include:

1) Exploration of Augmented Reality (AR) Technology: To delve into the capabilities of AR technology and harness its potential for creating interactive and dynamic gaming environments.
2) Enhancement of User Engagement: To provide players with a captivating and immersive gaming experience that goes beyond traditional mobile games, leveraging AR to blur the lines between the virtual and real worlds.
3) Hands-on Experience with Unity Game Engine: To gain practical experience in game development using the Unity game engine, exploiting its features and capabilities for creating a visually appealing and technically sophisticated AR game.
4) Innovative Use of Device Features: To utilize the unique features of Android devices, specifically the camera and gyroscope, to create a gameplay experience that seamlessly integrates with the player's physical surroundings, offering a new level of interactivity.
5) Skill Development in Game Design: To enhance skills in game design, including level progression, enemy dynamics, and user interface elements, fostering a deeper understanding of the intricacies involved in crafting an engaging gaming environment.

6) User-Friendly Gameplay: To ensure accessibility by designing intuitive gameplay mechanics, allowing players of varying skill levels to easily understand and enjoy the game.
7) Points-Based Progression System: To implement a rewarding progression system where players accumulate points for defeating enemies, encouraging continuous engagement and providing a sense of accomplishment.
8) Dynamic and Responsive Gameplay: To create a dynamic gaming experience where the game world responds to real-world movements, courtesy of the phone's gyroscope, providing players with a sense of agency and control.

These objectives collectively guided the development process of Alien Hunter, shaping it into an innovative AR game that not only met technical criteria but also delivered an enjoyable and memorable experience for players.

Design and Development

The following sections provide an in-depth look at the design choices, development methodologies, and the utilization of the Unity game engine to bring Alien Hunter to life.

1) Unity Game Engine:

The selection of the Unity game engine was paramount to the success of Alien Hunter. Unity's versatility and accessibility allowed our team to seamlessly integrate AR elements into the game. Leveraging Unity's robust development environment, we were able to create a visually compelling and technically sophisticated gaming experience. Unity's cross-platform capabilities ensured compatibility with a wide range of Android devices, providing a broad audience for our AR creation.

2) AR Implementation:

The heart of Alien Hunter lies in its AR implementation, which relies on the capabilities of the phone's camera and gyroscope. The camera captures the player's real-world surroundings, while the gyroscope detects device movements, allowing for a dynamic and responsive gaming experience. Unity's AR Foundation framework facilitated the integration of these features, enabling the game to overlay virtual enemies seamlessly onto the physical environment. This synergy between Unity and AR technology created an immersive experience, blurring the lines between the digital and real worlds.

3) User Interface and Visual Design:

The user interface (UI) of Alien Hunter was designed with simplicity and intuitiveness in mind. A clean and unobtrusive HUD (Heads-Up Display) provides players with essential information, ensuring a focus on the AR gameplay. Visual design elements were crafted to enhance the immersive experience, with vibrant enemy models and visually distinct capsules for additional bullets. The aim was to create a visually appealing environment that complemented the AR features without overwhelming the player.

4) Dynamic Enemy Behavior:

