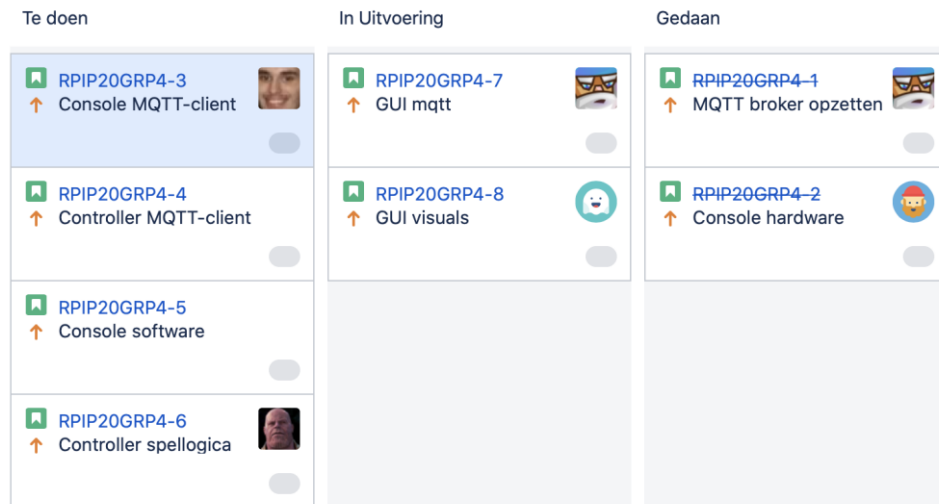


# RPi Programming – TeamOpdracht Groep 4

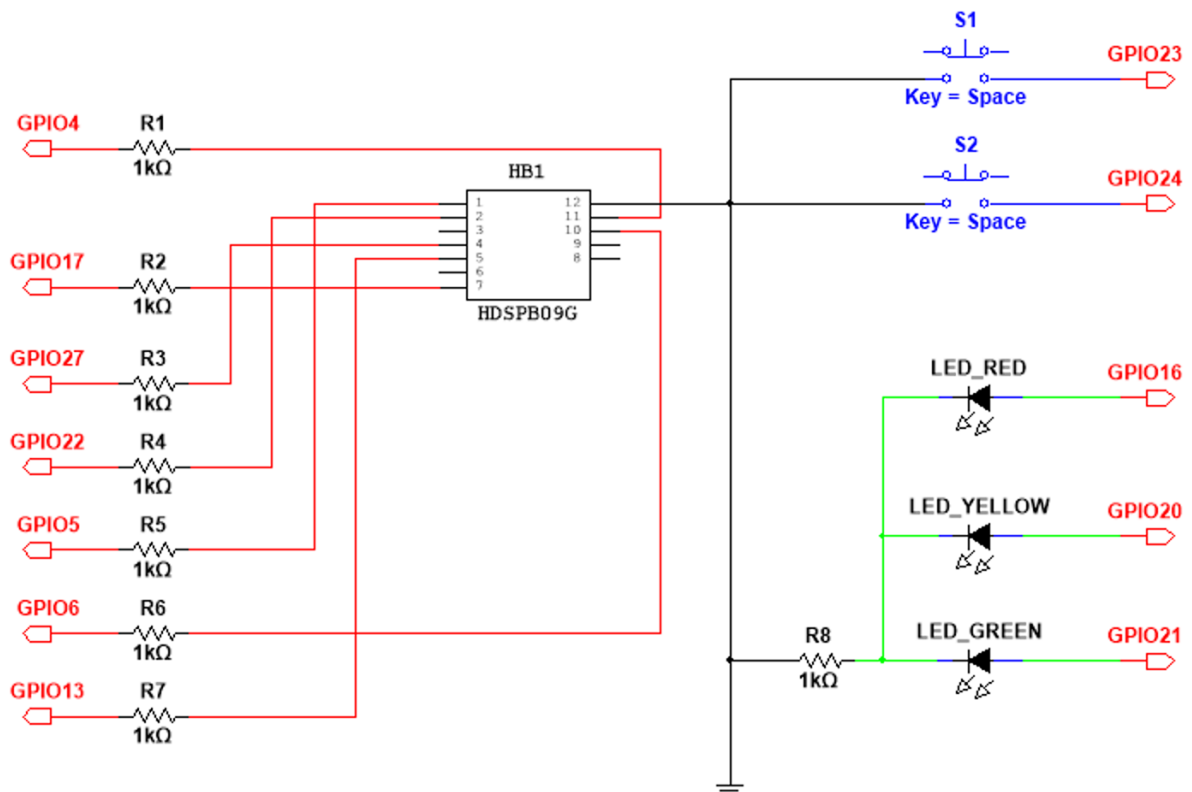
Wannes Vinken | Joey Jansegers | Lennert Van Rysselberghe | Usman Shani | Jonas Baert

