-GAME DEVELOPMENT IN UNITY-

In this project I learn how to develop video games using the C# programming language and the Unity game engine on Windows . Why use C# and Unity instead of some other language and game engine? Well, C# is a great language for learning how to program and then programming professionally. Also, the Unity game engine is very popular with indie game developers; Unity games were downloaded over 20,000,000,000 times in 2019!

Throughout the course of this project I learnt core programming concepts that apply to lots of programming languages, including C#, and how to apply those concepts when developing games.

INTRODUCTION

This project comprises of a video game called Asteroids developed in Unity game engine using principles of C# programming language. Currently, the game runs solely on PC with the help of Firefox Explorer. Asteroids is a single player 2D game consisting of a score board and a single level. It is a space-themed multidirectional shooter game in which the player controls a single spaceship in an asteroid field which is periodically traversed by flying saucers. The objective of the game is to shoot and destroy the asteroids and saucers, while not colliding with either, or being hit by the saucer. The game becomes harder as the number of asteroids increases.

LITERATURE REVIEW

G. Jung, a Swiss psychiatrist and psychoanalyst, once said, “One of the most difficult tasks men can perform, however much others may despise it, is the invention of good games.” History states that the first ever video game was developed by a physicist, William Higinbotham, in the 1950s. Today, about seven decades later, the gaming industry has become a major contributor to the global entertainment economy. This sector poses interesting and challenging opportunities for prospective engineers.

This project is inspired by the very famous arcade game – ASTEROIDS!

Asteroids is a space-themed multidirectional shooter arcade game designed by Lyle Rains, Ed Logg, and Dominic Walsh and released in November 1979 by Atari, Inc. The player controls a single spaceship in an asteroid field which is periodically traversed by flying saucers. The object of the game is to shoot and destroy the asteroids and saucers, while not colliding with either, or being hit by the saucers' counter-fire. The game becomes harder as the number of asteroids increases.

Asteroids was one of the first major hits of the golden age of arcade games; the game sold over 70,000 arcade cabinets and proved both popular with players and influential with developers. In the 1980s it was ported to Atari's home systems, and the Atari VCS version sold over three million copies. The game was widely imitated, and it directly influenced Defender, Gravitar, and many other video games.

SCOPE OF PROJECT AND GAMING

Next year will mark the 42nd anniversary of the classic arcade game “Asteroids.” But the internet has already seen some fond tributes and remembrances to a video game that’s earned its place in the early history of computers — and in the lives of the young geeks who went on to become computer programmers.

Nostalgic gamers will be scrambling this holiday season for the Atari Retro Handheld console and Atari Plug & Play Joystick — both of which will feature “Asteroids” in its collections of pre-installed classic games.

This project will provide an immediate draw to young students excited about being able to build games for their favourite entertainment device. Students will be able to better appreciate the importance of the tools and the abstract concepts of learning involved in gaming.

Scope, most simply put, is the understanding of how vision meets execution, this game can be customised based on its appeal and difficulty for any user on the planet. This execution with my passion for outsourcing a gaming application for parents, students, teachers, friends, just about anybody to play and enjoy is what gives my project vision.

CONCLUSION

In conclusion, the experience and learning curve involved in creating a minimalistic yet complex game like Asteroids with innumerable salient features was ever expanding. What makes this project unique is the scalability and the quality of graphics, sound effects and layering of different scripts done over one other. Needless to say, everything in the game has been implemented from scratch!

Even though, the idea of the game Asteroids is not my own, the execution and implementation of the game designed is nothing short of astonishing. The game gives its user a very smooth and glitch-free gaming experience, from timers set to screen wrapping, every snippet of the code has been implemented with utmost pois. The program is commented at every step for a layman to understand and make sense of the program behind this game.

