Universidad Rafael Landívar
Facultad de Ingeniería
Ingeniería en Informática y sistemas
Arquitectura del Computador II
Sección 1
Ing. Jefferson Esquivel

Laboratorio No. 8 y 9

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CODIGO LAMBDA AMAZON (lab9)

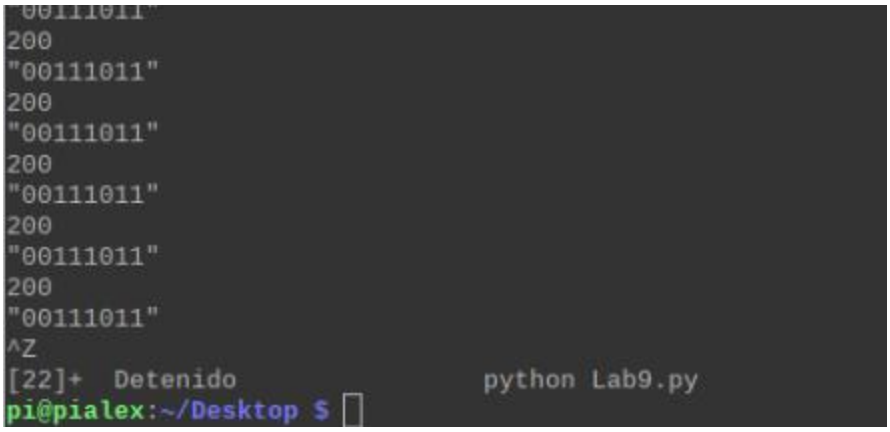
```
import json

def lambda_handler(event, context):
    # TODO implement
    if event['PulsoPi'] == '1':
        return "00111011"
    else:
        return "1111110"
```

CODIGO LAMBDA AMAZON (lab8)

```
import json

def lambda_handler(event, context):
    # TODO implement
    if event['PulsoPi'] == '0':
        return "1111110"
    elif event['PulsoPi'] == '1':
        return "0110000"
    elif event['PulsoPi'] == '2':
        return "1101101"
    elif event['PulsoPi'] == '3':
        return "1111001"
    elif event['PulsoPi'] == '4':
        return "0110011"
    elif event['PulsoPi'] == '5':
        return "1011011"
    elif event['PulsoPi'] == '6':
        return "1011111"
    elif event['PulsoPi'] == '7':
        return "1110000"
    elif event['PulsoPi'] == '8':
        return "1111111"
    else:
        return "1111011”
```


"00111011"
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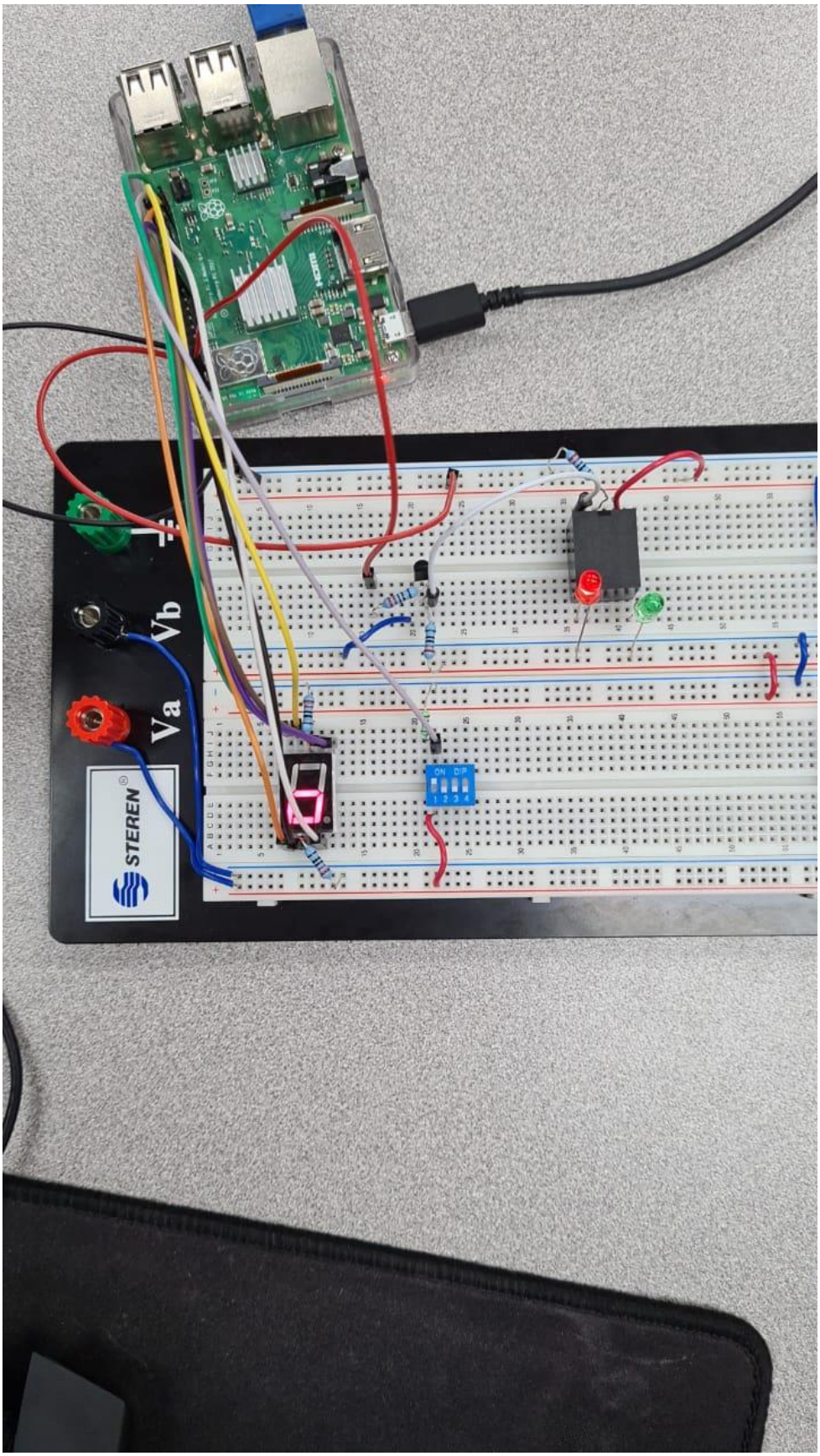
[22]+ Detenido python Lab9.py
pi@pialex:~/Desktop $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CODIGO RASP (LAB9)

```
import requests
import RPi.GPIO as GPIO
import time
from datetime import datetime


GPIO.setwarnings(False)
GPIO.setmode(GPIO.BCM)
GPIO.setup(9,GPIO.OUT) #0
GPIO.setup(11,GPIO.OUT) #1
GPIO.setup(5,GPIO.OUT) #2
GPIO.setup(6,GPIO.OUT) #3
GPIO.setup(13,GPIO.OUT) #4
GPIO.setup(19,GPIO.OUT) #5
GPIO.setup(2,GPIO.OUT) #5
GPIO.setup(26,GPIO.OUT) #6

GPIO.setup(20,GPIO.IN) #dip
time1 = 0
while True:
   if GPIO.input(20):
      time1 = 1
      URL = 'https://w95davn4k4.execute-api.us-east-2.amazonaws.com/Fase1/'
      URL = URL + "?PulsoPi=" + str(time1)
      response = requests.post(URL)
      print(response.status_code)
      bit1 = response.text[1]
      bit2 = response.text[2]
      bit3 = response.text[3]
      bit4 = response.text[4]
      bit5 = response.text[5]
      bit6 = response.text[6]
      bit7 = response.text[7]
      bit8 = response.text[8]
```

```
if bit1 == “1” or bit1 == “0”:
   if bit1 == “1”:
      GPIO.output(9,True)
   else:
      GPIO.output(9, False)

if bit2 == “1” or bit2 == “0”:
   if bit2 == “1”:
      GPIO.output(11,True)
   else:
      GPIO.output(11, False)

if bit3 == “1” or bit3 == “0”:
   if bit3 == “1”:
      GPIO.output(5,True)
   else:
      GPIO.output(5, False)

if bit4 == “1” or bit4 == “0”:
   if bit4 == “1”:
      GPIO.output(6,True)
   else:
      GPIO.output(6, False)

if bit5 == “1” or bit5 == “0”:
   if bit5== “1”:
      GPIO.output(13,True)
   else:
      GPIO.output(13, False)

if bit6 == “1” or bit6 == “0”:
   if bit6 == “1”:
      GPIO.output(19,True)
   else:
      GPIO.output(19, False)

if bit7 == “1” or bit7 == “0”:
```

```
        if bit7 == “1”:
            GPIO.output(26,True)
        else:
            GPIO.output(26, False)


    if bit8 == “1” or bit8 == “0”:
        if bit8 == “1”:
            GPIO.output(2,True)
        else:
            GPIO.output(2,False)
    print(response.text)

else:
    time1 = 0
    URL = ‘https://w95davn4k4.execute-api.us-east-2.amazonaws.com/Fase1/’
    URL = URL + “?PulsoPi=” + str(time1)
    response = requests.post(URL)
    print(response.status_code)
    bit1 = response.text[1]
    bit2 = response.text[2]
    bit3 = response.text[3]
    bit4 = response.text[4]
    bit5 = response.text[5]
    bit6 = response.text[6]
    bit7 = response.text[7]

    if bit1 == “1” or bit1 == “0”:
        if bit1 == “1”:
            GPIO.output(9,True)
        else:
            GPIO.output(9, False)

    if bit2 == “1” or bit2 == “0”:
        if bit2 == “1”:
            GPIO.output(11,True)
        else:
```

```
            GPIO.output(11, False)

        if bit3 == “1” or bit3 == “0”:
            if bit3 == “1”:
                GPIO.output(5,True)
            else:
                GPIO.output(5, False)

        if bit4 == “1” or bit4 == “0”:
            if bit4 == “1”:
                GPIO.output(6,True)
            else:
                GPIO.output(6, False)

        if bit5 == “1” or bit5 == “0”:
            if bit5 == “1”:
                GPIO.output(13,True)
            else:
                GPIO.output(13, False)

        if bit6 == “1” or bit6 == “0”:
            if bit6 == “1”:
                GPIO.output(19,True)
            else:
                GPIO.output(19, False)

        if bit7 == “1” or bit7 == “0”:
            if bit7 == “1”:
                GPIO.output(26,True)
                GPIO.output(2,True)
            else:
                GPIO.output(26, False)
                GPIO.output(2,False)

GPIO.cleanup()
```

CODIGO RASP (LAB8)

```
import requests
import RPi.GPIO as GPIO
import time
from datetime import datetime


GPIO.setwarnings(False)
GPIO.setmode(GPIO.BCM)
GPIO.setup(9,GPIO.OUT) #0
GPIO.setup(11,GPIO.OUT) #1
GPIO.setup(5,GPIO.OUT) #2
GPIO.setup(6,GPIO.OUT) #3
GPIO.setup(13,GPIO.OUT) #4
GPIO.setup(19,GPIO.OUT) #5
GPIO.setup(2,GPIO.OUT) #5
GPIO.setup(26,GPIO.OUT) #6

GPIO.setup(20,GPIO.IN) #dip
time1 = 0
tiempoI = datetime.now()
tiempoF = datetime.now()
while True:
   tiempoI = datetime.now()
   while GPIO.input(20):
      tiempoF = datetime.now()

   if (tiempoF - tiempoI).seconds < 1:
      time1 = 0
      URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
```

```
URL = URL + "?PulsoPi=" + str(time1)
response = requests.post(URL)
print(response.status_code)
bit1 = response.text[1]
bit2 = response.text[2]
bit3 = response.text[3]
bit4 = response.text[4]
bit5 = response.text[5]
