

SMART PARKING

(PHASE 4)

```
1 import utime
2 import time
3 from machine import Pin,I2C
4 from ssd1306 import SSD1306_I2C
5 from machine import PWM
6 def gate():
7     for position in range(1000,5000,50):
8         servo.duty_u16(position)
9         time.sleep(0.01)
10        if(position==2500):
11            time.sleep(5)
12 def distance(trigger,echo):
13     start=0
14     end=0
15     trigger.low()
16     utime.sleep_us(2)
17     trigger.high()
18     utime.sleep_us(5)
19     trigger.low()
20     while echo.value() == 0:
21         start = utime.ticks_us()
22     while echo.value() == 1:
23         end = utime.ticks_us()
24     timepassed=end-start
25     dist= (timepassed * 0.0343) / 2
26     return dist
27 trigger=Pin(28, Pin.OUT)
28 led=Pin(4,Pin.OUT)
29 echo_1=Pin(27, Pin.IN)
30 echo_2=Pin(26, Pin.IN)
```

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main.py diagram.json Sim

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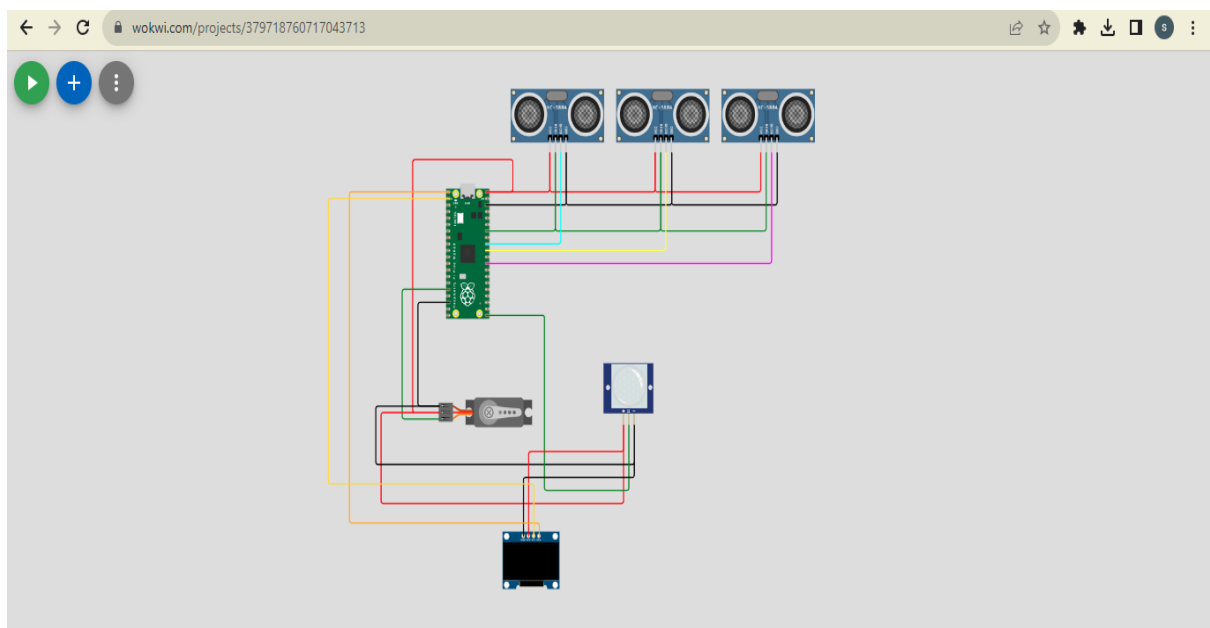
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main.py

```
27 trigger=Pin(28, Pin.OUT)
28 led=Pin(4, Pin.OUT)
29 echo_1=Pin(27, Pin.IN)
30 echo_2=Pin(26, Pin.IN)
31 echo_3=Pin(22, Pin.IN)
32 servo = PWM(Pin(12))
33 servo.freq(50)
34 pir=Pin(16, Pin.IN, Pin.PULL_UP)
35 i2c=I2C(0, sda=Pin(0), scl=Pin(1), freq=400000)
36 oled = SSD1306_I2C(128, 64, i2c)
37 while(1):
38     if(pir.value()==1):
39         led.low()
40         parking_1=distance(trigger,echo_1)
41         parking_2=distance(trigger,echo_2)
42         parking_3=distance(trigger,echo_3)
43         if(parking_1>50):
44             gate()
45             oled.text("Slot 1")
46         elif(parking_2>50):
47             gate()
48             oled.text("Slot 2")
49         elif(parking_3>50):
50             gate()
51             oled.text("Slot 3")
52     else:
53         oled.text("NO SPACE",0,0)
54         oled.show()
55         time.sleep(5)
56         oled.clearDisplay()
```

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SOURCE CODE

```
import utime
import time
from machine import Pin
from machine import PWM
def gate():
    for position in range(1000,5000,50):
```

```

        servo.duty_u16(position)
        time.sleep(0.01)
        if(position==2500):
            time.sleep(5)
def distance(trigger,echo):
    start=0
    end=0
    trigger.low()
    utime.sleep_us(2)
    trigger.high()
    utime.sleep_us(5)
    trigger.low()
    while echo.value() == 0:
        start = utime.ticks_us()
    while echo.value() == 1:
        end = utime.ticks_us()
    timepassed=end-start
    dist= (timepassed * 0.0343) / 2
    return dist
trigger=Pin(28, Pin.OUT)
led=Pin(4,Pin.OUT)
echo_1=Pin(27, Pin.IN)
echo_2=Pin(26, Pin.IN)
echo_3=Pin(22,Pin.IN)
servo = PWM(Pin(12))
servo.freq(50)
pir=Pin(16,Pin.IN,Pin.PULL_UP)

while(1):
    if(pir.value()==1):
        led.low()
        parking_1=distance(trigger,echo_1)
        parking_2=distance(trigger,echo_2)
        parking_3=distance(trigger,echo_3)
        if(parking_1>50):
            gate()
        elif(parking_2>50):
            gate()
        elif(parking_3>50):
            gate()
        time.sleep(5)

```

WOKWI LINK:

<https://wokwi.com/projects/379718760717043713>

