

#### 4.1.1 Voice Broadcast Preparation

##### Preparation:

- 1) Insert the speaker into the 2pin socket of the driver board correctly.
- 2) Connect the driver board and Raspberry Pi board with aux dual-head 3.5 audio cable.

After the connection is completed, we can test the hardware function and enter in the terminal:

```
aplay /usr/share/sounds/alsa/*
```

Speaker will broadcast all contents of the file.

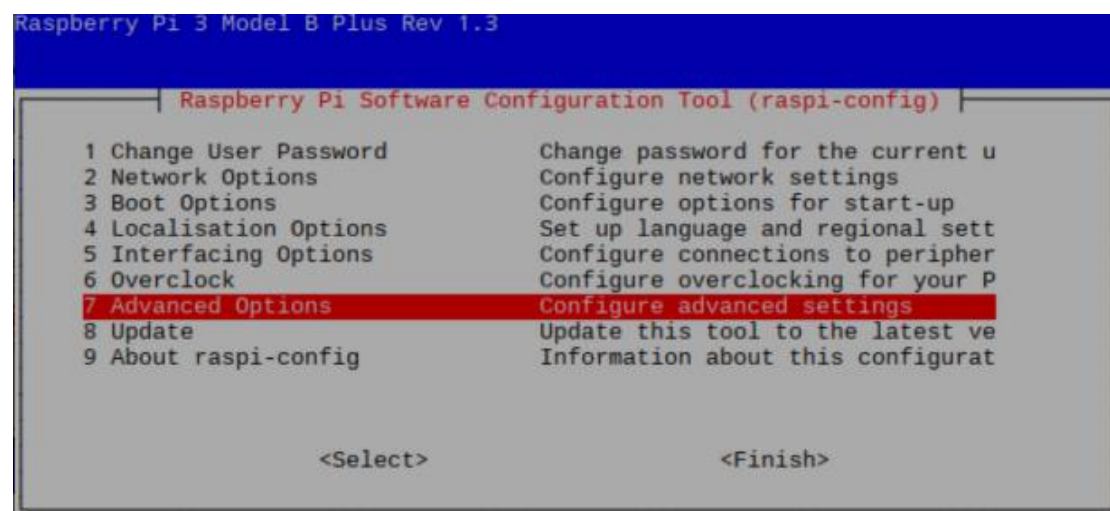
```
pi@raspberrypi:~ $ aplay /usr/share/sounds/alsa/*
Playing WAVE '/usr/share/sounds/alsa/Front_Center.wav' : Signed 16 bit Little Endian, Rate 48000 Hz, Mono
Playing WAVE '/usr/share/sounds/alsa/Front_Left.wav' : Signed 16 bit Little Endian, Rate 48000 Hz, Mono
Playing WAVE '/usr/share/sounds/alsa/Front_Right.wav' : Signed 16 bit Little Endian, Rate 48000 Hz, Mono
Playing WAVE '/usr/share/sounds/alsa/Noise.wav' : Signed 16 bit Little Endian, Rate 48000 Hz, Mono
Playing WAVE '/usr/share/sounds/alsa/Rear_Center.wav' : Signed 16 bit Little Endian, Rate 48000 Hz, Mono
Playing WAVE '/usr/share/sounds/alsa/Rear_Left.wav' : Signed 16 bit Little Endian, Rate 48000 Hz, Mono
Playing WAVE '/usr/share/sounds/alsa/Rear_Right.wav' : Signed 16 bit Little Endian, Rate 48000 Hz, Mono
Playing WAVE '/usr/share/sounds/alsa/Side_Left.wav' : Signed 16 bit Little Endian, Rate 48000 Hz, Mono
Playing WAVE '/usr/share/sounds/alsa/Side_Right.wav' : Signed 16 bit Little Endian, Rate 48000 Hz, Mono
pi@raspberrypi:~ $
```

