Task for smart methods coop
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Esp32 algorithm

1- download and open Arduino IDE
2- Copy this URL: https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package_esp32_index.json and paste it in File> Preferences> Settings on "Additional Boards Manager URL's " , and click OK
3-click board tool>borad manger
4- on search bae write ESP32 and then install
5- After successful installation connect the ESP32 to the computer via the USB.
6- write code to test

```
  void setup(){
       pinMode(15,OUTPUT); //20pin
   }
   Void loop(){
    digitalWrite(15,HIGH);
    delay(250);

     digitalWrite(15,LOW);
    delay(250);

   }
```

7-save code then run if appears uploading done the connecting successful

Source : https://www.youtube.com/watch?v=67q_ndmSGig

Speech Recognition Python – Converting Speech to Text

1- nstalling SpeechRecognition

- Go to terminal and type

```
pip3 install SpeechRecognition
```

2- Installing PyAudio

- Go to terminal and type

```
Pip3 install pyaudio
```

3-

```
import speech_recognition as sr     # import the library
r = sr.Recognizer()                 # initialize recognizer
with sr.Microphone() as source:     # mention source it will be either
Microphone or audio files
print("Speak Anything :")
audio = r.listen(source)        # listen to the source
try:
 text = r.recognize_google(audio)    # use recognizer to convert our audio
into text part.
 print("You said : {}".format(text))
 except:
 print("Sorry could not recognize your voice")    # In case of voice not
recognized clearly
```

Source : https://www.simplifiedpython.net/speech-recognition-python/

Explanation of code

So now we will start understanding the code line-by-line.

- first of all we will import **speech_recognition** as sr.
- Notice that we have speech_recognition in such format whereas earlier we have installed it in this way SpeechRecognition , so you need to have a look around the cases because this is case sensitive.
- Now we have used **as** notation because writing **speech_recognition** whole every time is not a good way.
- Now we have to initialize **r = sr.Recognizer() ,**this will work as a recognizer to recognize our voice.
- So, **with sr.Microphone() as source:** which means that we are initialising our source to sr.Microphone ,we can also use some audio files to convert into text but in this tutorial i am using Microphone voice.
- Next we will print a simple statement that recommend the user to speak anything.
- Now we have to use **r.listen(source)** command and we have to listen the source.So, it will listen to the source and store it in the audio.
- It may happen some time the audio is not clear and you might not get it correctly ,so we can put it inside the **try** and **except** block .
- So inside the try block, our text will be **text = r.recognize_google(audio) ,**now we have various options
- like recognize_bing(),recognize_google_cloud(),recognize_ibm(), etc.But for this one i am using recognize_google().And lastly we have to pass our audio.
- And this will convert our audio into text.
- Now we just have to print **print("You said : {}".format(text))** ,this will print whatever you have said.
- In the except block we can just write **print("Sorry could not recognize your voice") ,**this will message you if your voice is not recorded clearly.