

```
1  # code for motors
2  import pygame
3  from pygame.locals import*
4  import os
5  import subprocess
6  import time
7  import RPi.GPIO as GPIO
8
9  os.putenv('SDL_VIDEODRIVER', 'fbcon')
10 os.putenv('SDL_FBDEV', '/dev/fb0')
11 os.putenv('SDL_MOUSEDRV', 'TSLIB')
12 os.putenv('SDL_MOUSEDEV', '/dev/input/touchscreen')
13
14 pygame.init()
15
16 # set up GPIO pins
17 GPIO.setmode(GPIO.BCM)
18
19 # rotation
20 GPIO.setup(5, GPIO.OUT)
21 GPIO.setup(6, GPIO.OUT)
22 GPIO.setup(13, GPIO.OUT) # PWM A
23
24 # tilt
25 GPIO.setup(20, GPIO.OUT)
26 GPIO.setup(21, GPIO.OUT)
27 GPIO.setup(16, GPIO.OUT) # PWM B
28
29 # initialization
30 code_running=True
31 starttime=time.time()
32
33 # Start motors
34 p1=GPIO.PWM(13, 50)
35 p2=GPIO.PWM(16, 50)
36 p1.start(0)
37 p2.start(0)
38
39 while code_running:
40     for event in pygame.event.get():
41
42         if (event.type is MOUSEBUTTONDOWN):
43             pos=pygame.mouse.get_pos()
44             x,y=pos
45         elif(event.type is MOUSEBUTTONUP):
```

```
46         if (125<x<195 and 85<y<155): #coordinates of start
47             time.sleep(1)
48
49             #insert color code
50             #analyze the color
51
52             if red
53
54         # Forward
55         GPIO.output(6, GPIO.HIGH)
56         GPIO.output(5, GPIO.LOW)
57         GPIO.output(21, GPIO.HIGH)
58         GPIO.output(20, GPIO.LOW)
59         p1.ChangeDutyCycle(50)
60         p2.ChangeDutyCycle(50)
61
62         # Backward
63         GPIO.output(6, GPIO.LOW)
64         GPIO.output(5, GPIO.HIGH)
65         GPIO.output(21, GPIO.LOW)
66         GPIO.output(20, GPIO.HIGH)
67         p1.ChangeDutyCycle(50)
68         p2.ChangeDutyCycle(50)
69
70         # if basket 1
71             # go a certain amount of time + certain direction
72             # tip
73             # go back to the center and initialize
74
75
76
```