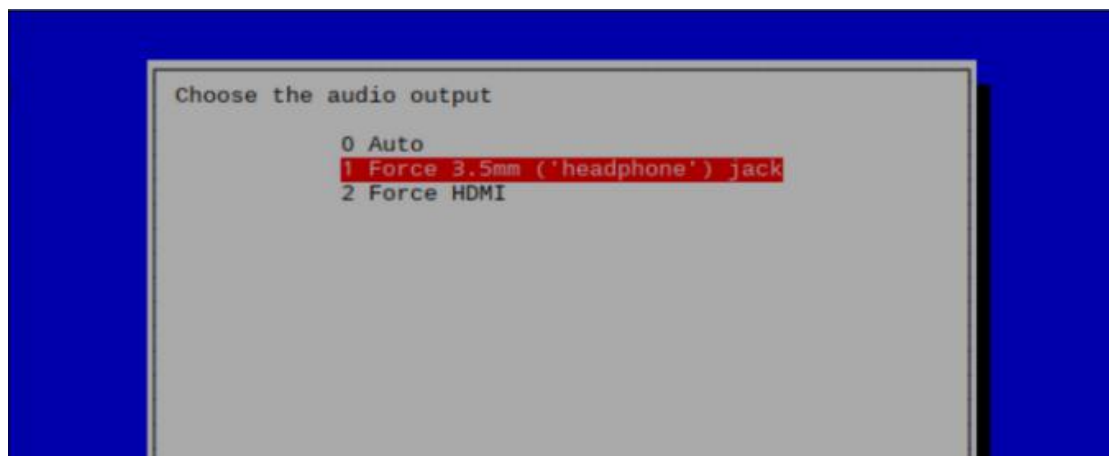
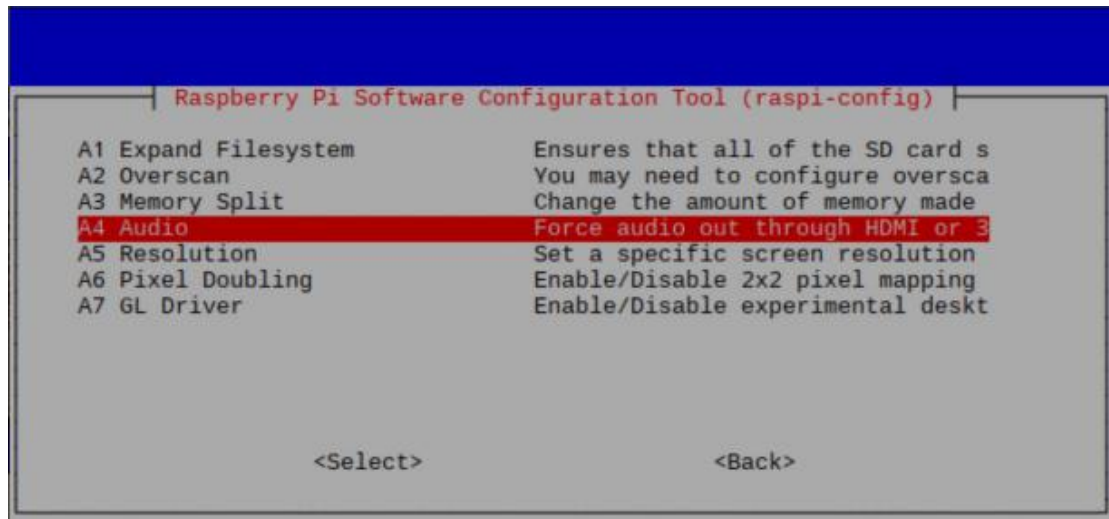
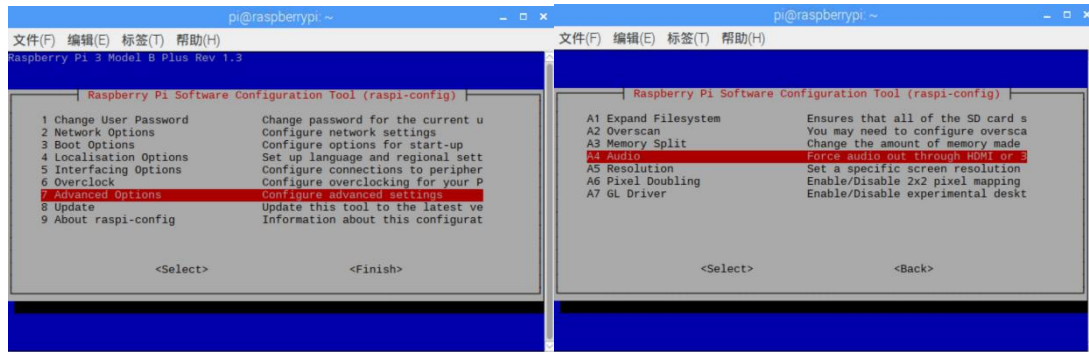
If it didn't make sound, we can view driver whether is be opened.

