EVER BLOOMING MECHANICAL TULIP

FROM GAMBIT

Furkan Cemal Çalışkan
1810206046

Semih Şahin
1810206083

Melih Karakaya
1810206030

Samet Böyüközkök
1910206520

Ezgi Yıldız
1810206050

Muhammet Ortaç
1810206063

Sami Eroğlu
1810206032

Abdurrezzak Hasan
2017710205552

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INTRODUCTION

In this project, we aimed to make a flower that opens and closes when the touch sensor is triggered.

Our Flower!

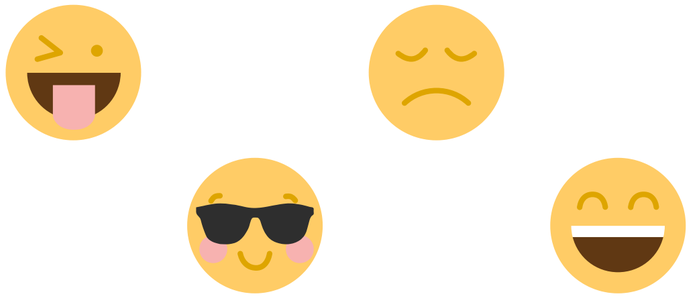
Our System!

OUR NECCESITIES

1. Some brass tubes and rods
2. Raspberry PI Model 3B+
3. TTP223B Touch Sensor
4. Small Servo Motor

Thats It!

These items were what we needed. But due to some reasons, we had to change some items.



LET'S BEGIN!

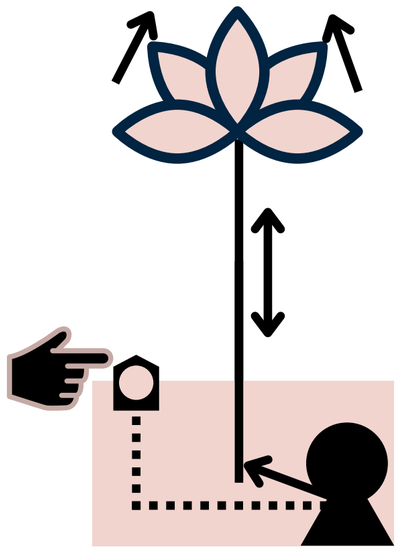
Are You Ready?

OUR CODE

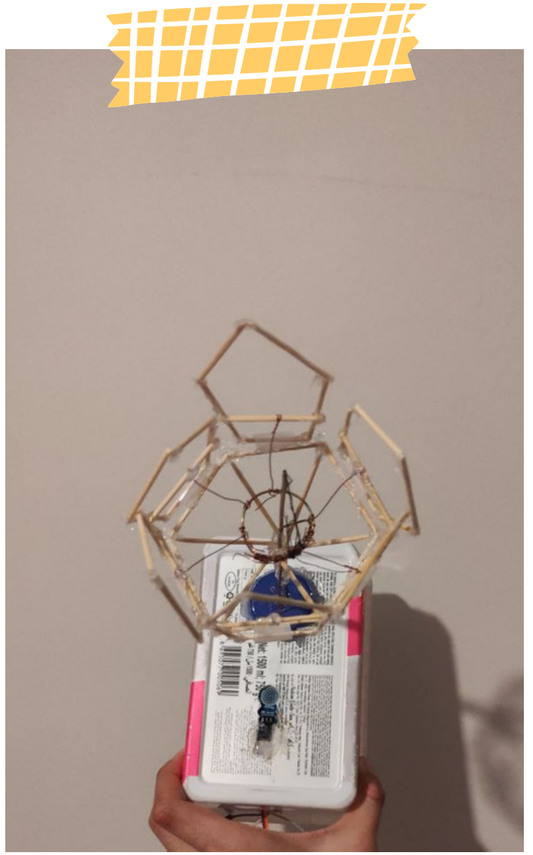
```python
# Import libraries
import RPi.GPIO as GPIO
import time

# Set GPIO numbering mode #
GPIO.setmode(GPIO.BCM)

# pin locations
GPIO.setup(17,GPIO.OUT) # servo motor
GPIO.setup(21, GPIO.IN, pull_up_down = GPIO.PUD_UP) # touch sensor

# pin and the hertz
servo1 = GPIO.PWM(17, 50)

servo1.start(0)
```

```python
try:
    k = 0 # not yet at 90 degrees
    while True:
        if GPIO.input(21) == True:
            print('Touch Detected')
        time.sleep(0.5)
        i = 1
        j = 5
        if k == 1:
            servo1.ChangeDutyCycle(2) # to 0 degrees
            time.sleep(0.5)
            servo1.ChangeDutyCycle(0)
            k = 0
        else:
            while i<j+1:
                servo1.ChangeDutyCycle(2+((90/18)*i/j)) # to 90 degrees
                time.sleep(0.3)
                servo1.ChangeDutyCycle(0)
                i = i + 1
                if i == 6:
                    k = k + 1 # 90 degree completed, prepare for the 0 degree turn
                    if GPIO.input(21) == False:
                        print('No Touch Detected')
                        time.sleep(0.5)
finally: #Clean things up at the end
    servo1.stop()
    GPIO.cleanup()
    print("Goodbye!")
```

OUR MECHANICS



The schematic



The real one

In this journey, we have encountered a series of problems but we did our best.

THANK YOU!

Have a great day ahead.