

LAPORAN
Kecerdasan Buatan



Laporan Praktikum Speech Recognition

Ketua/Anggota Tim

Nama

NIM: 19340013

PROGRAM STUDI INFORMATIKA
FAKULTAS TEKNIK
UNIVERSITAS KATOLIK DARMA CENDIKA
NOVEMBER 2021

Disini saya menggunakan IDE PyCarm

Pertama install Speech Recognition

```
Terminal: Local x + v
PS C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition> pip install SpeechRecognition
Collecting SpeechRecognition
  Using cached SpeechRecognition-3.8.1-py2.py3-none-any.whl (32.8 MB)
Installing collected packages: SpeechRecognition
Successfully installed SpeechRecognition-3.8.1
WARNING: You are using pip version 21.1.2; however, version 21.3.1 is available.
You should consider upgrading via the 'C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition\python.exe -m pip install --upgrade pip' command.
PS C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition> 
```

Kita cek versi dari speech recognition

```
main.py x README.md x
1 import speech_recognition as sr
2 var = sr.__version__
3 print(var)
4
```

```
Run: main x
" C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition\main.py
3.8.1
Process finished with exit code 0
```

Kita buat Recognizer disini kita bisa ngambil dari recognize yang sudah terkenal

```
4
5 r = sr.Recognizer()
6
7 r.recognize_google()
8
```

menggunakan Audio Files

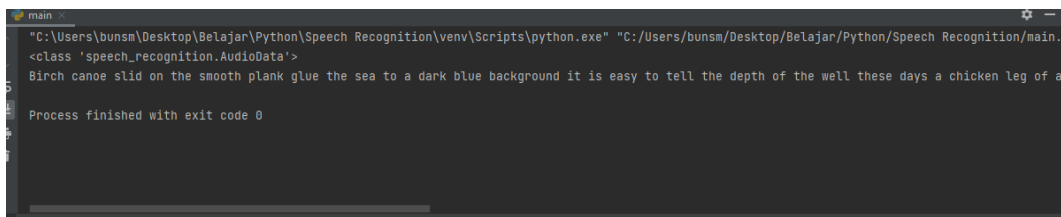
```

harvard = sr.AudioFile('audio/0SR_us_000_0010_8k.wav')
with harvard as source:
    audio = r.record(source)

print(type(audio))

print(r.recognize_google(audio))

```



```

main x
"C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition\venv\Scripts\python.exe" "C:/Users/bunsm/Desktop/Belajar/Python/Speech Recognition/main.
<class 'speech_recognition.AudioData'>
Birch canoe slid on the smooth plank glue the sea to a dark blue background it is easy to tell the depth of the well these days a chicken leg of a
Process finished with exit code 0

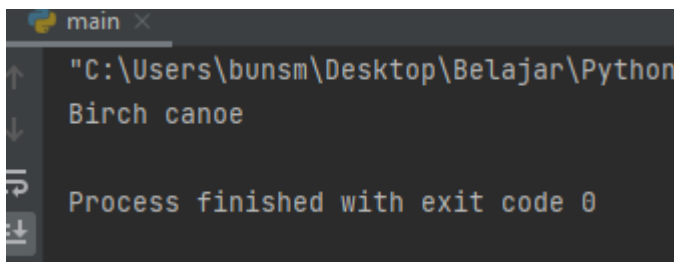
```

Membuat duration

```

16     with harvard as source:
17         audio = r.record(source, duration=2)
18     print(r.recognize_google(audio))
19
20

```



```

main x
"C:\Users\bunsm\Desktop\Belajar\Python
Birch canoe
Process finished with exit code 0

```

dua kali duration

```

with harvard as source:
    audio1 = r.record(source, duration=4)
    audio2 = r.record(source, duration=4)

print(r.recognize_google(audio1))

print(r.recognize_google(audio2))

```

```
main x
"C:\Users\bunsm\Desktop\Belajar\Python\Speech
the Birch canoe slid on the smooth planks
Odyssey to dark blue background

Process finished with exit code 0
```

Duration dan Offset

```
with harvard as source:
    audio = r.record(source, offset=4, duration=3)

print(r.recognize_google(audio))

main x
"C:\Users\bunsm\Desktop\Belajar\Python\Speech Reco
Odyssey to the dog food.

Process finished with exit code 0
```