FUTURE SCOPE

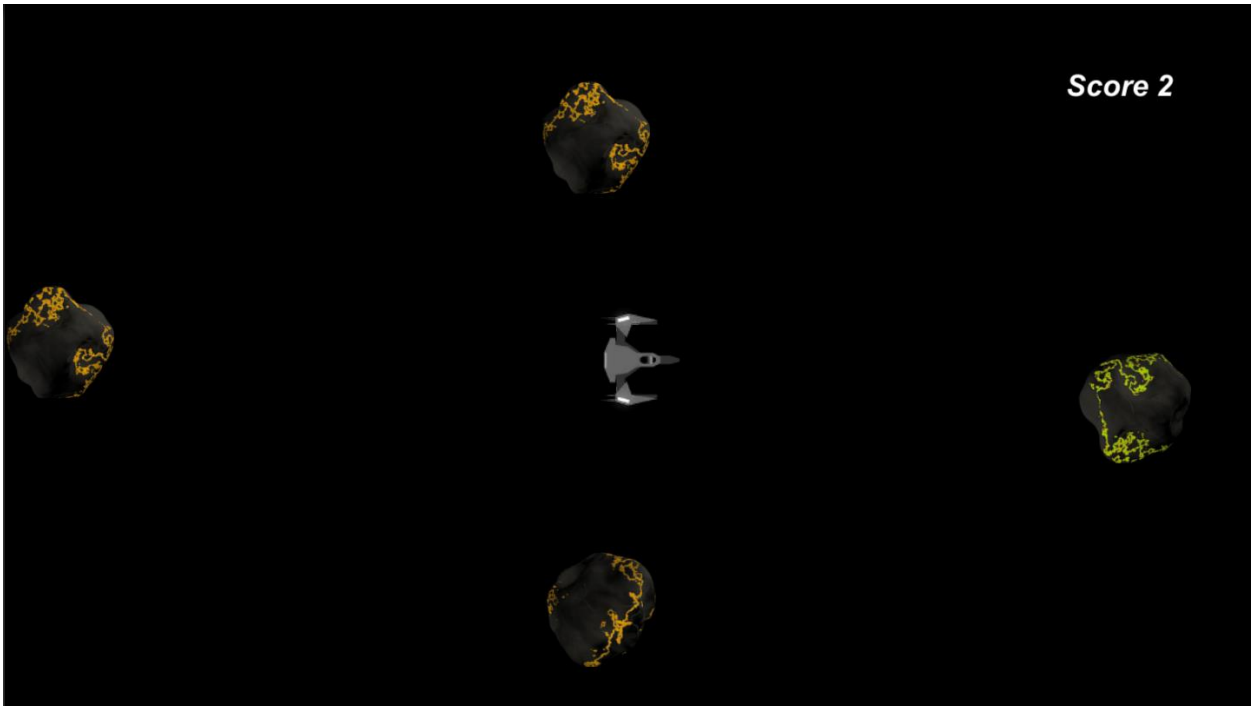
Future scope of the project entails converting it to a scalable robust android UNITY game that can be enjoyed by people of all ages not only on their PC but also on their smart phones.