## 1.0 Epics/User Stories:

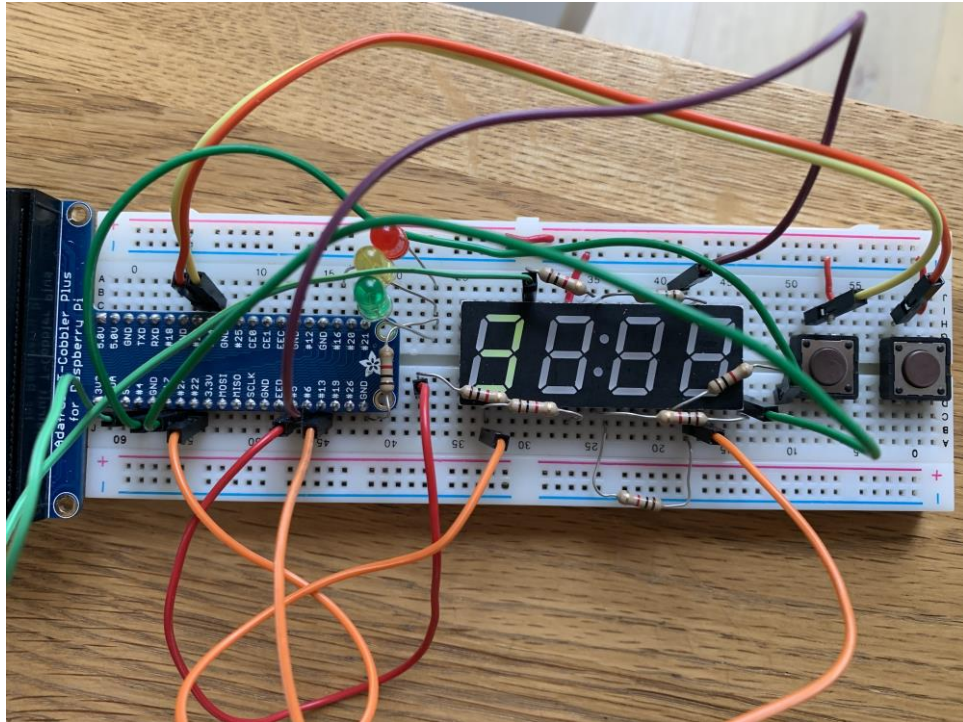


## 2.0 Hardware

### 2.1 Schema

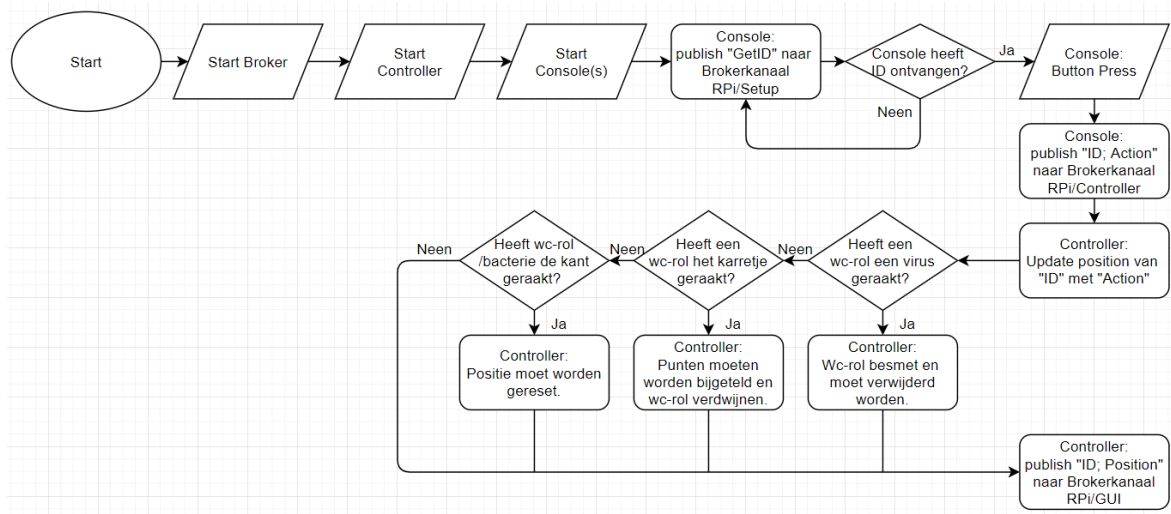


### 2.2 Foto hardware



### 3.0 Software

#### 3.1 Flowchart



#### 3.2 Programmacode console

#TODO:

- MQTT publish implementeren
- MQTT subscribe implementeren
- ID implementeren voor weergave op 7-segment display
- Rol implementeren (wc-rol, virus, winkelkar) voor kleur led

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

```

import RPi.GPIO as GPIO

leds = [16,20,21] # GPIO 16=rood=wc-rol // 20=geel=winkelkar // 21=groen=virus
segments = [4,17,27,22,5,6,13] # GPIO A=14 // B=17 // ...
buttons = [23,24]

GPIO.setmode(GPIO.BCM)
GPIO.setup(leds, GPIO.OUT) # leds activeren
GPIO.output(leds, False)
GPIO.setup(segments, GPIO.OUT) # 7-segments activeren
GPIO.output(segments, False)
GPIO.setup(buttons, GPIO.IN, pull_up_down=GPIO.PUD_UP)

BCD = {0:(1,1,1,1,1,1,0),