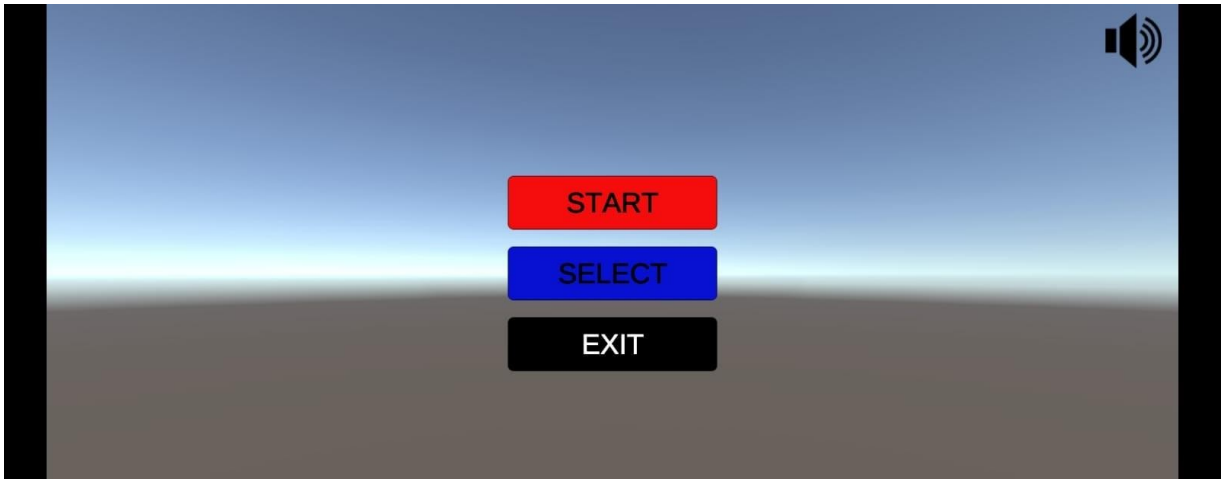
The enemies in Alien Hunter were programmed with dynamic behavior to enhance the challenge and excitement of the gameplay. Leveraging Unity's scripting capabilities, we implemented AI algorithms that govern enemy movements, making them unpredictable and responsive to the player's actions. This dynamic behavior not only adds an element of surprise but also requires players to adapt their strategies, keeping the gaming experience engaging and unpredictable.

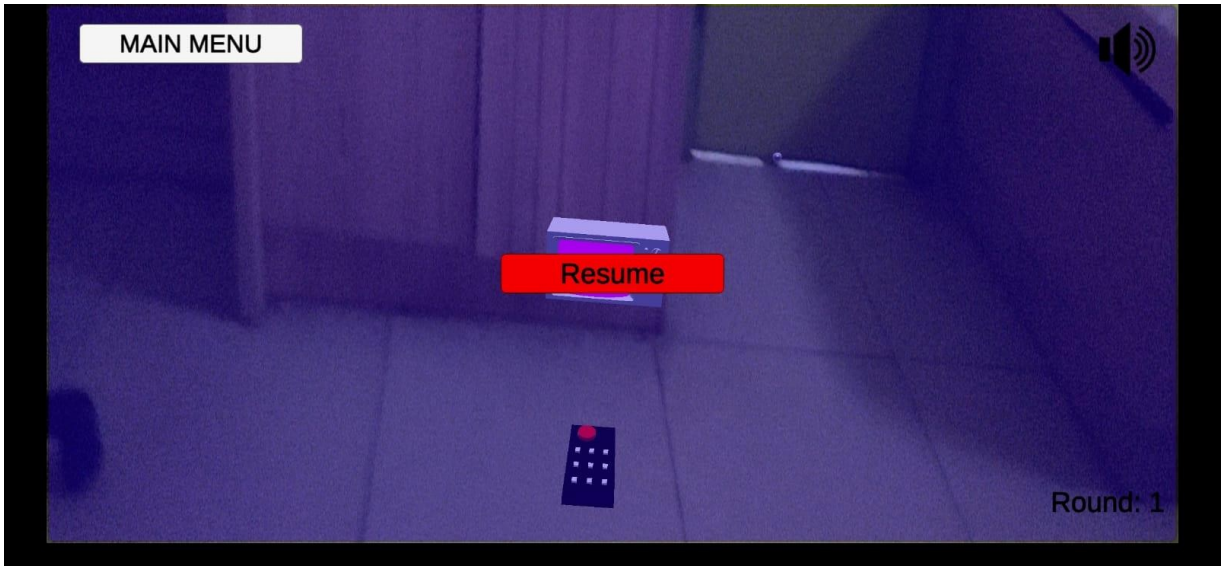
5) Iterative Development Process:

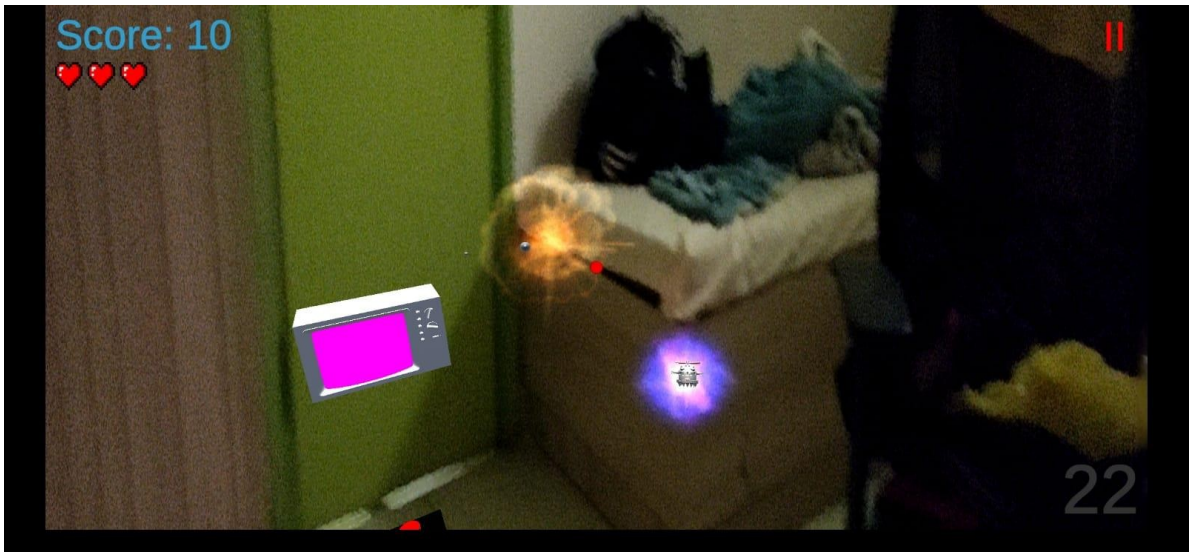
Alien Hunter underwent an iterative development process, with continuous testing and refinement. Regular playtesting sessions allowed the team to gather valuable feedback, leading to adjustments in gameplay mechanics, enemy behavior, and overall user experience. This iterative approach ensured that the final product met the intended objectives and provided an enjoyable and polished AR gaming experience.

In conclusion, the design and development of Alien Hunter represent a harmonious blend of creative vision and technical expertise. Unity's capabilities, coupled with a strategic approach to AR implementation, resulted in an engaging and visually striking mobile game that showcases the potential of augmented reality in the realm of gaming. The iterative development process, user-focused design, and dynamic enemy behavior collectively contribute to Alien Hunter's standing as a noteworthy AR gaming application.

Screenshots







Requirements

Operating System: Android 7 or later

Memory: 3GB Ram

Storage: At least 1GB of free storage space

Network: No internet connection required

Gameplay Instructions

To embark on the augmented reality adventure of Alien Hunter, simply tap the "Start" button in the main menu. Enemies will materialize in your surroundings; use your device's camera and gyroscope to locate and align them with the aim dot. A swift tap on the screen unleashes your firepower. Earn points for each vanquished foe, and collect floating capsules for extra bullets. Progress by defeating all enemies to advance levels, but beware—running out of bullets or health signals the end of the game. The intuitive controls and dynamic gameplay promise an immersive and thrilling AR experience.

Conclusion

In conclusion, Alien Hunter represents a successful fusion of augmented reality and mobile gaming. Through strategic design, Unity integration, and player-centric development, we've created an engaging AR experience. Alien Hunter not only achieves its objectives but also stands as a testament to the potential of AR in mobile gaming.