Input following command

```
sudo raspi-config
```

Choose [Advanced Options] --> [Audio] --> [1 Force 3.5mm (headphone) jack]





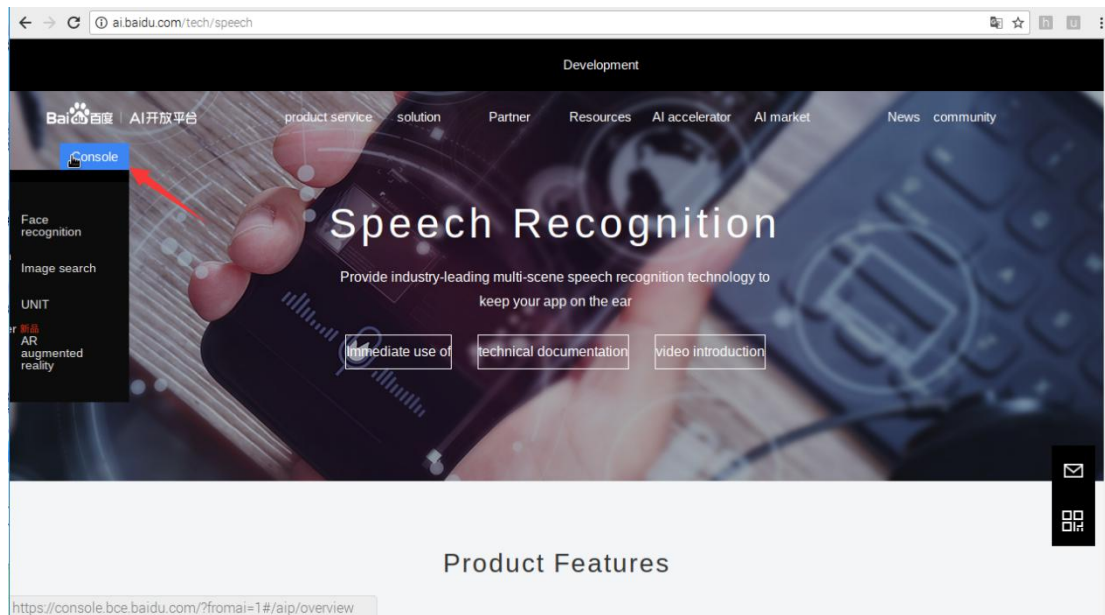
### Using Baidu API

First, you need to apply for your own Baidu AI developer account, install the SDK (Software Development Kit, Software Development Kit).

We should input this link on the browser of the Raspberry Pi:

<http://ai.baidu.com/tech/speech>, click **【Console】**. As shown figure1-6 below.

**!Note: The operations are done by opening the browser on the Raspberry Pi.**



Enter the login page, user who do not have a Baidu cloud account need to complete the registration. After completing the login, you may be fill out a form. As shown below.

Baidu Cloud Home 简体中文

**SMS Login**

Verify for login. It will create a Baidu account automatically if you haven't registered.

