

## Chapter10: Voice broadcast and speech recognition

1.The first is voice recognition. Through Baidu voice, the Raspberry Pi can identify the audio.

Here is a sample for testing: input URL:<http://bos.nj.bpc.baidu/v1/audio/8k.amr> in the browser of Raspberry Pi. It will download a sample, we need to copy the sample to the specified location, for example:

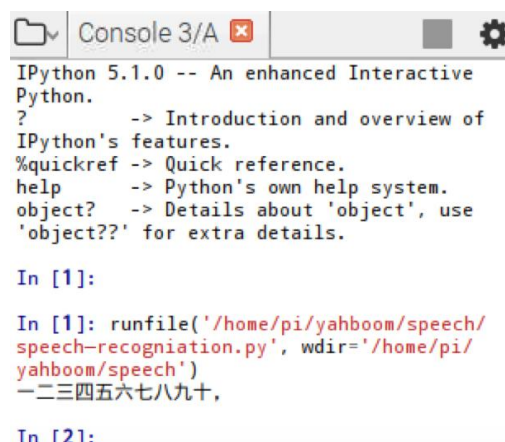
/home/pi/yahboom/speech/8k.amr

The project source code is located at:

**/home/pi/yahboom/speech/speech-recognition**, The code of the program is as follows:

```
1 #!/usr/bin/env python2
2 # -*- coding: utf-8 -*-
3 """
4     Created on Tue Nov  6 01:18:45 2018
5     * @par Copyright (C): 2010-2019, Shenzhen Yahboom Tech
6     * @file      speech recognition
7     * @version    V1.0
8     * @details
9     * @par History
10
11     @author: longfuSun
12 """
13 from aip import AipSpeech
14 #You need to fill in your AppID and Appkey
15 APP_ID='14842746'
16 API_KEY='0L7ur1I4FvsRo3GC3ONQEt5q'
17 SECRET_KEY='gd6SIdDGW6bHl0SpVG5wQ1ljZ5ymKwCm'
18 #Initialization
19 aipSpeech=AipSpeech(APP_ID,API_KEY,SECRET_KEY)
20 #Read file
21 def get_file_content(filePath):
22     with open(filePath,'rb') as fp:
23         return fp.read()
24 #Please refer to the technical documentation for the parameters. The format is amr a
25 result=aipSpeech.asr(get_file_content('/home/pi/yahboom/speech/8k.amr'),'amr',8000,{
26     'lan':'zh',
27 })
28 print(result['result'][0])
```

The result is as shown in the figure1-1 below.



```
Console 3/A
IPython 5.1.0 -- An enhanced Interactive
Python.
?          -> Introduction and overview of
IPython's features.
%quickref -> Quick reference.
help      -> Python's own help system.
object?   -> Details about 'object', use
'object??' for extra details.

In [1]:

In [1]: runfile('/home/pi/yahboom/speech/
speech-recognition.py', wdir='/home/pi/
yahboom/speech')
一二三四五六七八九十,

In [2]:
```

Figure1-1

PS: The program may run incorrectly because the Raspberry Pi does not support Chinese output by default. Please check the information to start the Chinese character environment.

2.The second is speech synthesis. The project source code is located at:

**</home/pi/yahboom/speech/speech-compound>**

The code of the program is as follows:

```

1  #!/usr/bin/env python2
2  # -*- coding: utf-8 -*-
3  """
4      Created on Tue Nov  6 01:18:45 2018
5      * @par Copyright (C): 2010-2019, Shenzhen Yahboom Tech
6      * @file      speech compound
7      * @version    V1.0
8      * @details
9      * @par History
10
11      @author: longfuSun
12  """
13  from aip import AipSpeech
14  import pygame
15  from time import time
16  #You need to input your APPid and APPkey
17  APP_ID='14842692'
18  API_KEY='d06L3VtQCXr0qyL9PWGySGf0'
19  SECRET_KEY='ScxR7ObkPQ1blfGzZGDGkBe5oobf0lDc'
20
21  aipSpeech=AipSpeech(APP_ID,API_KEY,SECRET_KEY)
22
23  t=time()
24  result = aipSpeech.synthesis(text = 'Yahboom technology apply speech API to process spee
25                                     options={'spd':5,'vol':9,'per':1,})
26  #Wirte synthesized speech to a file
27  if not isinstance(result,dict):
28      with open('audio.mp3','wb') as f:
29          f.write(result)
30
31  else:print(result)
32  #We use pygame of Raspberry Pi
33  pygame.mixer.init()
34  pygame.mixer.music.load('/home/pi/yahboom/speech/audio.mp3')
35  pygame.mixer.music.play()
36  t2=time()
37  print(t2-t)

```