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**CSC 4999 - Computer Science Senior Seminar**

**INTRODUCTION:**

**Over this Fall semester I would like to develop a game for the desktop and android devices. This may also expand to Roku and iOS but we will see about that. I would like to implement efficient code via the Unity IDE, interesting art for the characters of the game and its background and lastly cutting in enjoyable game music.**

**ABSTRACT:**

**The game will begin with your character, which is just a 1 or 2 pixel square block. The goal of the game to start is to tilt the android device/use arrow keys on a desktop in order to gain more pixels, this can be done through avoiding hazards and obtaining shiny objects. As your character becomes more complex, it will begin to take shape of an actual sprite of some kind, at that point the user will learn how to control this character. Start simple and if time permits, try to add more and more complexity.**

**KEYWORDS:**

**Game, unity, racing, simple, complex, fun**

**PROBLEM STATEMENT:**

**The challenge that this game presents is to learn the Unity IDE and to develop a non-buggy game that is both easy and enjoyable to play by the end of the semester.**

**REVIEW OF LITERATURE:**

**At the beginning of the semester I set out to create a game that starts off visually simple, and as you progress in the game the player is rewarded with an improvement on how the game looks, this included in my mind the character, platform, enemies and the reward of piles of pixels.**

**As I began development, I sought to learn two game engines to some degree in order to gauge which engine is best suited for my needs. These were Unreal and Unity; after some research and playing around with the user interface I decided to go with Unity.**

**I felt Unity was a good choice because of all the resources that are available already, it was free and it gave me the opportunity to learn a new programming language called C#.**

**To get into more depth, I started watching a lot of tutorials both on youtube and on the Unity website. I tried out a few games that were free and shown as a learning piece made by the developers at Unity.**

**The programming posed the greatest challenge, learning how to write scripts that could interface well with the UI of Unity became difficult, especially with the more I added code and classes that I created as I went along with the developing. Thankfully, I commented all my code to understand what I was doing when I was at later periods of the development.**

**The other challenge that emerge was the visuals, I didn’t have any background working with Adobe Premiere Pro, Photoshop and Blender. Thanks to tutorials and assistance from my partner, I was able to make something smooth and appealing to the eye.**

**As the semester began to close, I rushed to complete things that bugged me and Unity in order to try and deliver a smooth program from start to finish. I utilized the build setting on Unity to export my game in an .exe file.**

**This project posed a lot of challenges and allowed me to explore areas of computer science I would have otherwise missed out on.**

**ANALYSIS:**

**The game took over 100 hours to complete, this included programming, creating the models with Blender, Adobe Photoshop, creating an intro video in Adobe Premiere Pro and working with Unity. Unity was a difficult program to interface code with and therefore has to be one of the more difficult things that I have encountered while producing this game. It was a lot of fun, tons of learning had to be done but I have to say the I am happy with the results.**

**CONCLUSION:**

**In conclusion, this game helped me learn the C# programming language and how to interface with the Unity program in order to put together all the pieces of the game. There is a lot to the game that I would love to add on, maybe after I graduate I will expand on this game to give it more appeal to a broader audience. Only then might I feel comfortable with releasing the game on Google Play and iOS.**

**FURTHER RESEARCH:**

**Look into expanding the game where needed. Adding better looking characters, level and enemies.**

**REFERENCES:**

**I used the Unity Resources, the manual, API and the user base to construct my game, this can be found here: http://docs.unity3d.com/Manual/index.html**

**I would like to thank Ana Lopez for helping me with all things artistic and the musician Macross 82-99 for his songs that are featured in the game.**