+86

[Read and accept Baidu User Protocol](#)

\* Contact:

Properties: ☐ 企业 ☒ 个人

\* Email:  [Modify](#)

\* Mobile:  [Modify](#)

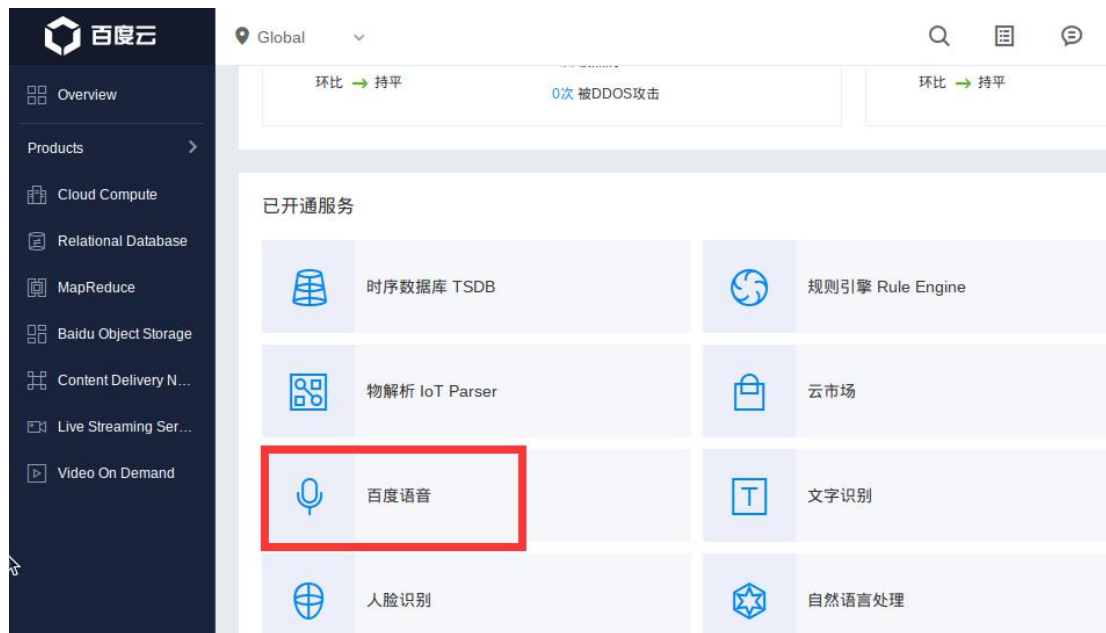
1st level category:

2nd level category: ☐ 社交网站 ☐ 论坛 ☐ 博客  
☐ 企业官网 ☐ 行业门户 ☐ 其他

\*服务协议: ☐ Agree [《百度云用户服务协议》](#) [《百度云服务协议》](#) [隐私政策](#)

您填写并提交上述信息视为您同意百度云及百度云授权的合作伙伴通过电话方式联系您完善信息、以便能够为您提供更贴心的云服务

After submitting, enter Baidu Cloud Product Overview, and find "Baidu Voice" and enter.

