```
import wiringpi as wp
import time
wp.wiringPiSetupGpio()

# Constants
rpm = 45
time_period = 0.020 # in seconds


def motor(x,y,e):            # function to initialize motor pins
    wp.pinMode(x,1)
    wp.pinMode(y,1)
    wp.pinMode(e,1)
    return (x,y,e)


def servo(pin):              # function to initialize servo motor pins
    wp.pinMode(pin,1)
    return pin


def move(dir, dist):          # function to move 'dist ' in the 'dir' direction
    global pins
    x=pins[0][0],pins[1][0]
    y=pins[0][1],pins[1][1]
    e=pins[0][2],pins[1][2]

    time = (dist*60)/(rpm*3.142*7.4)
    if dir=='b':
        wp.digitalWrite(x[0],0)
        wp.digitalWrite(y[0],1)
        wp.digitalWrite(x[1],0)
        wp.digitalWrite(y[1],1)
    else:
        wp.digitalWrite(x[0],1)
```

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36          wp.digitalWrite(y[0],0)
37          wp.digitalWrite(x[1],1)
38          wp.digitalWrite(y[1],0)
39
40      wp.digitalWrite(e[0],1)
41      wp.digitalWrite(e[1],1)
42      wp.delay(int(time*1000))
43      wp.digitalWrite(e[0],0)
44      wp.digitalWrite(e[1],0)
45
46
47  def turn(dir,thetha):       # function to turn 'theta
    ' degrees in 'dir' direction
48      global pins
49      x=pins[0][0],pins[1][0]
50      y=pins[0][1],pins[1][1]
51      e=pins[0][2],pins[1][2]
52      time = (19.2*thetha)/(rpm*6*7.4)
53      if dir=='r':
54          wp.digitalWrite(x[0],0)
55          wp.digitalWrite(y[0],1)
56          wp.digitalWrite(x[1],1)
57          wp.digitalWrite(y[1],0)
58      else:
59          wp.digitalWrite(x[0],1)
60          wp.digitalWrite(y[0],0)
61          wp.digitalWrite(x[1],0)
62          wp.digitalWrite(y[1],1)
63      wp.digitalWrite(e[0],1)
64      wp.digitalWrite(e[1],1)
65      wp.delay(int(time*1000))
66      wp.digitalWrite(e[0],0)
67      wp.digitalWrite(e[1],0)
68
69
70  def gate(ball_captured):    # function to open or
    close gate based on 'ball_captured'
71      if (ball_captured % 2) == 0:
```

```
72          pwm(3)
73          print("Ball Captured")
74      else:
75          pwm(11)
76          print("Scored a goal")
77      move('b',8)
78      turn('r',180)
79
80
81  def pwm(duty_cycle):        # function to replicate
    softPwm
82      global time_period, pins
83      on_time = time_period * duty_cycle / 100
84      off_time = time_period - on_time
85      for i in range(20):
86          wp.digitalWrite(pins[2],1)
87          time.sleep(on_time)
88          wp.digitalWrite(pins[2],0)
89          time.sleep(off_time)
90
91  pins = (motor(22, 27, 17), motor(19, 13, 26), servo(
    4))
92  pwm(11)
93
```