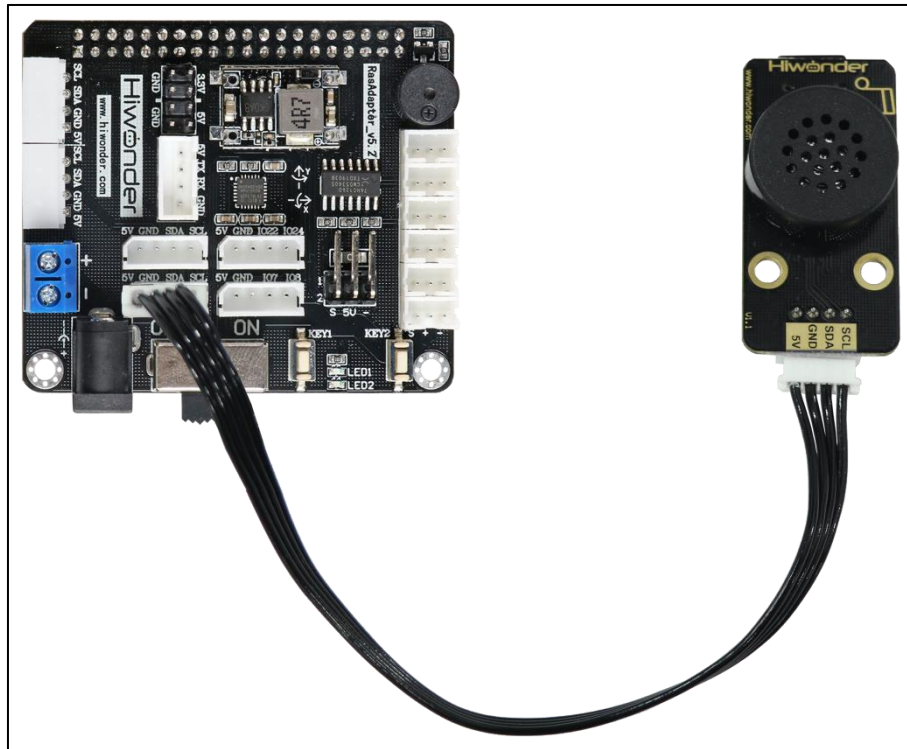


Lesson 3 MP3 Module

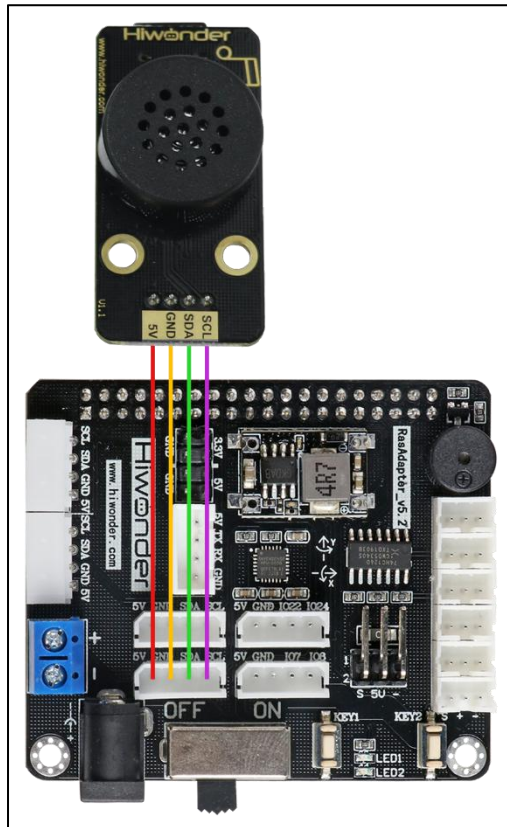
1. Getting Ready

Prepare a MP3 module and connect it to any one of IIC ports on Raspberry Pi expansion board through a 4PIN cable. The wiring effect is as follow:



Note: Please do not insert forcefully because 4PIN cable uses anti-reverse plugging design.

In addition, 4 female to female Dupont lines can also be used to connect MP3 module to Raspberry Pi expansion board, as the figure shown below:



2. Module Usage

The MP3 module used in this lesson uses IIC communication and it can process, transfer and decode the MP3 file through DPS of the digital signal processor.