       1:(0,1,1,0,0,0,0),
       2:(1,1,0,1,1,0,1),
       3:(1,1,1,1,0,0,1),
       4:(0,1,1,0,0,1,1),
       5:(1,0,1,1,0,1,1),
       6:(1,0,1,1,1,1,1),
       7:(1,1,1,0,0,0,0),
       8:(1,1,1,1,1,1,1),
       9:(1,1,1,1,0,1,1)}

counter = 0
inputKey = "X"

def icb(channel):
    global counter
    if channel == buttons[0]:
        print("up/down")
        counter += 1 if counter < 9 else -9
        GPIO.output(segments, BCD[counter])
    if channel == buttons[1]:
        print("left/right")

for x in buttons: # interrupts activeren
    GPIO.add_event_detect(x, GPIO.FALLING, callback=icb, bouncetime=100)

while inputKey != "":
    inputKey = input()

for x in buttons:
    GPIO.remove_event_detect(x)
GPIO.cleanup()

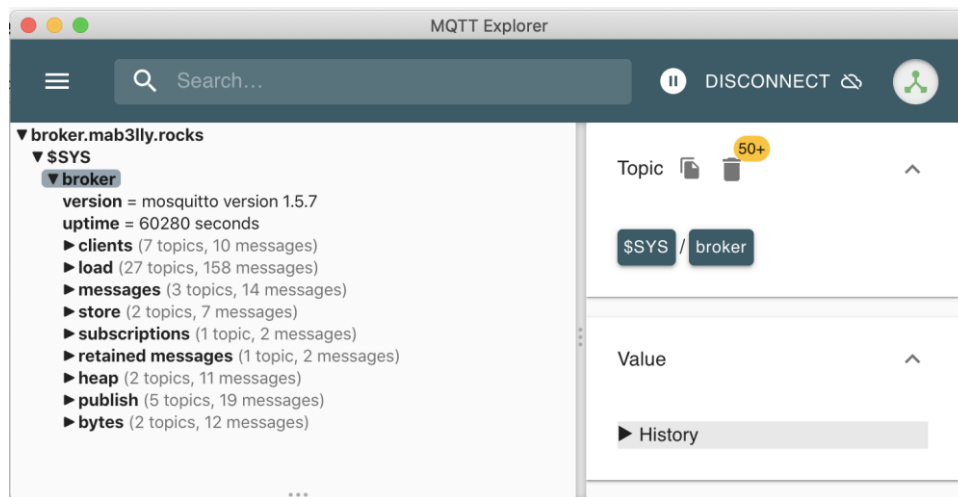
```

## Broker:

BrokerTest:

```
mosquitto_pub -h broker.mab3lly.rocks -t test/test -m "Test from Wannes"
```

Broker: broker.mab3lly.rocks



GUI:

Communicatie:

