

Operating System

Course Project

Title-Voice Assistant for Linux

Team members: Harsh Jaiswal (B20ES005)
Raman Deep (B20CS051)
Ronith Kumar (B20CS057)
Samarth Rambabu Sala (B20CS058)

First we have to install following library:

1. *sudo pip install SpeechRecognition*
2. *sudo apt-get install python-pyaudio python3-pyaudio*
3. *sudo apt-get install portaudio19-dev python-all-dev python3-all-dev &&
sudo pip install pyaudio*
4. *pip install pyaudio*
5. *Weather Prediction:*
 - a. *sudo apt-get install curl*
6. *Play music. :*
 - a. *sudo apt-get install sox,*
 - b. *sudo apt-get install sox libsox-fmt-all,*

After successfully installing the above library

How to run code:

--> By running the below command in the directory
`python3 project3.py`

```
harsh@Harsh:~/OS_Project$ python3 project3.py
```

The below part will be shown after executing the above command:

```
Good Afternoon Sir !
I am your Assistant: DoDo

-----below instructions can be performed by me-----
--> open file in current directory
--> see current directory
--> make directory
--> remove directory
--> create file
--> delete file
--> Arithmetic Operation
--> Show Calendar
--> Today's date
--> Search any topic on wikipedia
--> Can show weather default(Current City)
--> Can show weather of any city using location name
--> Can show weather of any city using pincode of locaton
--> Can play music
--> Can open any site

-----
How can I Help you, Sir
Speak please!
```

After executing the command, the pydub library will convert heard voice by the microphone to .wav format and then the google API will convert it to text and the voice recognition will run in a loop and won;t stop until the ctrl+c is pressed.

We can choose to run any task provided in the above part:

1. Open File:

This command will show all the files in the given directory:

```
Speak please!
Recognizing...
Speech to text: open file
1
1.py
file
'HAK - Hamari Adhuri Kahani.mp3'
'HAK - Humnava.mp3'
'Harry Styles - Watermelon Sugar.mp3'
'Heartless Main_Dhoondne_Ko_Zamaane_Mein_Full_Song_Arijit_Singh_Adhyayan.mp3'
'Imagine Dragons x JID - Enemy.mp3'
'Jamie Miller - Here s Your Perfect (Official Music Video).mp3'
Speak please!
'Jannat 2 2012 - Sang Hoon Tere.mp3'
'Jannat 2 2012 - Tera Deedar Hua.mp3'
'Jannat 2 2012 - Tu Hi Mera.mp3'
'J. Cole - Middle Child.mp3'
jgj.c
project2.py
project3.py
project.py
```

2. See current Directory:

This command will show the address of the current directory:

```
Speak please!
Recognizing...
Speech to text: show current directory
/home/harsh/OS_Project
Speak please!
```

3. Make Directory: This command will create a directory:

```
Speak please!
Recognizing...
Speech to text: create directory horse
Speak please!
Recognizing...
Speech to text: open files
1
1.py
file
'HAK - Hamari Adhuri Kahani.mp3'
'HAK - Humnava.mp3'
'Harry Styles - Watermelon Sugar.mp3'
'Heartless_Main_Dhoondne_Ko_Zamaane_Mein_Full_Song_Arijit_Singh_Adhyayan.mp3'
horse
'Imagine Dragons x JID - Enemy.mp3'
Speak please!
```

'Jamie Miller - Here s Your Perfect (Official Music Video).mp3'
'Jannat 2 2012 - Sang Hoon Tere.mp3'
'Jannat 2 2012 - Tera Deedar Hua.mp3'
'Jannat 2 2012 - Tu Hi Mera.mp3'
'J. Cole - Middle Child.mp3'
jgj.c
project2.py
project3.py
project.py

We can see that the horse directory is created.

4. Remove Directory:

This directory will delete the given directory:

```
Speak please!
Recognizing...
Speech to text: remove directory horse
Speak please!
Recognizing...
Speech to text: open files
1
1.py
file
'HAK - Hamari Adhuri Kahani.mp3'
'HAK - Humnava.mp3'
'Harry Styles - Watermelon Sugar.mp3'
'Heartless_Main_Dhoondne_Ko_Zamaane_Mein_Full_Song_Arijit_Singh_Adhyayan.mp3'
'Imagine Dragons x JID - Enemy.mp3'
'Jamie Miller - Here s Your Perfect (Official Music Video).mp3'
Speak please!
```

'Jannat 2 2012 - Sang Hoon Tere.mp3'
'Jannat 2 2012 - Tera Deedar Hua.mp3'
'Jannat 2 2012 - Tu Hi Mera.mp3'
'J. Cole - Middle Child.mp3'
jgj.c
project2.py
project3.py
project.py

We can see that the directory horse has been deleted.

