

## Program coding:

### 1. Input Data

```
import speech_recognition as sr
import pyttsx3
from googletrans import Translator

# Initialize text-to-speech engine
engine = pyttsx3.init()

def speak(text):
    engine.say(text)
    engine.runAndWait()

# Initialize translator
translator = Translator()

# Recognize speech
def listen():
    r = sr.Recognizer()
    with sr.Microphone() as source:
        print("Speak something...")
        r.adjust_for_ambient_noise(source)
        audio = r.listen(source)
    try:
        text = r.recognize_google(audio)
        print("You said:", text)
        return text
    except:
        print("Sorry, I didn't catch that.")
        return ""

# Main function
def main():
    speak("Please speak something to translate")
    original_text = listen()
    if original_text:
        translated = translator.translate(original_text, dest='ta') # Change 'ta' to any
        language code
        print("Translated:", translated.text)
        speak("The translation is: " + translated.text)

main()
```

## Output:

The screenshot shows a Visual Studio Code (VS Code) editor window with a dark theme. The editor is running a Python script named `speech_translation.py`. The script is located in a directory named `VCA`. The script's content is as follows:

```
16 def listen():
17     r = sr.Recognizer()
18     with sr.Microphone() as source:
19         print("Speak something...")
20         r.adjust_for_ambient_noise(source)
21         audio = r.listen(source)
22     try:
23         text = r.recognize_google(audio)
24         print("You said:", text)
25         return text
26     except:
27         print("Sorry, I didn't catch that.")
28         return ""
29
30 # Main function
```

The left sidebar of VS Code shows the **RUN AND DEBUG** panel. It contains a **RUN** section with a **Run and Debug** button and a message: "To customize Run and Debug create a launch.json file." Below this is a **SHOW AUTOMATIC PYTHON CONFIGURATIONS** button. The **BREAKPOINTS** section is also visible, showing options for **Raised Exceptions**, **Uncaught Exceptions** (checked), and **User Uncaught Exceptions**.

The bottom panel of VS Code is the **TERMINAL**, which shows the command prompt output. The terminal is running a PowerShell command to execute the script:

```
PS D:\VCA> ^C
PS D:\VCA>
PS D:\VCA> d:; cd 'd:\VCA'; & 'c:\Users\ajust\AppData\Local\Programs\Python\Python312\python.exe' 'c:\Users\ajust\.vscode\extensions\ms-python.debugpy-2025.8.0-win32-x64\bundle\lib\debugpy\launcher' '57094' '--' 'D:\VCA\speech_translation.py'
```

The output of the script is displayed in the terminal:

```
Speak something...
You said: what is your name
Translated: ?
```

The status bar at the bottom of the VS Code window shows the current file is `speech_translation.py`, line 39, column 7. The encoding is `UTF-8`, the line ending is `CRLF`, and the file is a `Python` file. The system tray at the bottom shows the date and time as `14-05-2025 20:45`.