VOICE RECOGNITION PROJECT

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For our module Gesture based UI development we were given a project to do which was to Create and implement the framework for a voice-controlled application or game of your choosing. You will need to create an XML based grammar to be incorporated into the application/game. So, at the start of this I started to research ideas online and found some interesting games but then when I started to try and think of ways that I would code these games I was struggling.

I then thought of a game which would be simple but would be enjoyable for the user and a game I believed that voice commands could be incorporated into. This is where the idea of a game which was similar the classic space invaders game came about. My plan for the game was to have a player which could move left, right, up and down through voice commands and then I was initially going to have my menu that I could say Play game and it would play the game and quit game and it would exit the game. Upon developing the game I felt that the game should be all controlled by voice as I wanted to add in a stop feature and a shoot feature so this is what I done.

When the game is started you are greeted with a menu which has a space invaders image in the background and two buttons. One called play which when pressed will then bring you into the game and the other button is quit which when pressed will then quit the game. When the player presses the play button the game will then load like below.

A picture containing table

Description automatically generated

As you can see from above there is a player at the bottom of the screen which is voice controlled. So if the user says “left” he will go left, “Up” he will go up, “Down” he will go down, “Right” he will go Right, “Stop” he will stop and “Shoot” he will shoot. There is also a score displayed in the bottom left hand corner of the screen which will increase by 10 every time an enemy is killed. The 4 bases just in front of the player are there to protect the player. They also have a health score so if shot by the enemy above 5 times they will get destroyed. The enemy’s above then all move together in a motion and are continuously moving down the screen while also shooting at the player and bases.

A picture containing diagram

Description automatically generatedIn the grammer.xml file this was the 6 rules that I had included. Up, down, left, right, stop and shoot.

Then in the PlayerMovement.cs Script this includes methods that listen for grammar which then matches the .xml file.

Text

Description automatically generated

The Awake method listens for grammar that matches the .xml file. The spoken word method is then set to null. Gr.start ensures that the grammar recogniser is started and the update method calls the VoiceRecognitionCommands(); which is a method that contains a switch statement which when the spoken word is called its linked to the grammar file and then the appropriate method is called and the function is then called.

This is my submission for my voice recognition project I hope you enjoyed it and if you have any queries about the project you can contact me at G00337350@gmit.ie.