bit6 = response.text[6]
bit7 = response.text[7]

if bit1 == "1" or bit1 == "0":
   if bit1 == "1":
      GPIO.output(9,True)
   else:
      GPIO.output(9, False)

if bit2 == "1" or bit2 == "0":
   if bit2 == "1":
      GPIO.output(11,True)
   else:
      GPIO.output(11, False)

if bit3 == "1" or bit3 == "0":
   if bit3 == "1":
      GPIO.output(5,True)
   else:
      GPIO.output(5, False)

if bit4 == "1" or bit4 == "0":
   if bit4 == "1":
      GPIO.output(6,True)
   else:
```

```
            GPIO.output(6, False)

        if bit5 == "1" or bit5 == "0":
            if bit5 == "1":
                GPIO.output(13,True)
            else:
                GPIO.output(13, False)

        if bit6 == "1" or bit6 == "0":
            if bit6 == "1":
                GPIO.output(19,True)
            else:
                GPIO.output(19, False)

        if bit7 == "1" or bit7 == "0":
            if bit7 == "1":
                GPIO.output(26,True)
                GPIO.output(2,True)
            else:
                GPIO.output(26, False)
                GPIO.output(2,False)
        print("0")
    elif (tiempoF - tiempoI).seconds < 2:
        time1 = 1
        URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
        URL = URL + "?PulsoPi=" + str(time1)
        response = requests.post(URL)
        print(response.status_code)
        bit1 = response.text[1]
        bit2 = response.text[2]
        bit3 = response.text[3]
        bit4 = response.text[4]
```

```
bit5 = response.text[5]
bit6 = response.text[6]
bit7 = response.text[7]

if bit1 == "1" or bit1 == "0":
   if bit1 == "1":
      GPIO.output(9,True)
   else:
      GPIO.output(9, False)

if bit2 == "1" or bit2 == "0":
   if bit2 == "1":
      GPIO.output(11,True)
   else:
      GPIO.output(11, False)

if bit3 == "1" or bit3 == "0":
   if bit3 == "1":
      GPIO.output(5,True)
   else:
      GPIO.output(5, False)

if bit4 == "1" or bit4 == "0":
   if bit4 == "1":
      GPIO.output(6,True)
   else:
      GPIO.output(6, False)

if bit5 == "1" or bit5 == "0":
   if bit5 == "1":
      GPIO.output(13,True)
   else:
      GPIO.output(13, False)
```

```
        if bit6 == "1" or bit6 == "0":
            if bit6 == "1":
                GPIO.output(19,True)
            else:
                GPIO.output(19, False)

        if bit7 == "1" or bit7 == "0":
            if bit7 == "1":
                GPIO.output(26,True)
                GPIO.output(2,True)
            else:
                GPIO.output(26, False)
                GPIO.output(2,False)
        print("1")
    elif (tiempoF - tiempoI).seconds < 3:
        time1 = 2
        URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
        URL = URL + "?PulsoPi=" + str(time1)
        response = requests.post(URL)
        print(response.status_code)
        bit1 = response.text[1]
        bit2 = response.text[2]