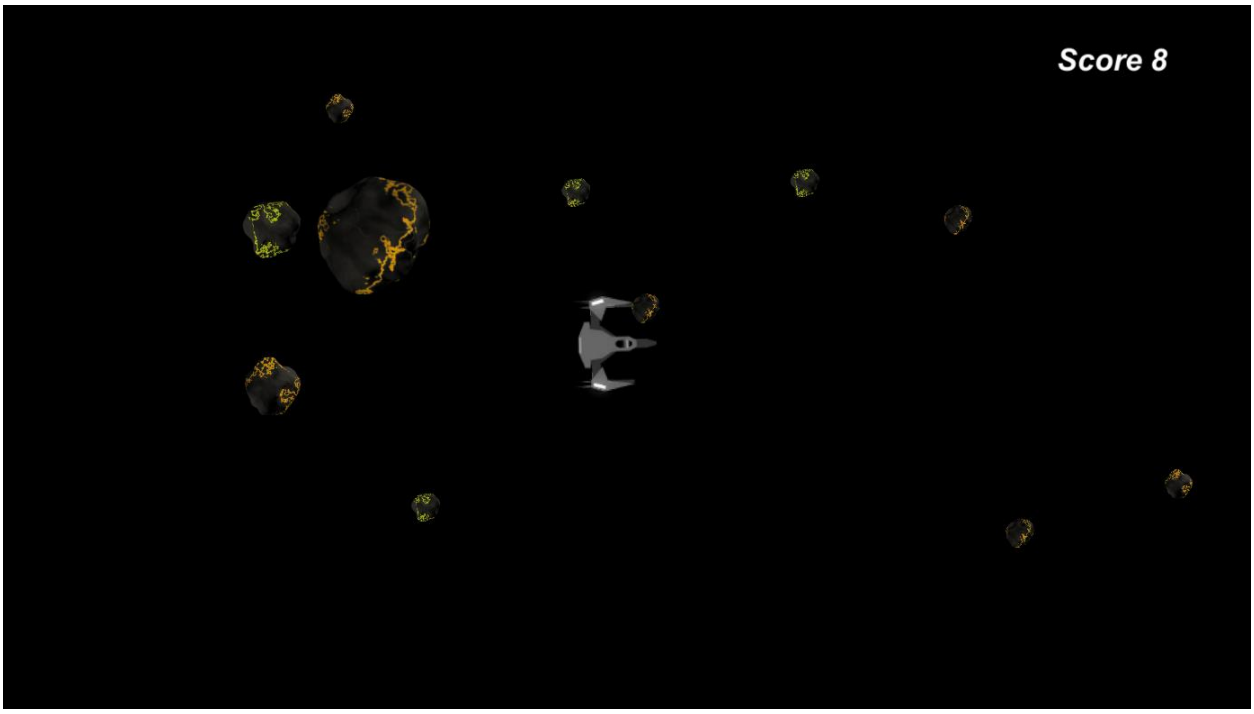
Also transforming the game into a multiplayer video game would be fascinating and a measurable extension of this video game.

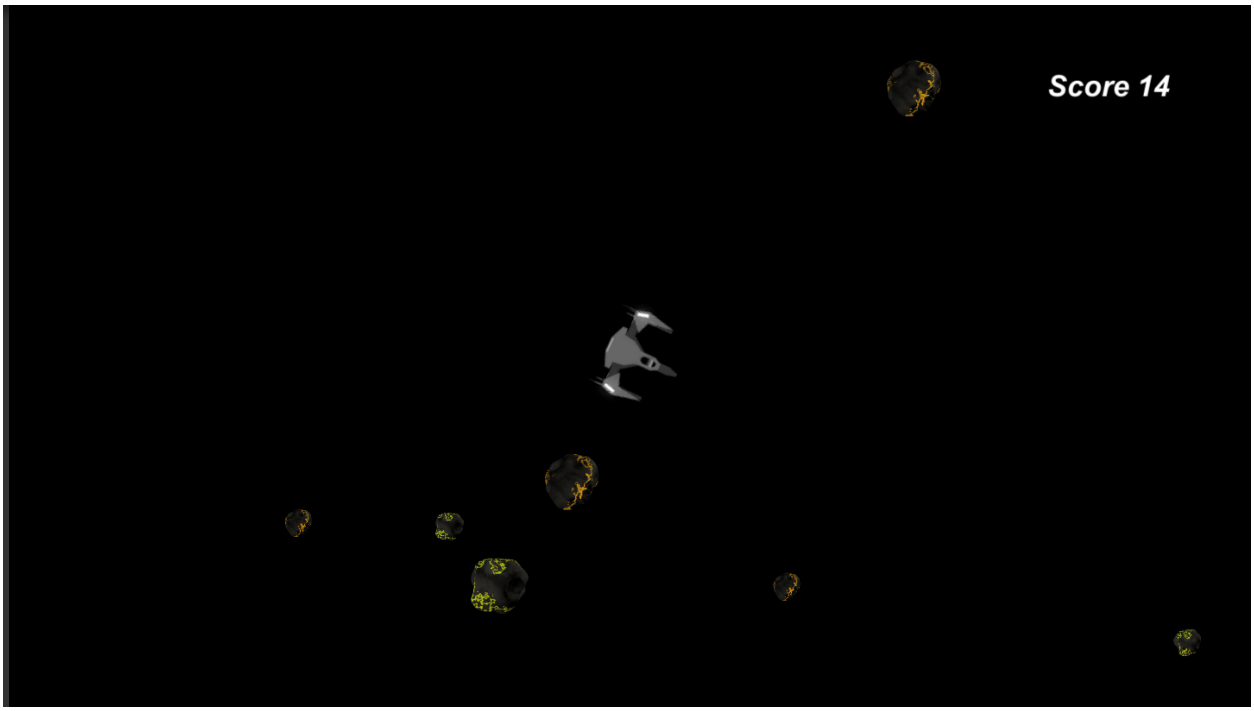
Nowadays, very fascinating technologies such as Virtual Reality and Augmented Reality are brimming forward, it would be interesting to change the perspective of this video game from 2D to a 3D virtual reality game.

