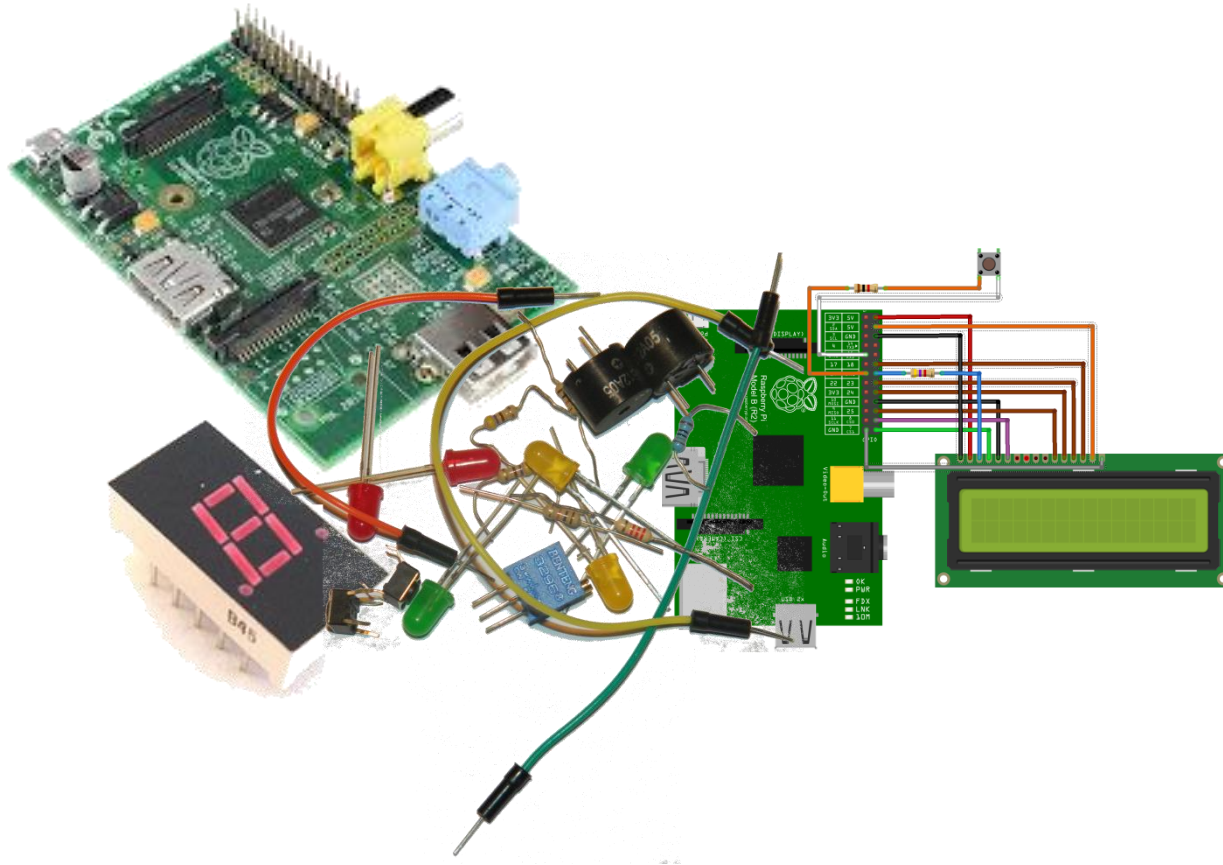# Raspberry Pi and Electronics

Blinking a Led

Type nano led.py
In Nano enter the following code

When finished press CTRL x to exit
Then press y, then enter to save it

We will test our code after every change

```python
#!/usr/bin/python3

import RPi.GPIO as GPIO
import time

GPIO.setmode(GPIO.BCM)
GPIO.setwarnings(False)

led = 4
GPIO.setup(led,GPIO.OUT)

GPIO.output(led,1)
time.sleep(5)
GPIO.output(led,0)

GPIO.cleanup()
```

Adding Variation

Add import random after the other import lines

```
import RPi.GPIO as GPIO
import time
import random
```

Replace

```
time.sleep(5)
```

With

```
time.sleep(random.randint(5,10))
```

Setting Up Our Buttons

After led = 4 add the following 2 lines

```
led = 4
right_button = 15
left_button = 14
```

Now we need to set up the buttons as inputs so after where we set up the led output add the following

```
GPIO.setup(led,GPIO.OUT)
GPIO.setup(right_button,GPIO.IN,GPIO.PUD_UP)
GPIO.setup(left_button,GPIO.IN,GPIO.PUD_UP)
```

Our Game Loop

After GPIO.output(led,0)
and before GPIO.cleanup()
Add the following code

```python
while True:
        if GPIO.input(left_button)==False:
                print("Left button pressed")
                break
        if GPIO.input(right_button)==False:
                print("Right button pressed")
                break
```

Adding Names

Under the 3 import lines add the following

```
left_name = input("Left player name is ")
right_name = input("Right player name is ")
```

Replace

```
print("Left button pressed")
print("Right button pressed")
```

with

```
print(left_name +" won")
print(right_name +" won")
```

Projects

For those of you who missed the information session our plan for this year is to work on some small projects between now and Christmas and after Christmas to work on a big project each that would be suitable for Coolest Projects

While we won't start building our projects until after Christmas we are going to start planning out projects straight away

So start looking around for projects now, keep your eyes and ears open, you have an opportunity to do really cool stuff.