Musical Glove

This uses a set of tilt switches to control notes. If you put the tilt switches on long wires, you can strap them to the fingers of a glove. When you wiggle your fingers, you'll trigger the switches and play the different notes.

Before you start

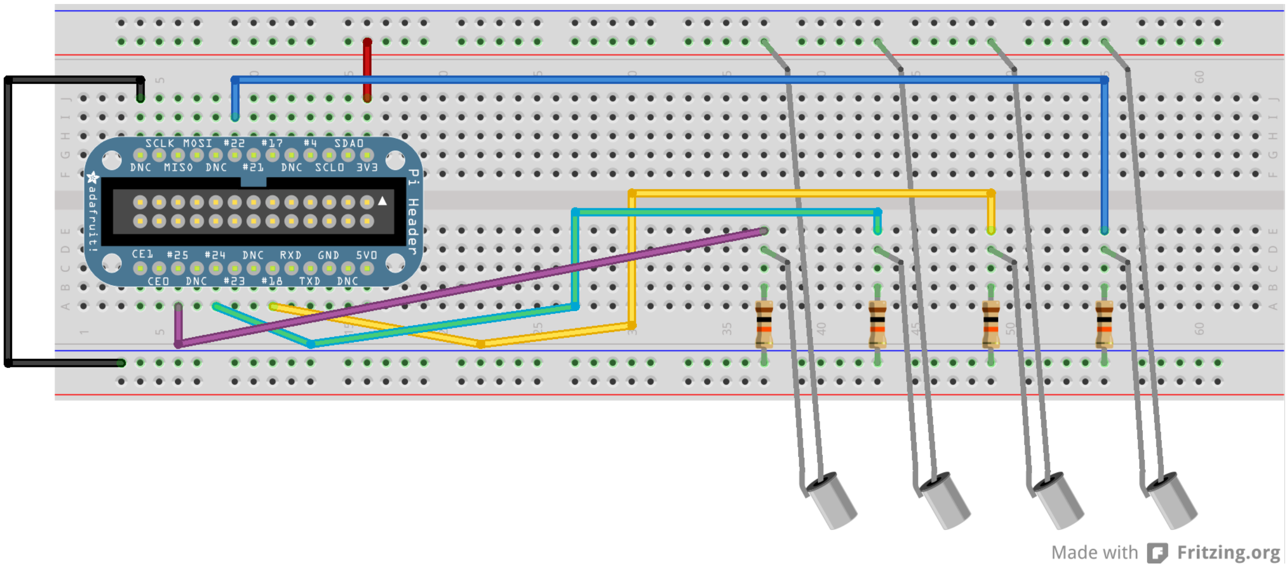
Set up the Raspberry Piwith PyGame and copy the sound files across.

You will need

- Four tilt switches
- Four 10kΩ resistors
- A breadboard
- Some jumper leads for connecting things. You'll need mostly male-male, with some female-female to attach to the tilt switches.
- Speakers connected to the Pi's headphone jack to play the sounds.

Use either a Pi Cobbler or a Raspberry Leaf to help identify the pins. If you're using a Pi Cobbler, make sure that the coloured side of the ribbon in in the corner of the Pi. If you're not using a Pi Cobber, you'll need some extra female-female jumper leads to connect the Pi to the breadboard.

Make this circuit


SCLK MOSI #22 #17 #4 SDA0
DNC MISO DNC #21 DNC SCL0 3V3
CE1 #25 #24 DNC RXD GND 5V0
CE0 DNC #23 #18 TXD DNC
Pi Header
adafruit
Made with Fritzing.org

Use pins 25, 24, 18, 22, GND, 3v3

Enter this program

```
pi@blackberry:~$ cd pi-music
pi@blackberry:~/pi-music$ nano glove.py
```

Use `nano` to enter this code into `glove.py`

(Layout is important: use four spaces, not tabs, and make sure all the columns line up. Distinguish carefully between `() [] {} . ,`)

```
import pygame
import RPi.GPIO as gpio

gpio.setmode(gpio.BCM)
pins = [25, 24, 18, 22]

guitars = ['sounds/guitar1.wav',
           'sounds/guitar2.wav',
           'sounds/guitar3.wav',
           'sounds/guitar4.wav']

pygame.mixer.init()

sounds = {}
for pin, wav in zip(pins, guitars):
    sounds[pin] = pygame.mixer.Sound(wav)

def handle_sound(pin):
    if not gpio.input(pin):
        sounds[pin].play()
    else:
        sounds[pin].stop()

for pin in pins:
    gpio.setup(pin, gpio.IN)
    gpio.add_event_detect(pin, gpio.BOTH, callback=handle_sound,
                          bouncetime=200)

while True:
    pass
```

Play the glove

Run with

```
pi@blackberry:~/pi-music$ sudo python glove.py
```