5. Create File: By executing this command we can create a file the same as how we have created a directory.

6. Delete File: By executing this command, we can delete the given file the same as how we have deleted the directory.

7. Arithmetic Operation through simple functions:

By using add, subtract, multiply, and divide, we can get the result between any two numbers:

```
How can I Help you, Sir
Speak please!
Recognizing...
Speech to text:  add 364 and 465
829
Speak please!
Recognizing...
Speech to text:  subtract 9 from 14
5
Speak please!
Recognizing...
Speech to text:  multiply 2 and 7
14
Speak please!
Recognizing...
Speech to text:  divide 4 by 2
2.0
Speak please!
Recognizing...
Speech to text:  divide 4 by 8
0.5
Speak please!
```

8. Arithmetic operations through complex functions:

By using calculate, we can get result of any arithmetic function:

```
Speak please!
Recognizing...
Speech to text:  calculate 2 + 3 - 1
The answer is 4
Speak please!
Recognizing...
Speech to text:  calculate 2 + 3 x 4 / 2
The answer is 8
Speak please!
Recognizing...
Speech to text:  calculate 2 + 4 - 6
The answer is 0
Speak please!
```

9. Show Calendar:

This command will show calendar of the particular month:

```
Speak please!  
Recognizing...  
Speech to text: show calendar  
November 2022  
Su Mo Tu We Th Fr Sa  
      1  2  3  4  5  
 6  7  8  9 10 11 12  
13 14 15 16 17 18 19  
20 21 22 23 24 25 26  
27 28 29 30  
  
Speak please!
```

10. Today's Date:

This command will show show date and time:

```
Speak please!  
Recognizing...  
Speech to text: today's date  
Monday 28 November 2022 04:05:16 PM IST  
Speak please!
```

11. Search any topic on wikipedia:


By using this command, we can search anything on wikipedia:





```
Speak please!  
Recognizing...  
Speech to text: iit jodhpur on wikipedia  
Searching Wikipedia...  
According to Wikipedia:  
Indian Institute of Technology Jodhpur (IIT Jodhpur or IITJ) is a public technical university located in Jodhpur in the state of Rajasthan in India. It is one of the eight new Indian Institutes of Technology (IITs) established by the Ministry of Human Resource Development, Government of India under The Institutes of Technology (Amendment) Act, 2011 which declares these eight IITs as well as the conversion of the Institute of Technology, Banaras Hindu University to IIT. The Act was passed in the Lok Sabha on 24 March 2011 and by the Rajya Sabha on 30 April 2012.  
  
== History ==  
IIT Jodhpur was first announced by the Central Government in July 2007, although the formal announcement was made in 2008, with IIT Kanpur mentoring IIT Jodhpur.
```

12. Can show weather of current city:





By using this command, we can know the weather of the current location:

Speak please!
Recognizing...
Speech to text: show weather
Weather report: jodhpur





 Sunny
+31(29) °C
↓ 6 km/h
10 km
0.0 mm

Mon 28 Nov			
Morning	Noon	Evening	Night
 Sunny +23(22) °C ← 6-8 km/h 10 km 0.0 mm 0%	 Sunny +31(28) °C ✓ 3-4 km/h 10 km 0.0 mm 0%	 Clear 23 °C ↓ 7-15 km/h 10 km 0.0 mm 0%	 Clear 22 °C ↓ 12-24 km/h 10 km 0.0 mm 0%

Tue 29 Nov

Morning	Noon	Evening	Night
 Sunny 22 °C ✓ 14-18 km/h 10 km 0.0 mm 0%	 Sunny +31(28) °C ✓ 11-13 km/h 10 km 0.0 mm 0%	 Clear +26(25) °C ↓ 13-21 km/h 10 km 0.0 mm 0%	 Clear 21 °C ↓ 16-34 km/h 10 km 0.0 mm 0%

Wed 30 Nov

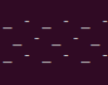
Morning	Noon	Evening	Night
 Sunny 22 °C ✓ 15-19 km/h 10 km 0.0 mm 0%	 Sunny +31(29) °C ✓ 13-14 km/h 10 km 0.0 mm 0%	 Clear +26(25) °C ✓ 13-21 km/h 10 km 0.0 mm 0%	 Clear 21 °C ✓ 15-32 km/h 10 km 0.0 mm 0%





Location: Jodhpur, Rajasthan, India [26.2988908,73.0333642]
Follow [@lgqr_chubtn](#) for wttr.in updates
Speak please!

13. Can show weather of any city using location name:





By using this command, we can know the weather of the any location via location name:

Speak please!
Recognizing...
Speech to text: show weather of kolkata
Weather report: kolkata





 Haze
+29(28) °C
↓ 9 km/h
4 km
0.0 mm

Mon 28 Nov			
Morning	Noon	Evening	Night
 Sunny +25(26) °C ↓ 10-12 km/h 10 km 0.0 mm 0%	 Sunny 31 °C ↓ 11-13 km/h 10 km 0.0 mm 0%	 Clear 26 °C ↓ 9-14 km/h 10 km 0.0 mm 0%	 Clear 21 °C ↓ 9-20 km/h 10 km 0.0 mm 0%

Tue 29 Nov

Morning	Noon	Evening	Night
 Sunny 26 °C ↓ 12-14 km/h 10 km 0.0 mm 0%	 Sunny +32(31) °C ↓ 12-14 km/h 10 km 0.0 mm 0%	 Clear 26 °C ↓ 10-16 km/h 10 km 0.0 mm 0%	 Clear 22 °C ↓ 9-20 km/h 10 km 0.0 mm 0%

