Darkturito

An evil, voice-controled R2D2
www.mateslab.com.ar

eldraco@gmail.com

Voice commands

- Using the microphone we send the audio to the speechapi.com site using a demo page.
- We use a bash script to sniff the packets, recognize the commands and send numbers to the arduino.
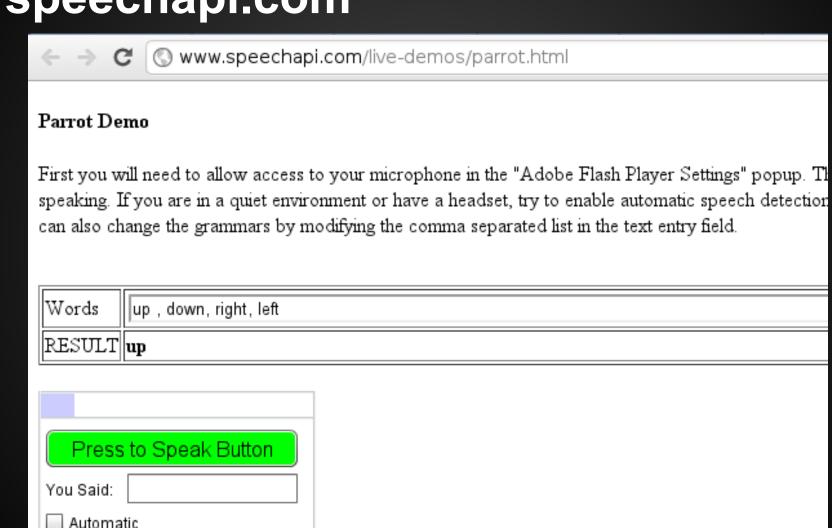- The arduino applies different actions depending the number.

Evil R2D2

- Arduino
- Two servos
- 1 small and cheap laser pointer
- Some metal parts.
- A beautiful painted R2D2 head

First

- Convert voice to text
- http://www.speechapi.com/live-demos/parrot.htm

- We use that page with a mic, it print out the word we said.
- You have to give the word list before hand. In our case: up, down, left, right.

speechapi.com

From text to arduino

- That HTML page with the response travels on the network
- We sniff the response out of the network, Each time we found a word we map it to a digit: UP is 1, DOWN is 2, RIGHT is 3, LEFT is 4.
- We send that digit to the serial port of the Arduiono.

Sniffer and serial port

```
#!/bin/sh
SERIAL='/dev/ttyUSB0'

while [ 1 ]
do
        PALABRA=`ngrep -nl -lq \"text\" -d wlan0 |awk -F: '{fflush()}{print $10}'|sed -u '/^$/d'|awk -F\" '{fflush()}{print $2}'`
        echo $PALABRA

        if [ $PALABRA = 'up' ]
        then
                echo -n '1' > $SERIAL
        fi

        if [ $PALABRA = 'down' ]
        then
                echo -n '2' > $SERIAL
        fi

        if [ $PALABRA = 'righ' ]
        then
                echo -n '3' > $SERIAL
        fi

        if [ $PALABRA = 'left' ]
        then
                echo -n '4' > $SERIAL
        fi
done
```

Arduino

- On the arduino we control two servos according to the digits.
- Simple.

Arduino Code

```
#include <Servo.h>
int value = 0;
int led =  13;
int pos;

Servo myservoHor;
Servo myservoVer;  |
void setup() {
  pinMode(led, OUTPUT);
  myservoHor.attach(8);
  myservoVer.attach(9);
  Serial.begin(9600);
}

void loop() {
  if (Serial.available() > 0) {
    value = Serial.read();
    Serial.println(value);
    // Recive 1, that is up, so move the vertical servo to 0
    if (value == 49) {
       myservoVer.write(30);           // tell servo to go to position in variable 'pos'
     }
    // Recive 2, that is down, so move the vertical servo to 180
    else if (value == 50) {
       myservoVer.write(100);            // tell servo to go to position in variable 'pos'
    }
    // Recive 3, that is right, so move the horizonal servo to 0
    else if (value == 51) {
       myservoHor.write(10);           // tell servo to go to position in variable 'pos'
    }
    // Recive 4, that is left, so move the horizonal servo to 180
    else if (value == 52) {
       myservoHor.write(160);           // tell servo to go to position in variable 'pos'
    }
  }
}
```

End

- Thats it! You can add more commands and movements on demand!