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1  #!/usr/bin/python
2  # -*- coding: utf-8 -*-
3  # Author : Original author ludwigschuster
4  # Original Author Github: https://github.com/ludwigschuster/RasPi-GPIO-Stepmotor
5  # http://elecrow.com/
6  from gpiozero import OutputDevice
7  import time
8  import math
9
10
11 # Declare pins as output
12 pin_A = OutputDevice(5)
13 pin_B = OutputDevice(6)
14 pin_C = OutputDevice(13)
15 pin_D = OutputDevice(19)
16
17 class Stepmotor:
18
19     def __init__(self):
20         self.interval = 0.010
21
22     def Step1(self):
23         pin_D.on()
24         time.sleep(self.interval)
25         pin_D.off()
26
27     def Step2(self):
28         pin_D.on()
29         pin_C.on()
30         time.sleep(self.interval)
31         pin_D.off()
32         pin_C.off()
33
34     def Step3(self):
35         pin_C.on()
36         time.sleep(self.interval)
37         pin_C.off()
38
39     def Step4(self):
40         pin_B.on()
41         pin_C.on()
42         time.sleep(self.interval)
43         pin_B.off()
44         pin_C.off()
45
46     def Step5(self):
47         pin_B.on()
48         time.sleep(self.interval)
49         pin_B.off()
50
51     def Step6(self):
52         pin_A.on()
53         pin_B.on()
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54         time.sleep(self.interval)
55         pin_A.off()
56         pin_B.off()
57
58     def Step7(self):
59         pin_A.on()
60         time.sleep(self.interval)
61         pin_A.off()
62
63     def Step8(self):
64         pin_A.on()
65         pin_D.on()
66         time.sleep(self.interval)
67         pin_D.off()
68         pin_A.off()
69
70     def turn(self, count):
71         for i in range (int(count)):
72             self.Step1()
73             self.Step2()
74             self.Step3()
75             self.Step4()
76             self.Step5()
77             self.Step6()
78             self.Step7()
79             self.Step8()
80
81     def close(self):
82         # cleanup the GPIO pin use
83         pin_A.close()
84         pin_B.close()
85         pin_C.close()
86         pin_D.close()
87
88     def turnSteps(self, count):
89         # Turn n steps
90         # (supply with number of steps to turn)
91         for i in range (count):
92             self.turn(1)
93
94     def turnDegrees(self, count):
95         # Turn n degrees (small values can lead to inaccuracy)
96         # (supply with degrees to turn)
97         self.turn(round(count*512/360,0))
98
99     def turnDistance(self, dist, rad):
100         # Turn for translation of wheels or coil (inaccuracies involved e.g. due to
thickness of rope)
101         # (supply with distance to move and radius in same metric)
102         self.turn(round(512*dist/(2*math.pi*rad),0))
103
104 def main():
105
106     print("moving started")
```

```
107     motor = Stepmotor()
108     print("One Step")
109     motor.turnSteps(1)
110     time.sleep(0.5)
111     print("20 Steps")
112     motor.turnSteps(20)
113     time.sleep(0.5)
114     print("quarter turn")
115     motor.turnDegrees(90)
116     print("moving stopped")
117     motor.close()
118
119 if __name__ == "__main__":
120     main()
121
```