Wed 30 Nov

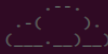
Morning	Noon	Evening	Night
 Sunny 26 °C ↓ 13-15 km/h 10 km 0.0 mm 0%	 Sunny +33(32) °C ↓ 13-15 km/h 10 km 0.0 mm 0%	 Clear +26(27) °C ↓ 10-15 km/h 10 km 0.0 mm 0%	 Clear +22(24) °C ↓ 9-19 km/h 10 km 0.0 mm 0%

Location: Kolkata, Hāora, West Bengal, India [22.5677459,88.3476023]
Follow [@lgqr_chubtn](#) for wttr.in updates
Speak please!



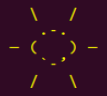

14. Can show weather of any city through Pin code:





By using this command, we can know the weather of the any location via Pin Code:





```
Speak please!
Recognizing...
Speech to text: so weather of 110001
Weather report: 110001
```



Smoke
+25(24) °C
↘ 6 km/h
2 km
0.0 mm

Mon 28 Nov			
Morning	Noon	Evening	Night
 <p>Sunny 21 °C ↖ 2 km/h 10 km 0.0 mm 0%</p>	 <p>Sunny +28(26) °C ↖ 2-3 km/h 10 km 0.0 mm 0%</p>	 <p>Clear +26(25) °C ↗ 3-4 km/h 10 km 0.0 mm 0%</p>	 <p>Clear 21 °C ↓ 3-6 km/h 10 km 0.0 mm 0%</p>

Tue 29 Nov			
Morning	Noon	Evening	Night
 <p>Sunny 21 °C ↘ 3-4 km/h 10 km 0.0 mm 0%</p>	 <p>Sunny +26(24) °C → 3 km/h 10 km 0.0 mm 0%</p>	 <p>Partly cloudy 24 °C ↘ 4-6 km/h 10 km 0.0 mm 0%</p>	 <p>Clear 22 °C → 4-7 km/h 10 km 0.0 mm 0%</p>

Wed 30 Nov			
Morning	Noon	Evening	Night
 <p>Sunny 21 °C ↘ 5-6 km/h 10 km 0.0 mm 0%</p>	 <p>Sunny +28(26) °C → 3-4 km/h 10 km 0.0 mm 0%</p>	 <p>Clear +26(25) °C ↘ 4-5 km/h 10 km 0.0 mm 0%</p>	 <p>Clear 22 °C → 5-9 km/h 10 km 0.0 mm 0%</p>

Location: Chanakya Puri Tehsil, New Delhi, Delhi, 110001, India [28.628019405333333,77.21809954866667]

Follow [@lgor_chubin](#) for wttr.in updates

Speak please!

15. Can Play Music:

By using this command, we can play any music provided in the current directory:

```
Speak please!
Recognizing...
Speech to text: play music
Here you go with music
['Jannat 2 2012 - Sang Hoon Tere.mp3', 'HAK - Hamari Adhuri Kahani.mp3', 'Harry Styles - Watermelon Sugar.mp3', 'Imagine Dragons x JID - Enemy .mp3', 'Jamie Miller - Here s Your Perfect (Official Music Video).mp3', 'J. Cole - Middle Child.mp3', 'Jannat 2 2012 - Tera Deedar Hua.mp3', 'Heartless_Main_Dhoondne_Ko_Zamaane_Mein_Full_Song_Arijit_Singh_Adhyayan.mp3', 'Jannat 2 2012 - Tu Hi Mera.mp3', 'HAK - Humnava.mp3']

HAK - Hamari Adhuri Kahani.mp3:

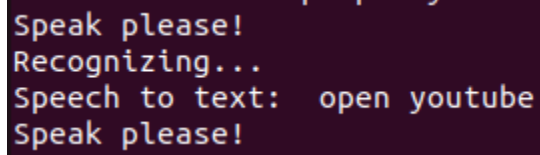
File Size: 6.45M      Bit Rate: 129k
Encoding: MPEG audio  Info: 2015
Channels: 2 @ 16-bit  Track: 1/6
Samplerate: 44100Hz   Album: Hamari Adhuri Kahani (2015)
Replaygain: off       Artist: Arijit Singh
Duration: 00:06:38.98 Title: Hamari Adhuri Kahani - JioSongs.com

In:3.31% 00:00:13.19 [00:06:25.79] Out:582k [  =|·  ]      Clip:0
Skipped (Ctrl-C twice to quit).
```

By using ctrl+c, we can play the next song and by using ctrl+c+c, we can abort the music play.

16. Can open any site:

By using this command, we can open any site via open [site name]:

A terminal window with a dark background and light-colored text. The text shows a sequence of voice commands and system responses: 'Speak please!', 'Recognizing...', 'Speech to text: open youtube', and 'Speak please!'.

```
Speak please!  
Recognizing...  
Speech to text: open youtube  
Speak please!
```

After executing this command, the site gets open in the default browser.