

```
1 from gpiozero import Button, LED
2 from time import sleep
3
4 # 定义按键矩阵的行和列引脚
5 row_pins = [27, 22, 5, 6]
6 col_pins = [25, 26, 19, 13]
7
8 # 定义按键矩阵的键值映射
9 key_map = [
10     ['1', '2', '3', '4'],
11     ['5', '6', '7', '8'],
12     ['9', '10', '11', '12'],
13     ['13', '14', '15', '16']
14 ]
15
16 # 初始化行输入和列输出引脚
17 rows = [Button(pin, pull_up=True) for pin in row_pins]
18 cols = [LED(pin) for pin in col_pins]
19
20 # 持续扫描按键
21 try:
22     while True:
23         # 逐个设置列输出引脚为低电平，然后检测行输入引脚的状态
24         for col in cols:
25             col.off()
26             for row in rows:
27                 if row.is_active:
28                     # 检测到按键按下
29                     row.wait_for_release()
30                     print("Key press:", key_map[rows.index(row)][cols.index(col)])
31                     break
32             col.on()
33             sleep(0.1)
34
35 except KeyboardInterrupt:
36     print("end")
37
38 finally:
39     # 清理GPIO状态
40     for row in rows:
41         row.close()
42     for col in cols:
43         col.close()
```