3. Working Principle


In this project, insert TF card that has been stored the needed voice frequency into MP3 module so that you can control module to play music through program.

The source code of the program is located in:

`/home/pi/TonyPi/Extend/Sensor/MP3_Play.py`

```
29 def Stop(signum, frame):
30     global move_st
31     move_st = False
32     mp3.pause() #pause song play
33     print("\n")
34
35     signal.signal(signal.SIGINT, Stop)
36
37     skip = True
38
39 if __name__ == "__main__":
40     while move_st:
41         if skip:
42             mp3.volume(30) #set the volume to 30, please set before play.
43             mp3.playNum(18) #play song num0018
44             skip = False
45         else:
46             time.sleep(0.05)
```

4. Operation Steps

- 1) Click  in the upper left corner to open the terminal. Enter command "cd TonyPi/Extend/Sensor/" and press "Enter" to come to the directory of game programmings.

```
pi@raspberrypi:~ $ cd TonyPi/Extend/Sensor/
```

- 2) Enter "sudo python3 fan_control.py" command, and then press "Enter" to start the game.

```
pi@raspberrypi:~ $ cd TonyPi/Extend/Sensor/
pi@raspberrypi:~/TonyPi/Extend/Sensor $ sudo python3 MP3_Play.py
```

- 3) If want to close this program, press "Ctrl+C". You can try multiple time if fail to close.

5. Project Outcome

After the program is started, MP3 module will play the song The Little Apple once.

6. Function Extension

The program defaults to play The Little Apple. If want to change to other songs, you can operate according to the following steps. This section takes changing to La Song as example to illustrate.

Note: The replaced song needs to be download to the SD card of MP3, and named with number, for example, La Song is named 0019.

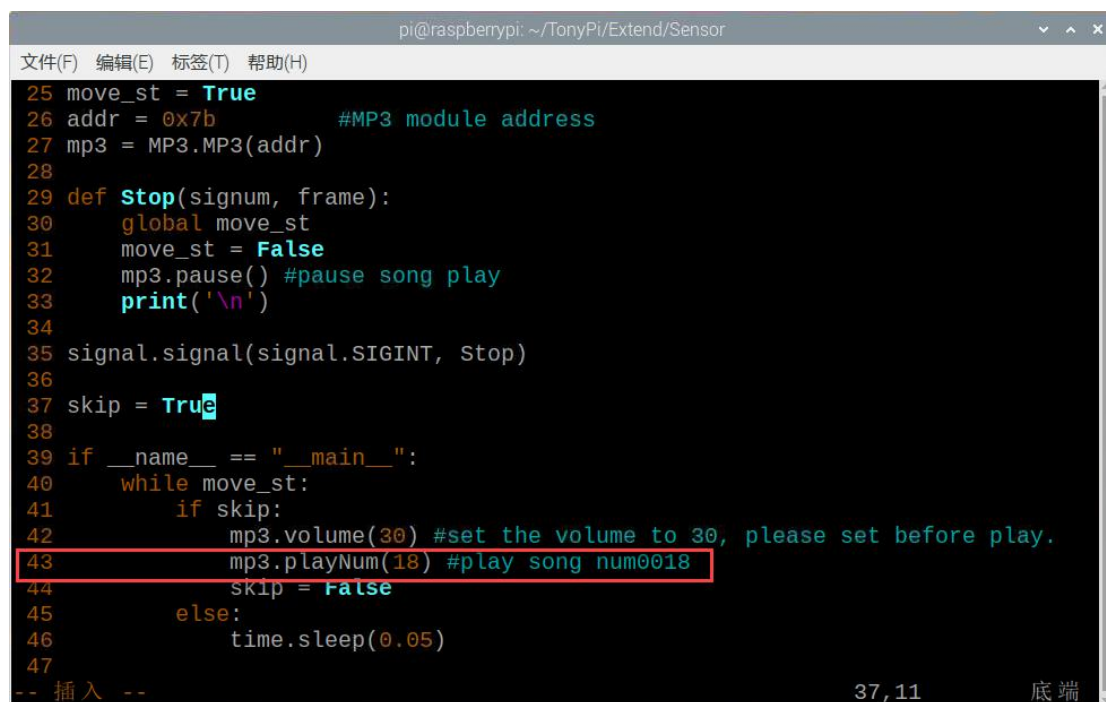
- 1) Open LX terminal, and then enter “**cd TonyPi/Extend/Sensor**” command and press “Enter” to come to the directory of the game programmings.

```
pi@raspberrypi:~ $ cd TonyPi/Extend/Sensor/
```

- 2) Enter “**sudo vim MP3_Play.py**” command, and then press “Enter” to open game program file.

