

Jacob Tannahill

Sunny Shah

Space Invaders

Space Invaders is a classic two dimensional arcade game in which a player controls a ship that moves across the map, while firing at descending alien ships. The object of the game is to defeat the oncoming alien barrage and achieve the highest points possible. Each alien is given a value the higher the value the harder it is to defeat the aliens, as the game progress the speed and abilities of the aliens will increase which increases the difficulty of the game. The user will control the ship with the accelerometer, the accelerometer will act like a joy stick in which as the user tilts from left to right the ship will move from left to right, as the user tilts forward or back the ship will move forward and back. The user will be able to shoot by hitting the space bar and the aliens will be shooting down at the ship, if the ship has gotten hit more than 3 times the game will terminate. The GUI will have the game window and accelerometer buttons and also will have built in music and sounds for the user experience. In creating this application there will be many technical challenges that we will come across. Such as trying to make the accelerometer accurate enough that when the user does tilt either direction or forward or back that the ship does exactly what the user wants it to do. By using a low pass filter we will be able to filter out exactly the right amount of noise so that the readings of the accelerometer are accurate as possible. Another challenge that we might come across is creating a random spread of aliens that will be descending downward and also increasing the speed and difficulty of each alien. In order to do this we will have to come up with a algorithm that will spit out a random number of aliens at random times and also count the time in which the game is still running so as the time will increase the speed and the difficulty of the aliens will increase by increasing the amount of aliens. One more challenge that we might come across is implementing sound and music into the user interface, which can be solved by using a Matlab .m file to import the music file in the user interface.

