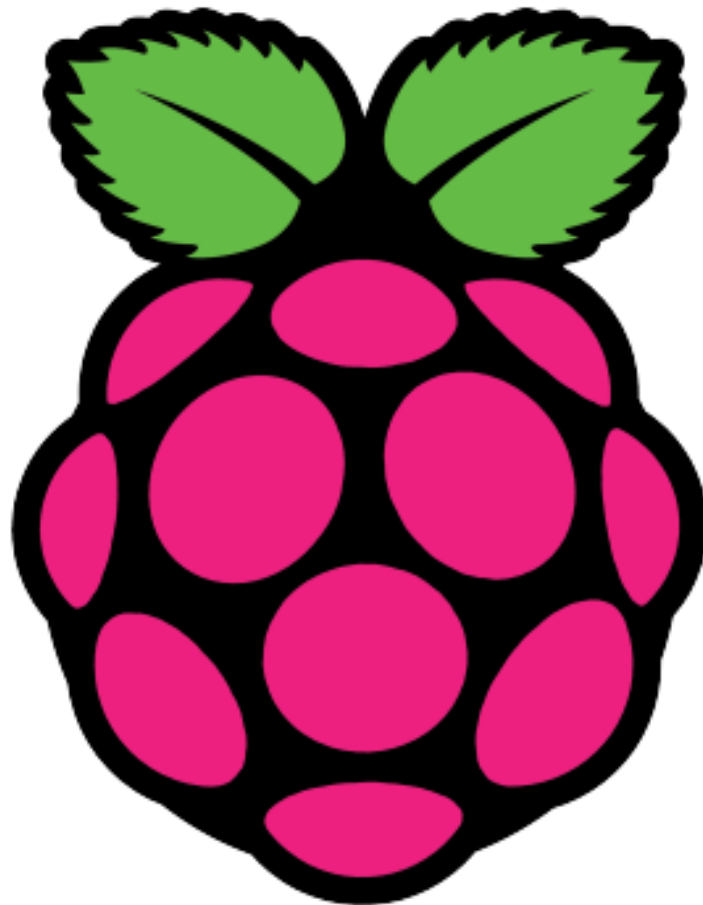


“Raspberry pi course”

ENG: AHMED MUBARAK

01020451375



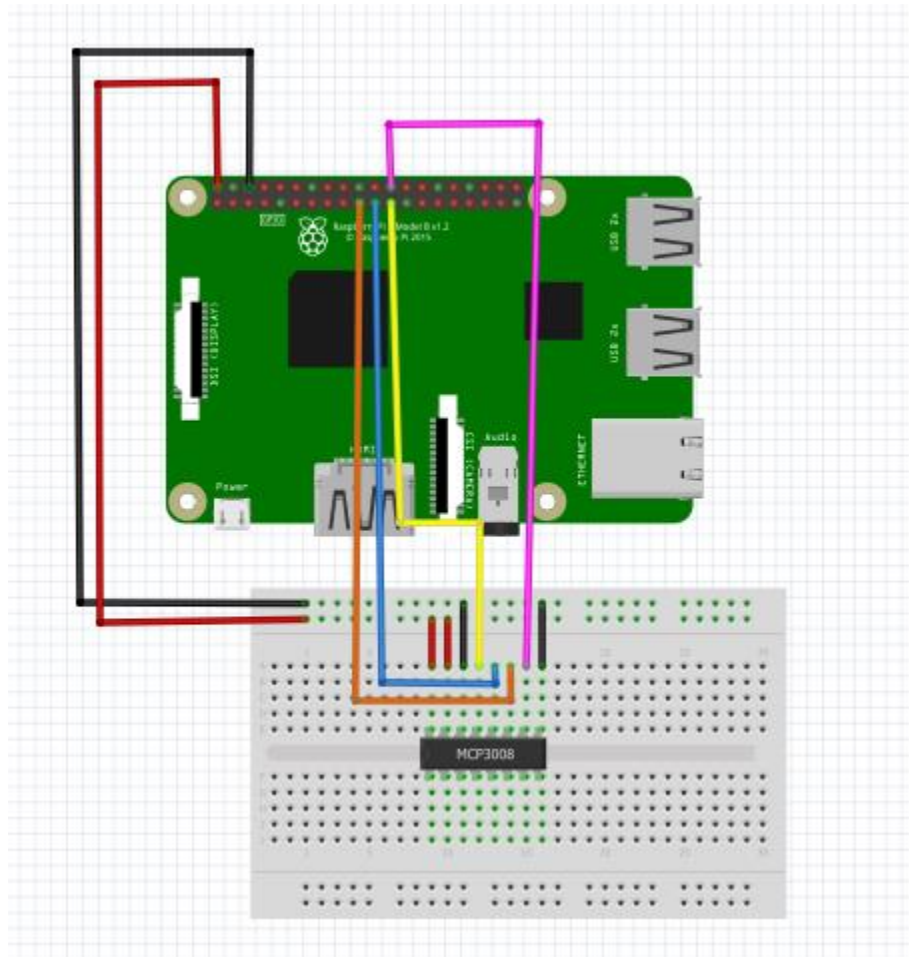
SESSION NO.“11”

- MCP3008 ADC
- POTENTIOMETER
- GAS SENSOR

ENG.AHMED MUBARAK

01020451375

MCP3008 ADC



HOW TO INTERFACE MCP3008 ON RASPBERRY PI

1. Enable SPI

"sudo raspi-config"

select interfacing options

select SPI

2. Check to see if SPI is activated

"lsmod" -> should see something like spi_2835

3. Download Adafruit libraries

- git clone https://github.com/adafruit/Adafruit_Python_MCP3008.git
- cd Adafruit_Python_MCP3008
- sudo python setup.py install

