

Task 1.1 – Note Detection

Note: Go through this file only after you have gone through the tutorials provided in [Resources.pdf](#) document in the *1. Theory* folder.

Please find the *Task_1_1.py* file in the folder *2. Practice/Workspace*.

Modify the *Task_1_1.py* to accomplish the following:

Given:

A set of six audio files, each contain a single Note.

- These audio files are provided in *2. Practice/Workspace/Task_1.1_Audio_files* folder. An example test audio file **Audio_1.wav** is shown in Figure 1.

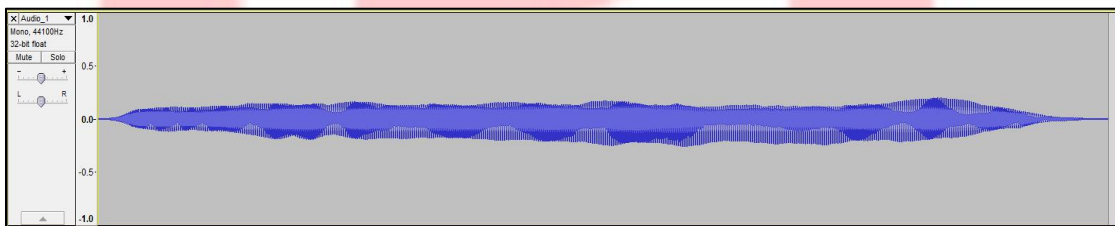


Figure 1: Example Audio File, Audio_1.wav

- Note provided in each test file is listed in **Task_1.1_Output.txt** file. This text file is provided in *2. Practice/Workspace/Task_1.1_Audio_files* folder. Figure 2 shows the content of **Task_1.1_Output.txt** file.

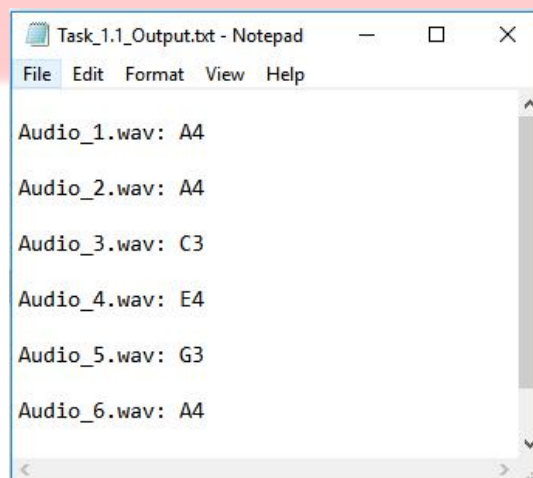
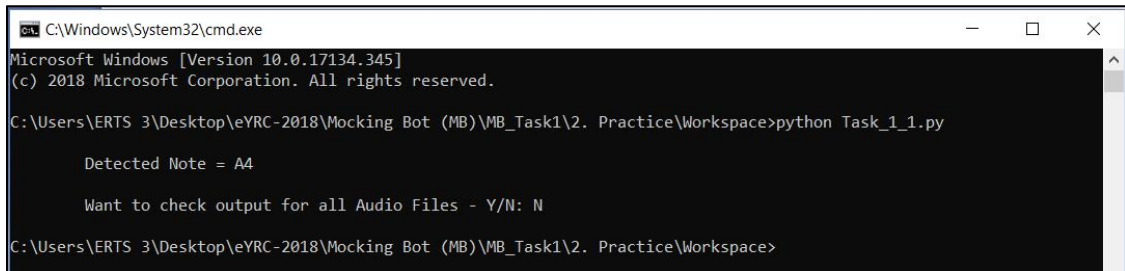


Figure 2: Task_1.1_Output.txt file

Problem Statement:

A “snippet” of outline code is given in *Task_1_1.py* file.

- Teams modify the *note_detect(audio_file)* function to take a **test audio file** as **input** and **return only the Detected Note**.
- For example, given the test audio file in Figure 1 as input, the output will look as shown in Figure 3.



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.17134.345]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\ERTS 3\Desktop\eYRC-2018\Mocking Bot (MB)\MB_Task1\2. Practice\Workspace>python Task_1_1.py