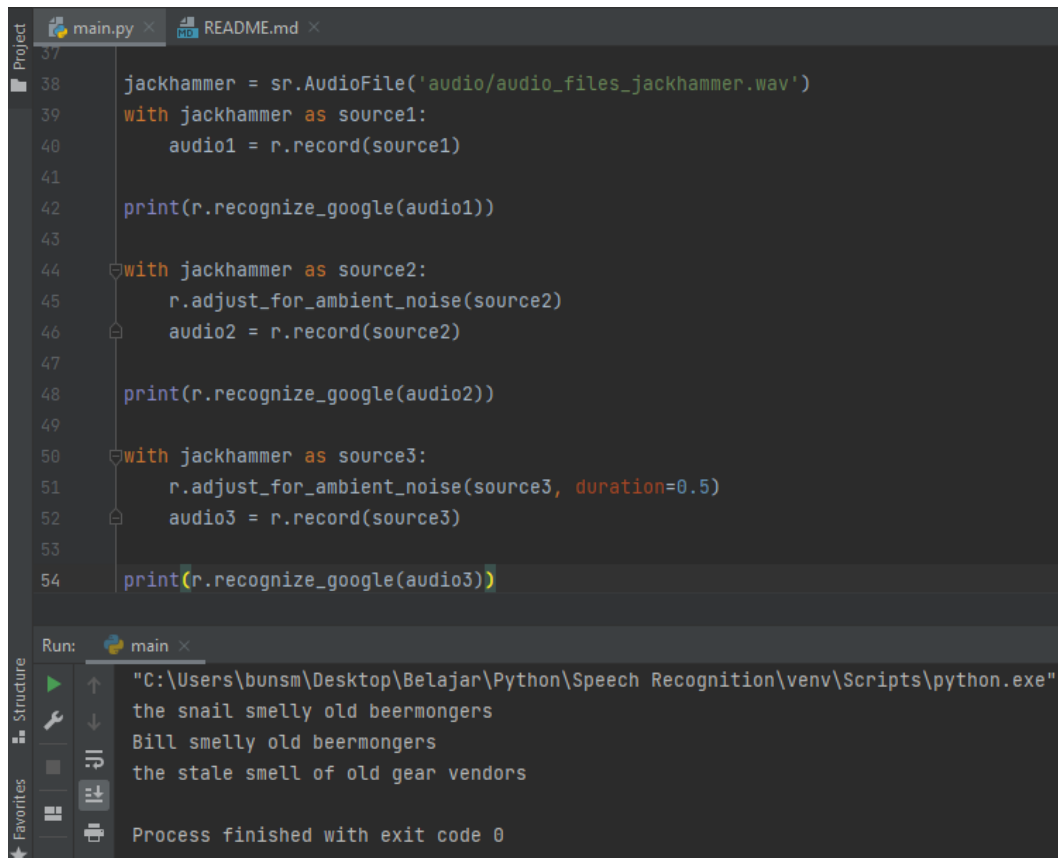
```
with harvard as source:
    audio = r.record(source, offset=4.7, duration=2.8)

print(r.recognize_google(audio))

main x
"C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognitio
C2 dark blue backgrounds

Process finished with exit code 0
```

The Effect of Noise on Speech Recognition



```
37
38 jackhammer = sr.AudioFile('audio/audio_files_jackhammer.wav')
39 with jackhammer as source1:
40     audio1 = r.record(source1)
41
42     print(r.recognize_google(audio1))
43
44     with jackhammer as source2:
45         r.adjust_for_ambient_noise(source2)
46         audio2 = r.record(source2)
47
48         print(r.recognize_google(audio2))
49
50     with jackhammer as source3:
51         r.adjust_for_ambient_noise(source3, duration=0.5)
52         audio3 = r.record(source3)
53
54     print(r.recognize_google(audio3))
```

Run: main

```
"C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition\venv\Scripts\python.exe"
the snail smelly old beermongers
Bill smelly old beermongers
the stale smell of old gear vendors
Process finished with exit code 0
```



```
with jackhammer as source4:
    r.adjust_for_ambient_noise(source4, duration=0.5)
    audio4 = r.record(source4)
    print(r.recognize_google(audio4, show_all=True))
```

main

```
"C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition\venv\Scripts\python.exe" "C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition\main.py"
{'alternative': [{'transcript': 'the stale smell of old gear vendors'}, {'transcript': 'the snail smelly old gear vendors'}, {'transcript': 'the snail smelly old gear vendors'}]}
Process finished with exit code 0
```