Currently, I am working on additional features and obstacles that can be introduced in the game as well as striving continuously to enhance my skills so that I can create a more elaborate Multilevel game for all gaming enthusiasts out there .

VISUAL REPRESENTATION OF THE GAME



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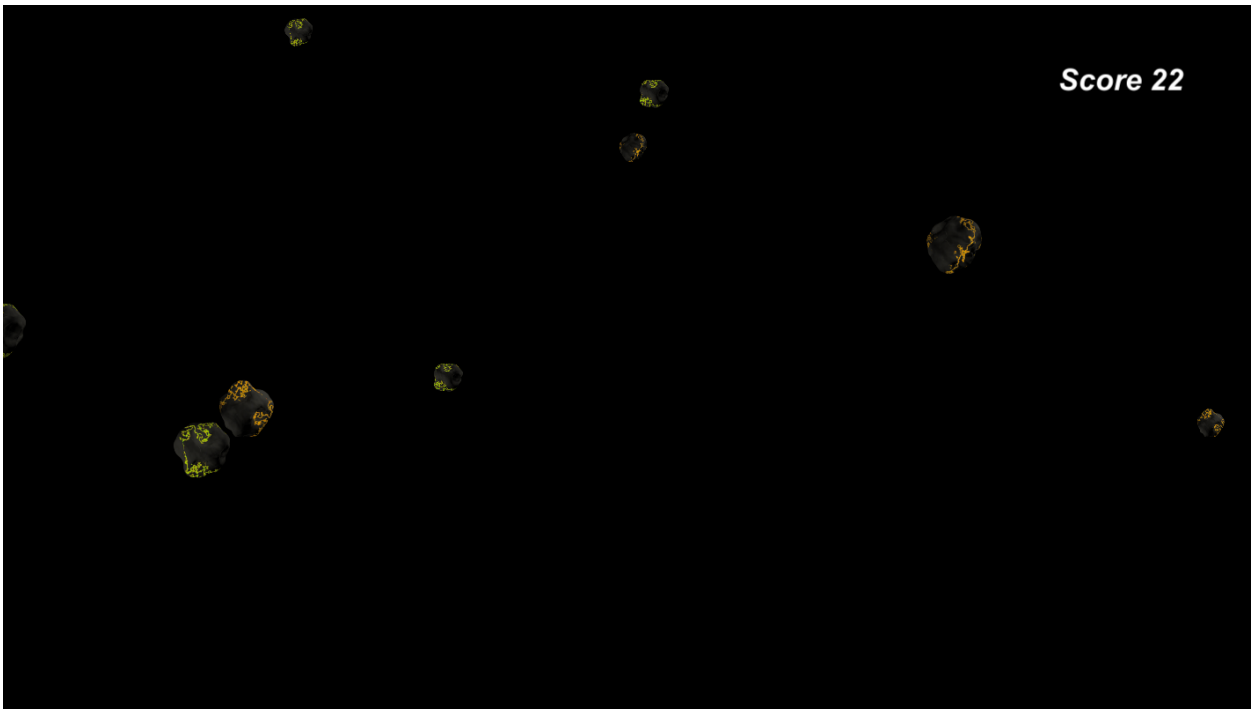
Score 22

CONTROLS OF THE GAME

- Space Bar -- To thrust the ship in forward direction
- Right/Left Keys – To rotate the ship in clockwise/anti-clockwise direction respectively
- Left Control (Ctrl) – To shoot at asteroids