Creating a Windows or Xbox 360 Video Game Using C# and Microsoft XNA Game Studio

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Abstract

Game development is growing business that has attracted the attention of many of today’s youth. The purpose of this project was to explore how to create a 3D game. This project was pursued mainly for learning and teaching purposes. To create the 3D models, SOFTIMAGE/XSI Mod Tool and a 3D scanner were used. C# and Microsoft XNA Game Studio were used to code the game. The result was a 3D shooting game in which the player is tasked with shooting moving targets. It was concluded that for future projects, it was best if a beginner start with a 2D game, establish a means of managing different game states before coding the rest of the game, and program the game using object-oriented techniques as much as possible.

Methods

In order to quickly obtain a usable 3D model, a 3D scanner was used to scan a cowboy figureine that Dr. Johnson had acquired. However, the scanned 3D model was full of holes. To fix this, the model was imported to SOFTIMAGE/XSI Mod Tool, a free 3D modeling program. Here the model could be patched to look more presentable. To code the game, I relied on C# and an add-on called XNA Game Studio 2.0. This presented the hardest task as this involved weasles of reading books and tutorials in order to understand the basics of game coding.

Conclusions

Improvements were made to the cowboy game which helped raise the overall quality of the game. However, two big features were not completed which had originally been planned, the menu system and the cartoon shader effect. Progress was made in getting these two features working as a separate project but could not successfully be integrated with the cowboy game. The reason was because the code was not programmed in a very object-oriented way. I later learned that getting a working screen system should be one of the first things added to a game. Since this project was mainly for learning/teaching purposes, additional work will probably not be done. In addition to learning the basics of game programming, I learned the following three important lessons:

• Always try to program in an object-oriented manner
• Creating a way to manage different game screens should be one of the first priorities
• Beginners should start by creating a 2D game in order to grasp the concepts of game development before moving onto the much more complicated world of 3D.

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Results

Work done during the summer resulted in a playable version of the game. The player controls the cowboy in the middle of the screen and must shoot 10 of the red targets. Making improvements to this base game was the focus of research during the fall semester. The resulting improvements include the following:

• Lowered aiming sensitivity for easier aiming
• Remapped shooting controls
• Implemented a "gulf" system for the targets
• Pause/resp function
• Widescreen effect
• Fixed a bug involving the target spawns
• Improved timer
• "Target ready" notification
• Game objective notification
• Various textual changes

References


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