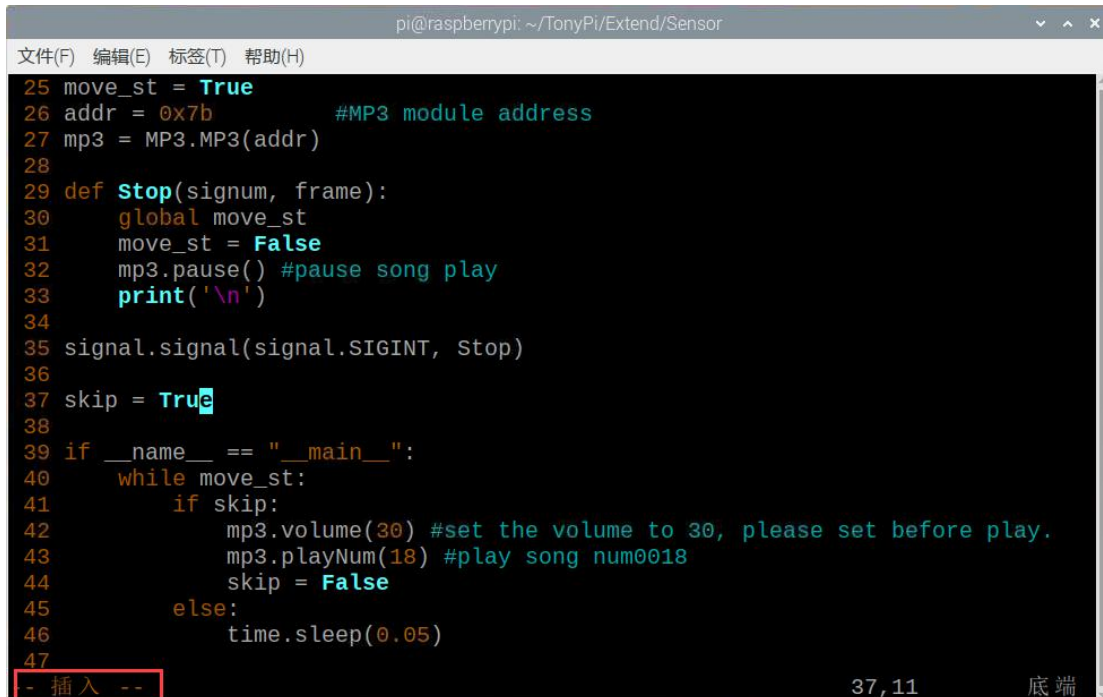
```
pi@raspberrypi:~ $ cd TonyPi/Extend/Sensor/  
pi@raspberrypi:~/TonyPi/Extend/Sensor $ sudo vim MP3_Play.py
```

- 3) Find the code shown in the figure below.



