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CS-499

9/22/2024

Milestone Two

**Briefly describe the artifact:**

The artifact that I chose for the Software Design/Engineering is a simple C++ program that I created in early 2020 in my first coding class that I attended.

**Justification for Inclusion:**

I specifically chose this project for my first category because of the lack of experience I had during the time I created this code. When looking at the original code, it is noticeable that there was a lack of understanding with certain concepts and design choices. No comments throughout the code, output of the code would never be able to run properly because of certain dimensions and restraints of the language it was coded in. As you can see here in this screenshot of the

original output below. A black background with white dots

Description automatically generated

With the knowledge I have now of different languages at the end of my Computer Science journey, I wanted to showcase my newfound skills. That is why I decided to complete revamp this snake game. Using my conversion skills taught here at SNHU, I’ve managed to translate the original C++ program into a Java based program. Leading to a much better design for users. As can be seen below with the new output of the game

A screenshot of a computer

Description automatically generated

With the new revamp of the code, I also wanted to add new additions to it. Adding a difficulty option when booting up the game gives the users a choice between “Easy” and “Hard”. Each one having its own settings.

A screenshot of a computer

Description automatically generated

On top of a new difficulty option, I’ve also added the ability to pause the game with a simple key press. Using ‘P’ while playing, the game will pause and freeze what is happening until you press ‘P’ again to resume the game.

A screenshot of a video game

Description automatically generated

On the original game, when you would collide with yourself the game would exit immediately and you would have no idea what your high score would be, but on the new and improved game, there is a final “GAME OVER” screen that showcases your score of that specific game.

A screenshot of a computer

Description automatically generated

Using Java over C++ gave me new ways to customize and add personal touches into the game such as color and graphics. Doing so improved the gameplay and re-playability of the entire program.

**Meeting Planned Outcomes:**

At the start of this class I clearly gave my insight into what I had planned for this project and to my understanding, I have achieved what I planned to do and more.

**Reflection:**

During the process of translating the code and improving on it, I overcame a couple of issues at the start. Some C++ features don’t translate well with Java. C++ uses static arrays for how the snake tails are moving, but I had to switch that to dynamic arrays for figuring out the positions of the tails in Java. Even the input is different with Java compared to C++. Small things like that aren’t noticeable at the beginning of the project, but once I was doing the work, it became a struggle at first.