        bit3 = response.text[3]
        bit4 = response.text[4]
        bit5 = response.text[5]
        bit6 = response.text[6]
        bit7 = response.text[7]

        if bit1 == "1" or bit1 == "0":
            if bit1 == "1":
                GPIO.output(9,True)
```

```
    else:
        GPIO.output(9, False)

if bit2 == "1" or bit2 == "0":
    if bit2 == "1":
        GPIO.output(11,True)
    else:
        GPIO.output(11, False)

if bit3 == "1" or bit3 == "0":
    if bit3 == "1":
        GPIO.output(5,True)
    else:
        GPIO.output(5, False)

if bit4 == "1" or bit4 == "0":
    if bit4 == "1":
        GPIO.output(6,True)
    else:
        GPIO.output(6, False)

if bit5 == "1" or bit5 == "0":
    if bit5 == "1":
        GPIO.output(13,True)
    else:
        GPIO.output(13, False)

if bit6 == "1" or bit6 == "0":
    if bit6 == "1":
        GPIO.output(19,True)
    else:
        GPIO.output(19, False)
```

```
        if bit7 == "1" or bit7 == "0":
            if bit7 == "1":
                GPIO.output(26,True)
                GPIO.output(2,True)
            else:
                GPIO.output(26, False)
                GPIO.output(2,False)
        print("2")

    elif (tiempoF - tiempoI).seconds < 4:
        time1 = 3
        URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
        URL = URL + "?PulsoPi=" + str(time1)
        response = requests.post(URL)
        print(response.status_code)
        bit1 = response.text[1]
        bit2 = response.text[2]
        bit3 = response.text[3]
        bit4 = response.text[4]
        bit5 = response.text[5]
        bit6 = response.text[6]
        bit7 = response.text[7]

        if bit1 == "1" or bit1 == "0":
            if bit1 == "1":
                GPIO.output(9,True)
            else:
                GPIO.output(9, False)

        if bit2 == "1" or bit2 == "0":
            if bit2 == "1":
                GPIO.output(11,True)
```

```
    else:
        GPIO.output(11, False)

if bit3 == "1" or bit3 == "0":
    if bit3 == "1":
        GPIO.output(5,True)
    else:
        GPIO.output(5, False)

if bit4 == "1" or bit4 == "0":
    if bit4 == "1":
        GPIO.output(6,True)
    else:
        GPIO.output(6, False)

if bit5 == "1" or bit5 == "0":
    if bit5 == "1":
        GPIO.output(13,True)
    else:
        GPIO.output(13, False)

if bit6 == "1" or bit6 == "0":
    if bit6 == "1":
        GPIO.output(19,True)
    else:
        GPIO.output(19, False)

if bit7 == "1" or bit7 == "0":
    if bit7 == "1":
        GPIO.output(26,True)
        GPIO.output(2,True)
    else:
        GPIO.output(26, False)
```

```
            GPIO.output(2,False)
        print("3")

    elif (tiempoF - tiempoI).seconds < 5:
        time1 = 4
        URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
        URL = URL + "?PulsoPi=" + str(time1)
        response = requests.post(URL)