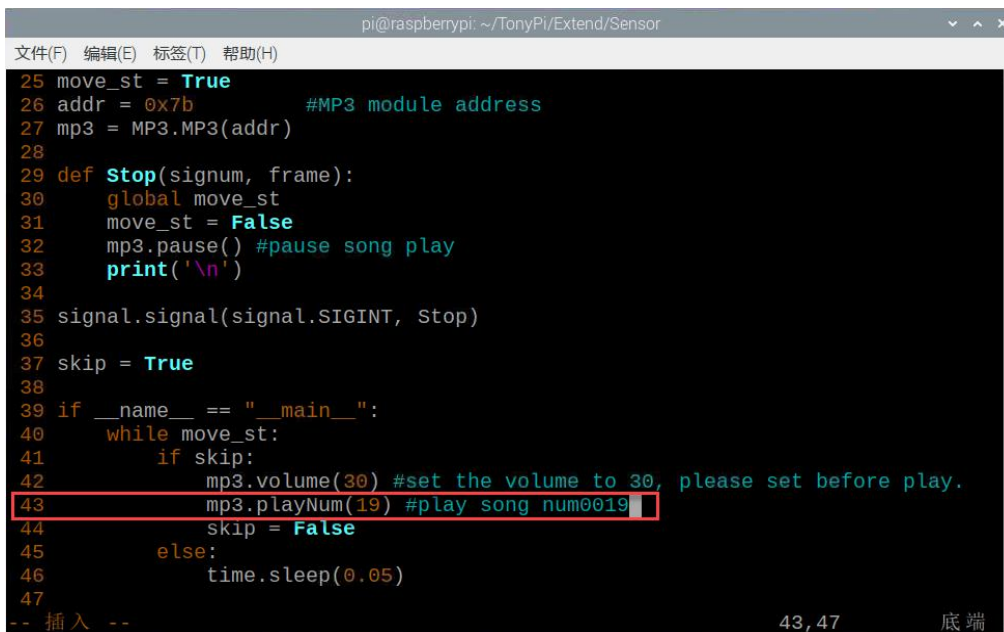
```
pi@raspberrypi: ~/TonyPi/Extend/Sensor  
文件(F) 编辑(E) 标签(T) 帮助(H)  
25 move_st = True  
26 addr = 0x7b #MP3 module address  
27 mp3 = MP3.MP3(addr)  
28  
29 def Stop(signum, frame):  
30     global move_st  
31     move_st = False  
32     mp3.pause() #pause song play  
33     print('\n')  
34  
35 signal.signal(signal.SIGINT, Stop)  
36  
37 skip = True  
38  
39 if __name__ == "__main__":  
40     while move_st:  
41         if skip:  
42             mp3.volume(30) #set the volume to 30, please set before play.  
43             mp3.playNum(18) #play song num0018  
44             skip = False  
45         else:  
46             time.sleep(0.05)  
47  
-- 插入 -- 37,11 底端
```

- 4) Press “i” key on keyboard to enter the editing mode.



```
pi@raspberrypi: ~/TonyPi/Extend/Sensor
文件(F) 编辑(E) 标签(T) 帮助(H)
25 move_st = True
26 addr = 0x7b          #MP3 module address
27 mp3 = MP3.MP3(addr)
28
29 def Stop(signum, frame):
30     global move_st
31     move_st = False
32     mp3.pause() #pause song play
33     print('\n')
34
35 signal.signal(signal.SIGINT, Stop)
36
37 skip = True
38
39 if __name__ == "__main__":
40     while move_st:
41         if skip:
42             mp3.volume(30) #set the volume to 30, please set before play.
43             mp3.playNum(18) #play song num0018
44             skip = False
45         else:
46             time.sleep(0.05)
47
-- 插入 --                                     37, 11      底端
```

- 5) Modify “18” in “mp3.playNum(18)” to “19”, as the figure shown below.



```
pi@raspberrypi: ~/TonyPi/Extend/Sensor
文件(F) 编辑(E) 标签(T) 帮助(H)
25 move_st = True
26 addr = 0x7b          #MP3 module address
27 mp3 = MP3.MP3(addr)
28
29 def Stop(signum, frame):
30     global move_st
31     move_st = False
32     mp3.pause() #pause song play
33     print('\n')
34
35 signal.signal(signal.SIGINT, Stop)
36
37 skip = True
38
39 if __name__ == "__main__":
40     while move_st:
41         if skip:
42             mp3.volume(30) #set the volume to 30, please set before play.
43             mp3.playNum(19) #play song num0019
44             skip = False
45         else:
46             time.sleep(0.05)
47
-- 插入 --                                     43, 47      底端
```

- 6) After modification, press “Esc” and enter “:wq” (please note that the colon is in front of wq), and then press “Enter” to save the modified content.

```
pi@raspberrypi: ~/TonyPi/Extend/Sensor
文件(F) 编辑(E) 标签(T) 帮助(H)
25 move_st = True
26 addr = 0x7b          #MP3 module address
27 mp3 = MP3.MP3(addr)
28
29 def Stop(signum, frame):
30     global move_st
31     move_st = False
32     mp3.pause() #pause song play
33     print('\n')
34
35 signal.signal(signal.SIGINT, Stop)
36
37 skip = True
38
39 if __name__ == "__main__":
40     while move_st:
41         if skip:
42             mp3.volume(30) #set the volume to 30, please set before play.
43             mp3.playNum(19) #play song num0019
44             skip = False
45         else:
46             time.sleep(0.05)
47
:wq
```