Working With Microphones

Install pyaudio

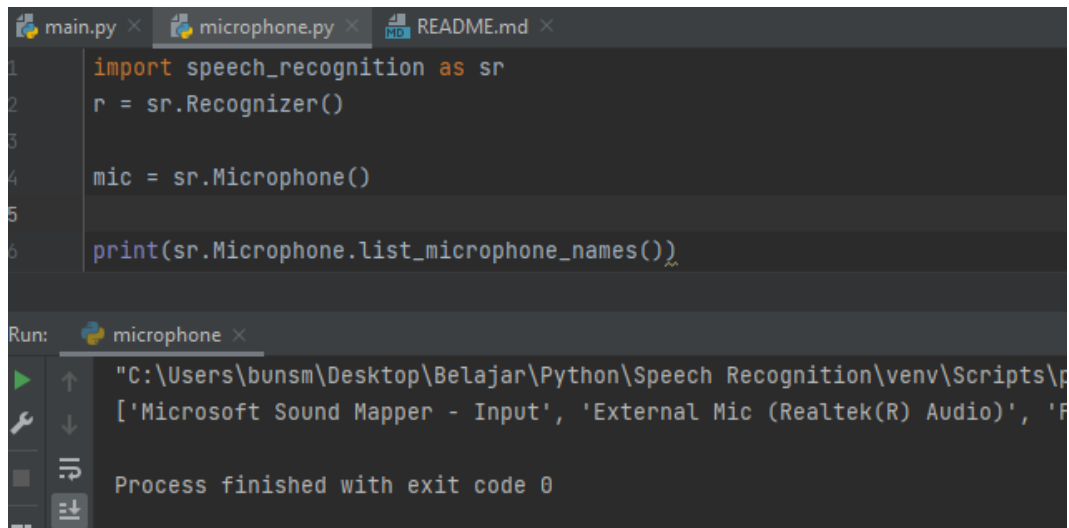
```
PS C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition> pip install pyaudio
```

Saya menggunakan pip error jadi saya menggunakan pipwin

```
PS C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition> pip install pipwin
```

```
PS C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition> pipwin install pyaudio
```

Microphone



The screenshot shows a code editor with three tabs: `main.py`, `microphone.py`, and `README.md`. The `microphone.py` tab is active and contains the following Python code:

```
1 import speech_recognition as sr
2 r = sr.Recognizer()
3
4 mic = sr.Microphone()
5
6 print(sr.Microphone.list_microphone_names())
```

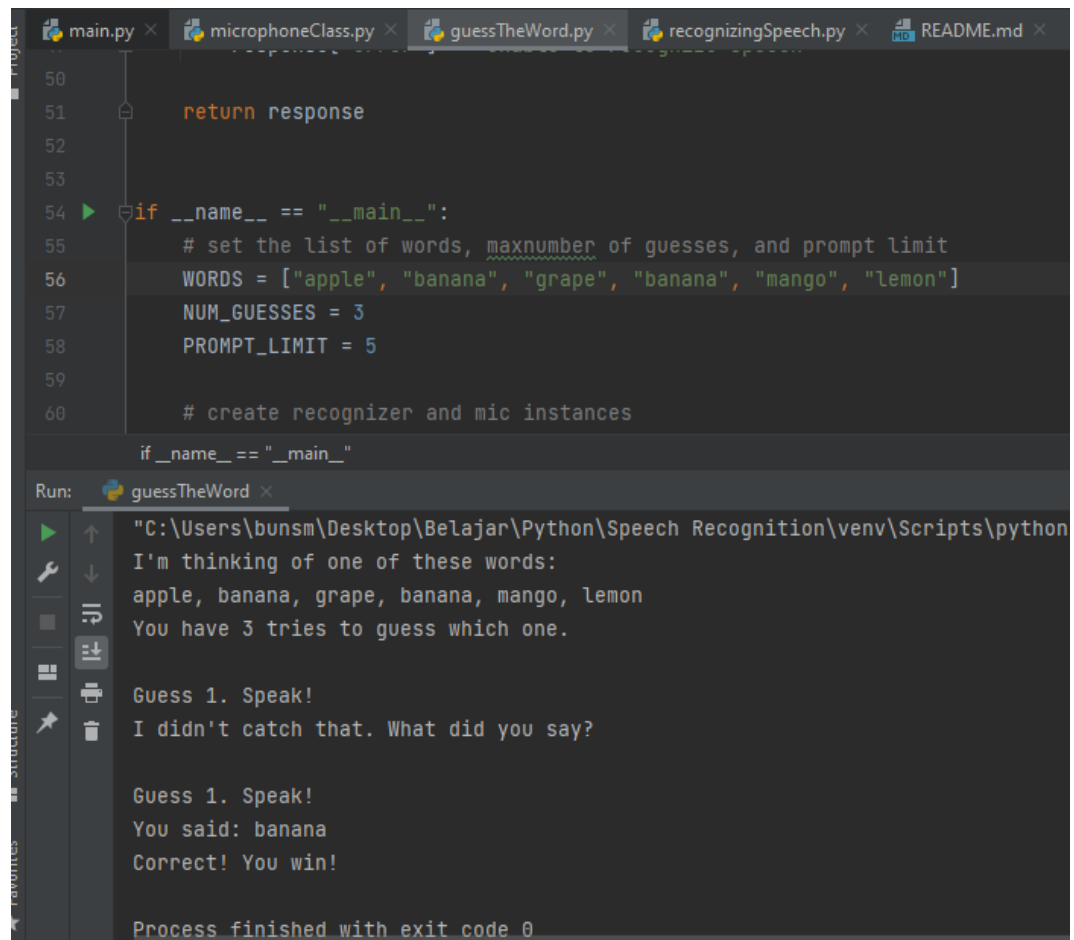
Below the code editor is a 'Run' console window titled 'microphone'. It shows the execution path and the output of the `list_microphone_names()` function:

```
"C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition\venv\Scripts\python.exe"
['Microsoft Sound Mapper - Input', 'External Mic (Realtek(R) Audio)', 'P']
Process finished with exit code 0
```