        print(response.status_code)
        bit1 = response.text[1]
        bit2 = response.text[2]
        bit3 = response.text[3]
        bit4 = response.text[4]
        bit5 = response.text[5]
        bit6 = response.text[6]
        bit7 = response.text[7]

        if bit1 == "1" or bit1 == "0":
            if bit1 == "1":
                GPIO.output(9,True)
            else:
                GPIO.output(9, False)

        if bit2 == "1" or bit2 == "0":
            if bit2 == "1":
                GPIO.output(11,True)
            else:
                GPIO.output(11, False)

        if bit3 == "1" or bit3 == "0":
            if bit3 == "1":
                GPIO.output(5,True)
```

```
        else:
            GPIO.output(5, False)

    if bit4 == "1" or bit4 == "0":
        if bit4 == "1":
            GPIO.output(6,True)
        else:
            GPIO.output(6, False)

    if bit5 == "1" or bit5 == "0":
        if bit5 == "1":
            GPIO.output(13,True)
        else:
            GPIO.output(13, False)

    if bit6 == "1" or bit6 == "0":
        if bit6 == "1":
            GPIO.output(19,True)
        else:
            GPIO.output(19, False)

    if bit7 == "1" or bit7 == "0":
        if bit7 == "1":
            GPIO.output(26,True)
            GPIO.output(2,True)
        else:
            GPIO.output(26, False)
            GPIO.output(2,False)
    print("4")

elif (tiempoF - tiempoI).seconds < 6:
    time1 = 5
```

```
        URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
        URL = URL + "?PulsoPi=" + str(time1)
        response = requests.post(URL)
        print(response.status_code)
        bit1 = response.text[1]
        bit2 = response.text[2]
        bit3 = response.text[3]
        bit4 = response.text[4]
        bit5 = response.text[5]
        bit6 = response.text[6]
        bit7 = response.text[7]

        if bit1 == "1" or bit1 == "0":
            if bit1 == "1":
                GPIO.output(9,True)
            else:
                GPIO.output(9, False)

        if bit2 == "1" or bit2 == "0":
            if bit2 == "1":
                GPIO.output(11,True)
            else:
                GPIO.output(11, False)

        if bit3 == "1" or bit3 == "0":
            if bit3 == "1":
                GPIO.output(5,True)
            else:
                GPIO.output(5, False)

        if bit4 == "1" or bit4 == "0":
            if bit4 == "1":
```

```
            GPIO.output(6,True)
        else:
            GPIO.output(6, False)

    if bit5 == "1" or bit5 == "0":
        if bit5 == "1":
            GPIO.output(13,True)
        else:
            GPIO.output(13, False)

    if bit6 == "1" or bit6 == "0":
        if bit6 == "1":
            GPIO.output(19,True)
        else:
            GPIO.output(19, False)

    if bit7 == "1" or bit7 == "0":
        if bit7 == "1":
            GPIO.output(26,True)
            GPIO.output(2,True)
        else:
            GPIO.output(26, False)
            GPIO.output(2,False)
    print("5")

  elif (tiempoF - tiempoI).seconds < 7:
    time1 = 6
    URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
    URL = URL + "?PulsoPi=" + str(time1)
    response = requests.post(URL)
    print(response.status_code)
    bit1 = response.text[1]
```

```
bit2 = response.text[2]
bit3 = response.text[3]
bit4 = response.text[4]
bit5 = response.text[5]
bit6 = response.text[6]
bit7 = response.text[7]

if bit1 == "1" or bit1 == "0":
   if bit1 == "1":
      GPIO.output(9,True)
   else:
      GPIO.output(9, False)

if bit2 == "1" or bit2 == "0":
   if bit2 == "1":
      GPIO.output(11,True)
   else:
      GPIO.output(11, False)

if bit3 == "1" or bit3 == "0":
   if bit3 == "1":
      GPIO.output(5,True)
   else:
      GPIO.output(5, False)

if bit4 == "1" or bit4 == "0":
   if bit4 == "1":
      GPIO.output(6,True)
   else:
      GPIO.output(6, False)

if bit5 == "1" or bit5 == "0":
   if bit5 == "1":
```

```
            GPIO.output(13,True)
        else:
            GPIO.output(13, False)

    if bit6 == "1" or bit6 == "0":
        if bit6 == "1":
            GPIO.output(19,True)
        else:
            GPIO.output(19, False)

    if bit7 == "1" or bit7 == "0":
        if bit7 == "1":
            GPIO.output(26,True)
            GPIO.output(2,True)
        else:
            GPIO.output(26, False)
            GPIO.output(2,False)
    print("6")

  elif (tiempoF - tiempoI).seconds < 8:
    time1 = 7
    URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
    URL = URL + "?PulsoPi=" + str(time1)
    response = requests.post(URL)
    print(response.status_code)
    bit1 = response.text[1]
    bit2 = response.text[2]
    bit3 = response.text[3]
    bit4 = response.text[4]
    bit5 = response.text[5]
    bit6 = response.text[6]
    bit7 = response.text[7]
```

```
if bit1 == "1" or bit1 == "0":
    if bit1 == "1":
        GPIO.output(9,True)
    else:
        GPIO.output(9, False)

if bit2 == "1" or bit2 == "0":
    if bit2 == "1":
        GPIO.output(11,True)
    else:
        GPIO.output(11, False)

if bit3 == "1" or bit3 == "0":
    if bit3 == "1":
        GPIO.output(5,True)
    else:
        GPIO.output(5, False)

if bit4 == "1" or bit4 == "0":
    if bit4 == "1":
        GPIO.output(6,True)
    else:
        GPIO.output(6, False)

if bit5 == "1" or bit5 == "0":
    if bit5 == "1":
        GPIO.output(13,True)
    else:
        GPIO.output(13, False)

if bit6 == "1" or bit6 == "0":
    if bit6 == "1":
```

```
            GPIO.output(19,True)
        else:
            GPIO.output(19, False)

    if bit7 == "1" or bit7 == "0":
        if bit7 == "1":
            GPIO.output(26,True)
            GPIO.output(2,True)
        else:
            GPIO.output(26, False)
