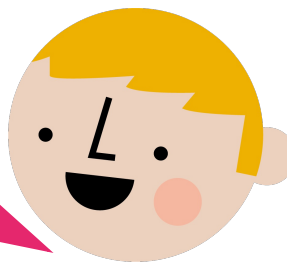
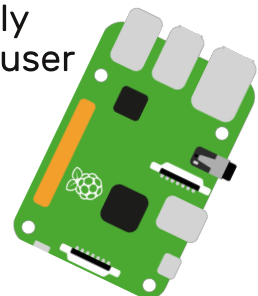




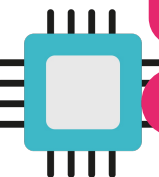
PYTHON SORTING HAT



We are going to write a short Python program which will randomly select a house from Harry Potter and play a sound file when the user presses a button. You will need either headphones or a speaker connected to your Raspberry Pi for this one.



Required Software and Files



1

There is a piece of software you may need to install and four mp3 files you need to download for this project. If you are using this at the Hull Raspberry Jam then the software is already installed and the mp3 files are saved in "Documents > HullRaspJam Projects > Python Sorting Hat". If you are doing this on your Raspberry Pi then you can download the mp3 files from our GitHub page: <http://bit.ly/SortSounds>

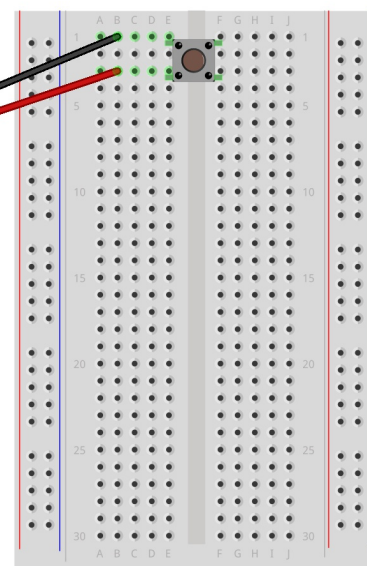
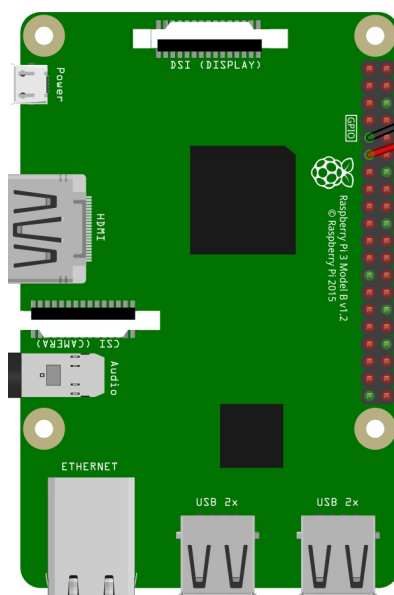
Install the software by typing:

```
sudo apt-get update && sudo apt-get install mpg123 -y
```

Our Electronics

2

Now we need to wire up our electronics. It is probably best to do this step with your Pi switched off. Make sure your connections are exactly as shown here before starting up your Raspberry Pi. You are connecting one jumper lead to GND pin, 5th down from the top on the inside set of pins and the other jumper lead to GPIO pin 17, which is the 6th down from the top on the inside set of pins.



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Our Python Program

- 3 We are now going to write our Python program. Open "Python 3 (IDLE)" from the "Programming" folder in your menu and then create a new file by pressing "Ctrl + N". We now need to save this file in the same directory as your mp3 files. At the Jam the folder you will need to save it in is "Documents > HullRaspJam Projects > Python Sorting Hat". Call the file "sorting-hat.py".

Now in your file type the following python code:

```
from time import sleep
from random import randint
from os import system
from gpiozero import Button

btn = Button(17)

def randomHouse():
    number = randint(1,4)

    if number == 1:
        system('mpg123 gryffindor.mp3')
        sleep(1)
    elif number == 2:
        system('mpg123 hufflepuff.mp3')
        sleep(1)
    elif number == 3:
        system('mpg123 ravenclaw.mp3')
        sleep(1)
    elif number == 4:
        system('mpg123 slytherin.mp3')
        sleep(1)

while True:
    if btn.is_pressed:
        randomHouse()
```

Save your file by pressing "Ctrl + S" and then run it by pressing the "F5" button. If you press your button you should hear the random selected house. Try it again, is it different?

Extension Idea

Can you make an animated Sorting Hat using PyGame? Try the PYGAME ZERO worksheet for a hint!