Using listen() to Capture Microphone Input

Handling Unrecognizable Speech

Putting It All Together: A “Guess the Word” Game



The screenshot shows a Python IDE with several tabs: `main.py`, `microphoneClass.py`, `guessTheWord.py` (active), `recognizingSpeech.py`, and `README.md`. The `guessTheWord.py` file contains the following code:

```
50
51     return response
52
53
54 if __name__ == "__main__":
55     # set the list of words, maxnumber of guesses, and prompt limit
56     WORDS = ["apple", "banana", "grape", "banana", "mango", "lemon"]
57     NUM_GUESSES = 3
58     PROMPT_LIMIT = 5
59
60     # create recognizer and mic instances

if __name__ == "__main__"
```

The Run console shows the output of the program:

```
Run: guessTheWord x
"C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition\venv\Scripts\python
I'm thinking of one of these words:
apple, banana, grape, banana, mango, lemon
You have 3 tries to guess which one.

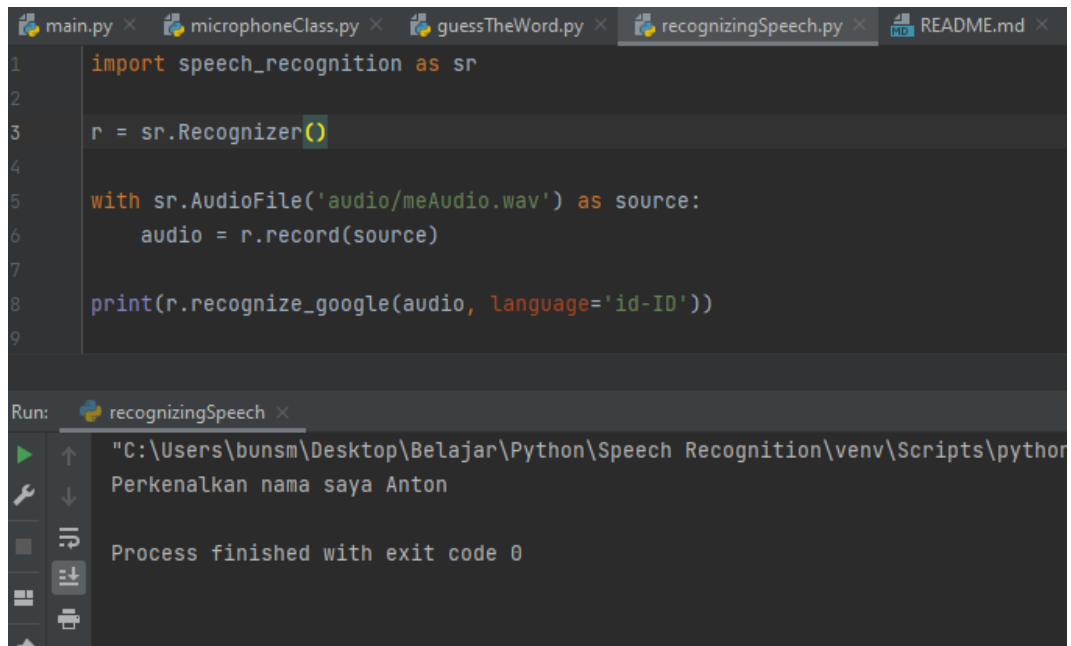
Guess 1. Speak!
I didn't catch that. What did you say?

Guess 1. Speak!
You said: banana
Correct! You win!

Process finished with exit code 0
```

Appendix: Recognizing Speech in Languages Other Than English

Disini saya merekam suara saya dengan format wav dan mengubah ke bahasa indonesia



The screenshot shows a Python IDE with several tabs: main.py, microphoneClass.py, guessTheWord.py, recognizingSpeech.py, and README.md. The active tab is recognizingSpeech.py, which contains the following code:

```
1 import speech_recognition as sr
2
3 r = sr.Recognizer()
4
5 with sr.AudioFile('audio/meAudio.wav') as source:
6     audio = r.record(source)
7
8 print(r.recognize_google(audio, language='id-ID'))
9
```

Below the code editor, the 'Run' panel shows the output of the program:

```
Run: recognizingSpeech x
"C:\Users\bunsm\Desktop\Belajar\Python\Speech Recognition\venv\Scripts\python
Perkenalkan nama saya Anton
Process finished with exit code 0
```