            GPIO.output(2,False)
    print("7")

  elif (tiempoF - tiempoI).seconds < 9:
    time1 = 8
    URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
    URL = URL + "?PulsoPi=" + str(time1)
    response = requests.post(URL)
    print(response.status_code)
    bit1 = response.text[1]
    bit2 = response.text[2]
    bit3 = response.text[3]
    bit4 = response.text[4]
    bit5 = response.text[5]
    bit6 = response.text[6]
    bit7 = response.text[7]

    if bit1 == "1" or bit1 == "0":
        if bit1 == "1":
            GPIO.output(9,True)
        else:
            GPIO.output(9, False)
```

```
if bit2 == "1" or bit2 == "0":
    if bit2 == "1":
        GPIO.output(11,True)
    else:
        GPIO.output(11, False)

if bit3 == "1" or bit3 == "0":
    if bit3 == "1":
        GPIO.output(5,True)
    else:
        GPIO.output(5, False)

if bit4 == "1" or bit4 == "0":
    if bit4 == "1":
        GPIO.output(6,True)
    else:
        GPIO.output(6, False)

if bit5 == "1" or bit5 == "0":
    if bit5 == "1":
        GPIO.output(13,True)
    else:
        GPIO.output(13, False)

if bit6 == "1" or bit6 == "0":
    if bit6 == "1":
        GPIO.output(19,True)
    else:
        GPIO.output(19, False)

if bit7 == "1" or bit7 == "0":
    if bit7 == "1":
```

```
            GPIO.output(26,True)
            GPIO.output(2,True)
        else:
            GPIO.output(26, False)
            GPIO.output(2,False)
    print("8")

  elif (tiempoF - tiempoI).seconds < 10:
    time1 = 9
    URL = 'https://w95davn4k4.execute-api.us-east-
2.amazonaws.com/Fase1/'
    URL = URL + "?PulsoPi=" + str(time1)
    response = requests.post(URL)
    print(response.status_code)
    bit1 = response.text[1]
    bit2 = response.text[2]
    bit3 = response.text[3]
    bit4 = response.text[4]
    bit5 = response.text[5]
    bit6 = response.text[6]
    bit7 = response.text[7]

    if bit1 == "1" or bit1 == "0":
        if bit1 == "1":
            GPIO.output(9,True)
        else:
            GPIO.output(9, False)

    if bit2 == "1" or bit2 == "0":
        if bit2 == "1":
            GPIO.output(11,True)
        else:
            GPIO.output(11, False)
```

```
if bit3 == "1" or bit3 == "0":
    if bit3 == "1":
        GPIO.output(5,True)
    else:
        GPIO.output(5, False)

if bit4 == "1" or bit4 == "0":
    if bit4 == "1":
        GPIO.output(6,True)
    else:
        GPIO.output(6, False)

if bit5 == "1" or bit5 == "0":
    if bit5 == "1":
        GPIO.output(13,True)
    else:
        GPIO.output(13, False)

if bit6 == "1" or bit6 == "0":
    if bit6 == "1":
        GPIO.output(19,True)
    else:
        GPIO.output(19, False)

if bit7 == "1" or bit7 == "0":
    if bit7 == "1":
        GPIO.output(26,True)
        GPIO.output(2,True)
    else:
        GPIO.output(26, False)
        GPIO.output(2,False)
print("9")
```

```
GPIO.cleanup()
```