**Volt Puzzle**

This is a puzzle game where the player is tasked with connecting circuit nodes from the left (Charge Nodes) to the circuit nodes on the right (Receiver Nodes) to match the result to the target value before the time runs out.

This game project was inspired by a particular section from the massively popular game GTA V online from their latest Cayo Perico update where the player is tasked with hacking a circuit box as part of their mission.

**Space Shooter**

About the project: This is a tech demo of a space shooter game where the player controls a ship and shoots down the asteroids that are falling from space. The demo also features controller and keyboard & mouse support for the ship controls.

My involvement: I was tasked with developing a tech demo of a game using C++ and DirectX 11.

**Pong**

About the project: This is a pong game where two players play against each other. The player on the left uses W and S keys to move up and down, and the player on the right uses Up and Down arrow keys to do the same. The first player to reach the score of 5 points wins the game.

My involvement: I was tasked with developing a pong game using C++ and the SFML Graphics library.

**Math exploration**

About the project: This project was exploring the use of mathematical functions to sketch art. I used computer-aided design software ­­‑ namely Desmos which is an advanced graphing calculator ­­­- to combine mathematical functions that make up different curved lines that will connect to form a figure of a camel.

**2D Vehicle**

About the project: This project was exploring plotting a vehicle in a spreadsheet using 2D matrices and applying transformation matrices to produce different effects on the vehicle.

My Involvement: I plotted the vehicle’s coordinates using Desmos (an advanced graphing calculator) and imported the coordinates into a spreadsheet and then converted the coordinates into matrices. After that, I applied transformation matrices to the vehicles matrices and used the obtained matrices to plot the vehicle on a graph in the spreadsheet.

**3D House**

About the project: This project was exploring plotting a house in excel using 3D matrices, projecting the house, and applying transformation matrices to produce different effects on the house and to view it from different angles.

My involvement: I worked out the 3d coordinates of the house (on paper) and added the coordinates to a spreadsheet and then converted the coordinates into matrices. After that, I added a perspective projection matrix and then applied transformation matrices to the house’s matrices.