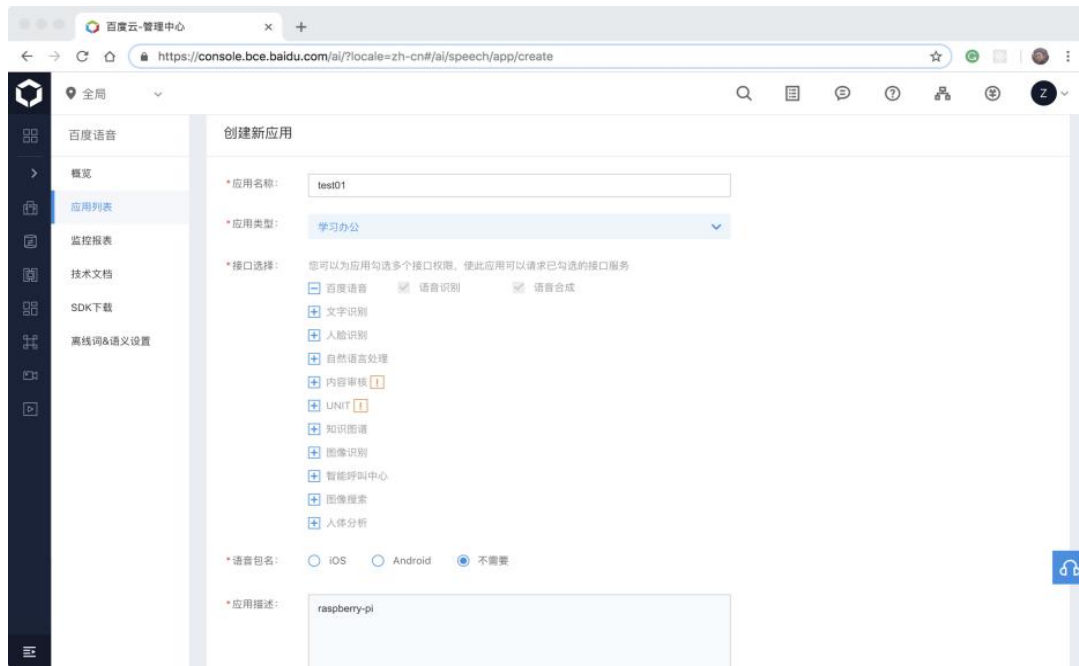


You can see that the current number of our application is 0, click "create application".



"create application"

We create an application, the type can be filled in "learning office". As shown figure below.

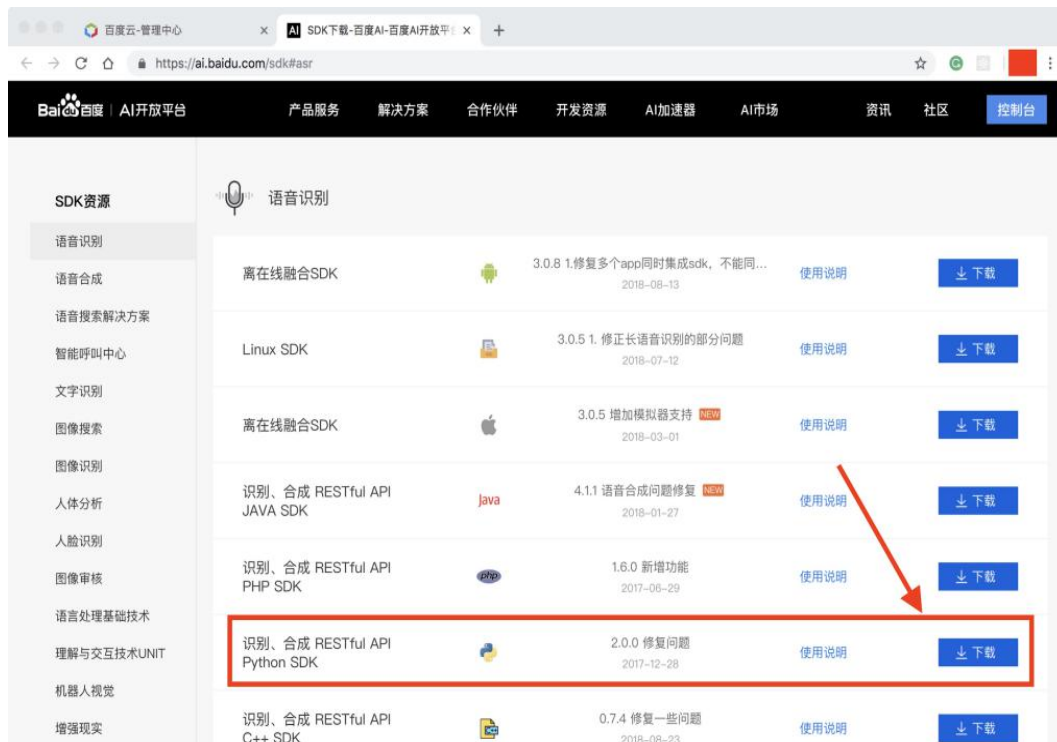


After the creation is completed, return to the previous "Baidu Voice" interface, you can see that the application has been generated, and at the same time generate an appId, and two key values, these will be used in later development. As shown figure below.

