DELIVERY OF SPRINT 2

Date	14 November 2022
Team ID	PNT2022TMID04058
Project Name	Smart waste management system for metropolitan cities

Interfacing Load Sensor HX711 with

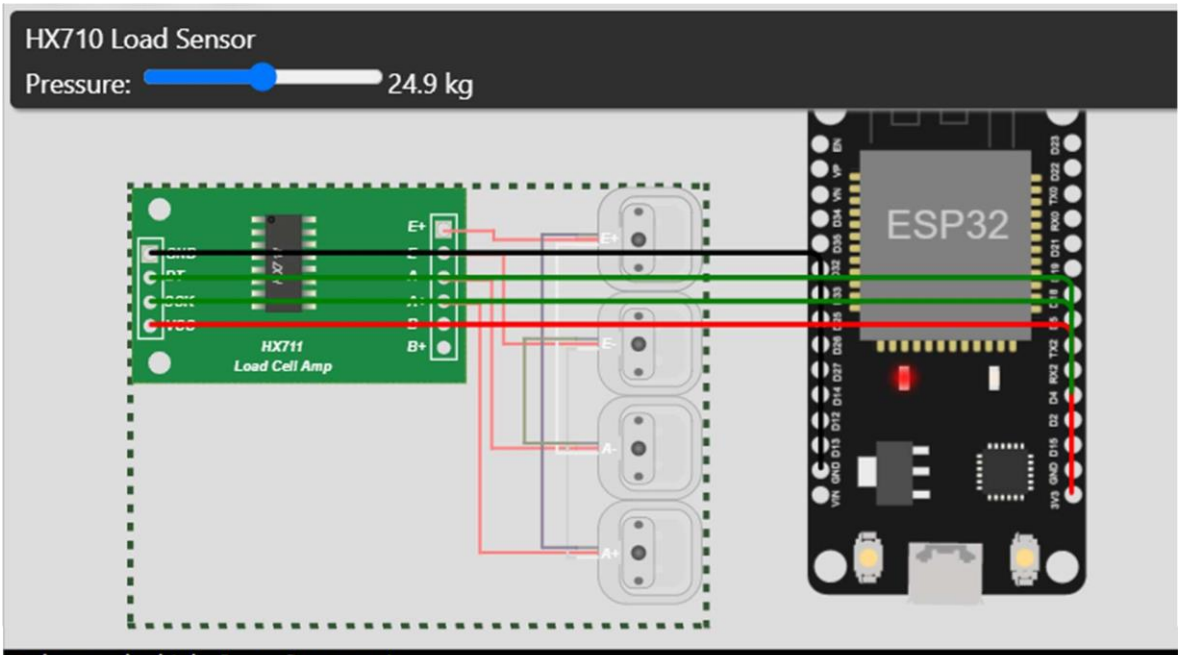
ESP32

WOKWI Code:

```
from hx711 import HX711
hx = HX711(5,4,64)
print(1)
while True:
    hx.tare()
    read = hx.read()
    #average=hx.read_average()
    value=hx.read_average()
    print(value,"#")

from machine import Pin, enable_irq, disable_irq, idle

class HX711:
    def __init__(self, dout, pd_sck, gain=128):

        self.pSCK = Pin(pd_sck , mode=Pin.OUT)
        self.pOUT = Pin(dout, mode=Pin.IN, pull=Pin.PULL_DOWN)
        self.pSCK.value(False)

        self.GAIN = 0
        self.OFFSET = 0
        self.SCALE = 1

        self.time_constant = 0.1
        self.filtered = 0

        self.set_gain(gain);

    def set_gain(self, gain):
        if gain is 128:
            self.GAIN = 1
        elif gain is 64:
            self.GAIN = 3
        elif gain is 32:
            self.GAIN = 2

        self.read()
```

```
        self.filtered = self.read()
        print('Gain & initial value set')

    def is_ready(self):
        return self.pOUT() == 0

    def read(self):
        # wait for the device being ready
        while self.pOUT() == 1:
            idle()

        # shift in data, and gain & channel info
        result = 0
        for j in range(24 + self.GAIN):
            state = disable_irq()
            self.pSCK(True)
            self.pSCK(False)
            enable_irq(state)
            result = (result << 1) | self.pOUT()

        # shift back the extra bits
        result >>= self.GAIN

        # check sign
        if result > 0x7fffff:
            result -= 0x1000000

        return result

    def read_average(self, times=3):
        s = 0
        for i in range(times):
            s += self.read()
        ss=(s/times)/210
        return '%.1f' %(ss)

    def read_lowpass(self):
        self.filtered += self.time_constant * (self.read() - self.filtered)
        return self.filtered

    def get_value(self, times=3):
        return self.read_average(times) - self.OFFSET

    def get_units(self, times=3):
        return self.get_value(times) / self.SCALE

    def tare(self, times=15):
        s = self.read_average(times)
        self.set_offset(s)

    def set_scale(self, scale):
        self.SCALE = scale
```

```
    def set_offset(self, offset):
        self.OFFSET = offset

    def set_time_constant(self, time_constant = None):
        if time_constant is None:
            return self.time_constant
        elif 0 < time_constant < 1.0:
            self.time_constant = time_constant

    def power_down(self):
        self.pSCK.value(False)
        self.pSCK.value(True)

    def power_up(self):
        self.pSCK.value(False)
```




```
Gain & initial value set
1
24.9 #
24.9 #
24.9 #
24.9 #
24.9 #
24.9 #
```