EXAMPLE CODE

```
import time

# Import SPI library (for hardware SPI) and MCP3008 library.

import Adafruit_GPIO.SPI as SPI
import Adafruit_MCP3008

# Software SPI configuration:

CLK = 11
MISO = 9
MOSI = 10
CS = 8

mcp = Adafruit_MCP3008.MCP3008(clk=CLK, cs=CS, miso=MISO, mosi=MOSI)

# Hardware SPI configuration:

# SPI_PORT = 0
# SPI_DEVICE = 0

# mcp = Adafruit_MCP3008.MCP3008(spi=SPI.SpiDev(SPI_PORT, SPI_DEVICE))

print('Reading MCP3008 values, press Ctrl-C to quit...')

# Print nice channel column headers.

print('| {0:>4} | {1:>4} | {2:>4} | {3:>4} | {4:>4} | {5:>4} | {6:>4} | {7:>4} |'.format(*range(8)))

print('-' * 57)

# Main program loop.

while True:

    # Read all the ADC channel values in a list.

    values = [0]*8
```

```

        for i in range(8):

# The read_adc function will get the value of the specified channel (0-7).

        values[i] = mcp.read_adc(i)

        # if values[0] > 300 :

            # print("good")

            # else :

            # print("bad")

        # Print the ADC values.

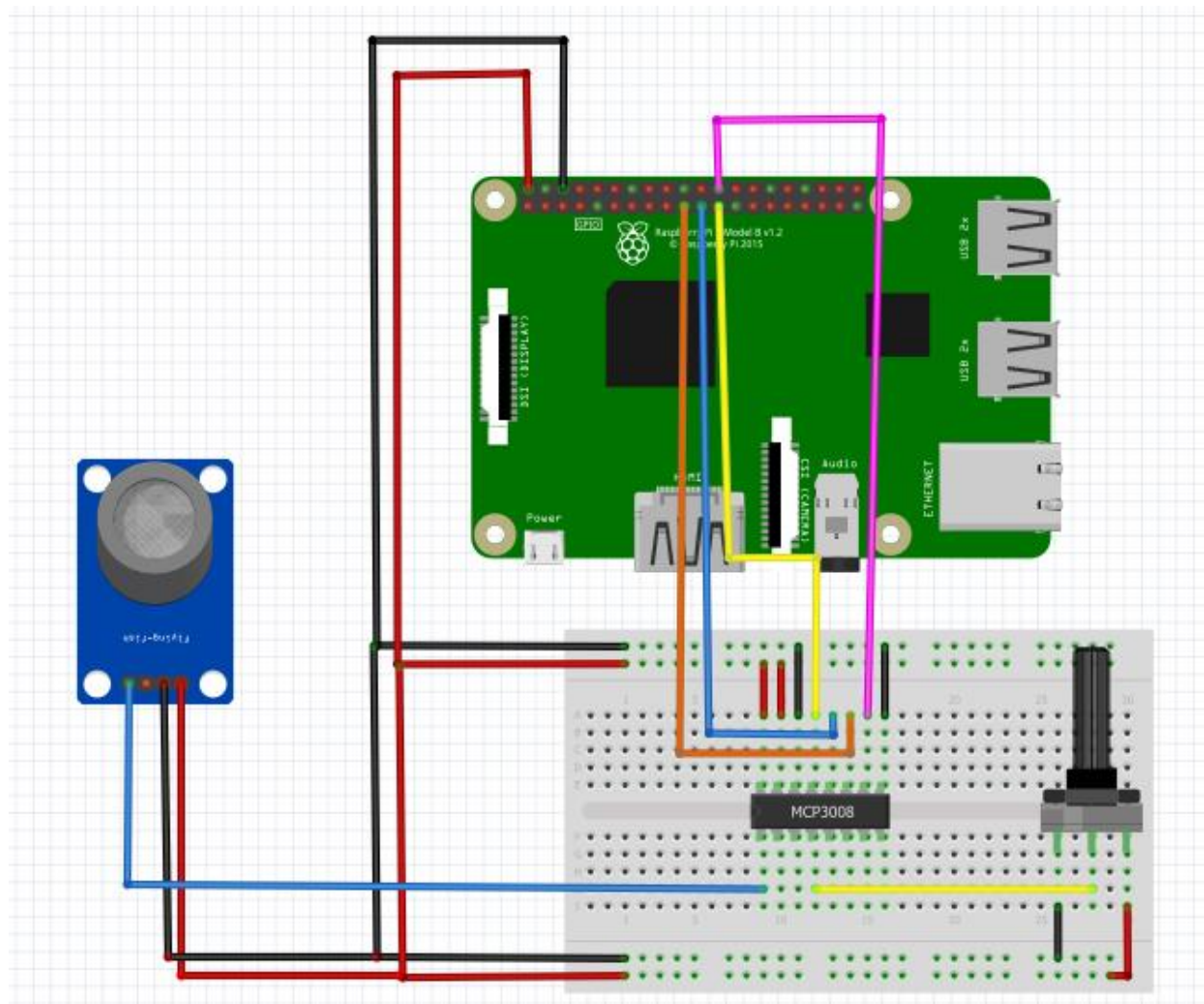
print('| {0:>4} | {1:>4} | {2:>4} | {3:>4} | {4:>4} | {5:>4} | {6:>4} | {7:>4} |'.format(*values))

        # Pause for half a second.

        time.sleep(0.5)

```

POTENTIOMETER AND GAS SENSOR



***FINALLY: I HOPE I HAVE
SUCCEEDED IN SAMPLIFYING THIS
CONTENT***

SEE YOU SOON IN ANOTHER COURSE

With my best wishes:

ENG : AHMED MUBARAK