应用列表						
+ 创建应用						
应用名称	AppID	API Key	Secret Key	创建时间	操作	
1 test01	14845046	3nHYTeTyfRlaBEKzRBW 5XCwY	***** 显示	2018-11-17 14:29:48	报表 管理 删除	

Next, we need to download Baidu Voice's python-SDK. The browser goes to <https://ai.baidu.com/sdk#asr> or finds the "SDK Download" button on the page. Because the software development language of our suite is python, we need to found and downloaded python-SDK.

**!!!Note: The above operations are all done by opening the browser on the Raspberry Pi.**



We need to put this soft package into /home/pi, and input this command at the terminal:

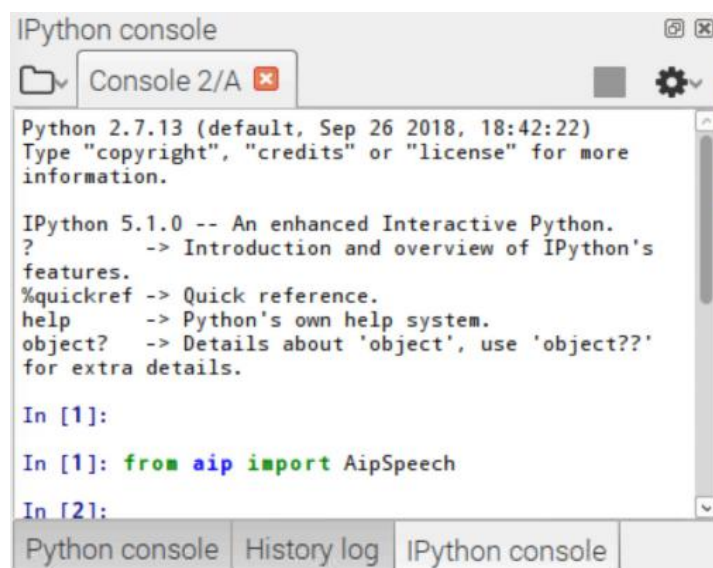
```
unzip aip-python-sdk-2.0.0.zip
```

The meaning of this command is: extract `aip-python-sdk-2.0.0.zip`, After the decompression is completed, a folder named "aip" is automatically generated in the current directory.

Next, we need to input this command at the terminal:

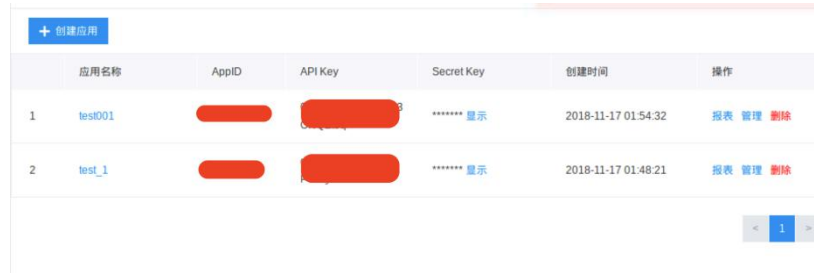
```
sudo pip install baidu-aip
```

Before experimenting we need to test, input `from aip import AipSpeech` in the spyder console, if there is no abnormality, the download is successful. As shown in the figure below. As shown figure below.





We will learn Baidu speech by a simple program of speech recognition and a speech synthesis. In other words, we need two sets of developer tools, so we should generate an application on the browser again.



<a href="#">+ 创建应用</a>						
	应用名称	AppID	API Key	Secret Key	创建时间	操作
1	test001			***** <a href="#">显示</a>	2018-11-17 01:54:32	<a href="#">报表</a> <a href="#">管理</a> <a href="#">删除</a>
2	test_1			***** <a href="#">显示</a>	2018-11-17 01:48:21	<a href="#">报表</a> <a href="#">管理</a> <a href="#">删除</a>
<div>&lt; 1 &gt;</div>						

In the next chapter, we will take advantage of the two applications.