

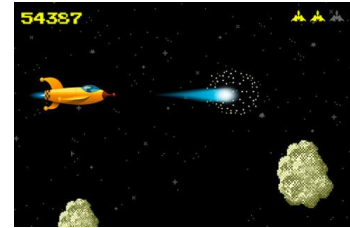
Proposal

Group Name: Voice-controlled video game

Short Name: Ah-Ah-Piu

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-Overview

The goal of our project is to build an old-fashioned voice-controlled video game like the picture, in which a FPGA, a voice sensor and a monitor might be used.

-Description

The whole idea of the game is about one character (maybe us) traveling through all the incoming enemies (probably all the amazing lab sessions and fabulous codes assigned by be-loved Edwards). The movement of the character is controlled by the voice of the player. As the name suggested, the player either makes continues noise like "Ah...Ah" to keep the character rising up or be quiet to drop down the character a little bit. Besides just avoiding the collision with enemies, the player can shout out "Piu" to fire a bullet to destroy the enemy in the way. To be easy to play, all the enemies travel to the character in a pre-programmed way while the character just moving up and down alongside the left edge of the screen.

-Input

Audio signals collected by voice sensor.

-Output

Video signals sent to the monitor.

-Algorithm

To accomplish our goals, we need to implement all of the followings

1. Collect data from voice sensor;
2. Convert the data to digital form and determine whether we should send them to software;
3. Based on previous information, determine whether there is any collision between objects;
4. Compute and send the data we need to draw character, enemy, and bullet;
5. Display all the stuff in the monitor.

-Split functionality

Hardware take care of 1, 2, 5

Software takes care of 3, 4.