Detected Note = A4

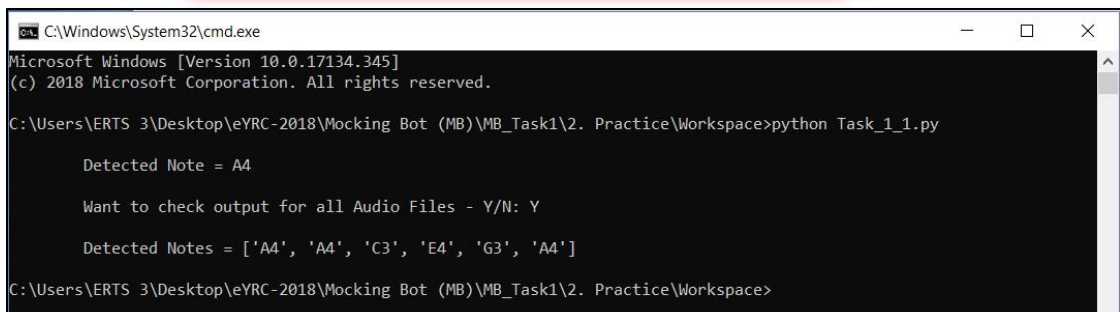
Want to check output for all Audio Files - Y/N: N

C:\Users\ERTS 3\Desktop\eYRC-2018\Mocking Bot (MB)\MB_Task1\2. Practice\Workspace>
```

Figure 3: Output of **Task_1.1** for Audio_1.wav file

Instructions:

- Teams are **not allowed** to import any **library/module** related to **Audio Processing** (apart from the ones installed in **Task 0**) in *Task_1_1.py* file. If found so, it will lead to **disqualification**.
- Do not edit the **main** function in *Task_1_1.py* file. Teams have to modify **only** the *note_detect(audio_file)* function.
- The **main** function, by default displays output for the single audio file, **Audio_1.wav** and asks the user whether to check the output for rest audio files.
- To check the output for all the test files, type “Y” and press Enter. Program shows the output of Detected Notes for all audio files as shown in Figure 4.



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.17134.345]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\ERTS 3\Desktop\eYRC-2018\Mocking Bot (MB)\MB_Task1\2. Practice\Workspace>python Task_1_1.py

Detected Note = A4

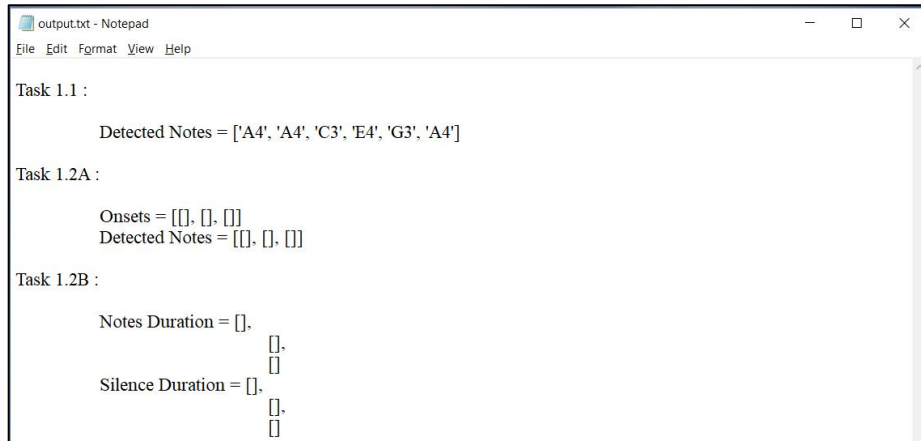
Want to check output for all Audio Files - Y/N: Y

Detected Notes = ['A4', 'A4', 'C3', 'E4', 'G3', 'A4']

C:\Users\ERTS 3\Desktop\eYRC-2018\Mocking Bot (MB)\MB_Task1\2. Practice\Workspace>
```

Figure 4: Output of **Task_1.1** for All Audio Files

- Teams can verify the output with the help of **Task_1.1_Output.txt** file given.
- Once done with the Task, run Test.py provided in **2. Practice/Workspace** folder. It will show the output of your program on Command Prompt and also generate Output.txt file in the same folder as shown in Figure 5.



```

Task 1.1 :

    Detected Notes = ['A4', 'A4', 'C3', 'E4', 'G3', 'A4']

Task 1.2A :

    Onsets = [[], [], []]
    Detected Notes = [[], [], []]

Task 1.2B :

    Notes Duration = [],
                    [],
                    []
    Silence Duration = [],
                    [],
                    []
    
```

Figure 5: Output.txt on running Test.py for Task 1.1

Note: If you are not getting any output, check the following:

1. You are using appropriate python version (**2.7.x**) on **Windows OS only**.
2. **Task_1_1.py** file is present in the same folder (Do not change the name of .py file, It must be **Task_1_1.py**)
3. **Task_1.1A_Audio_files** folder is present in the same folder (Do not change the name of folder or audio files provided in that folder)
4. Input and output argument of **note_detect** function is as specified (Do not change the name of function, It must be **note_detect**)

NOTE: Team **should not** modify anything outside **note_detect** function. If team wishes to create some helper function to solve the task, they must define it above **note_detect** function and call in **note_detect** function.