Task 1.2B – Detection of Notes and Silence Duration

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_2B.py* file in the folder *2. Practice/Workspace*.

Modify the *Task_1_2B.py* to accomplish the following:

Given:

A set of three audio files, each contain multiple Notes separated by silence.

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

Figure 1: Example Audio File, Audio_1.wav

- Notes and Silence duration for each test audio file are listed in **Task_1.2B_Output.txt** file. This text file is provided in *2. Practice/Workspace/Task_1.2B_Audio_files* folder. Figure 2 shows the content of **Task_1.2B_Output.txt** file.
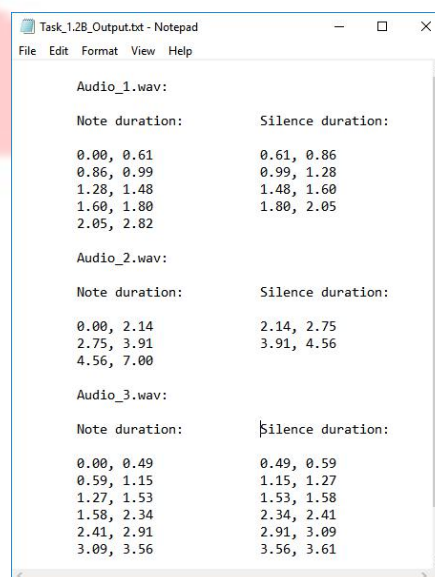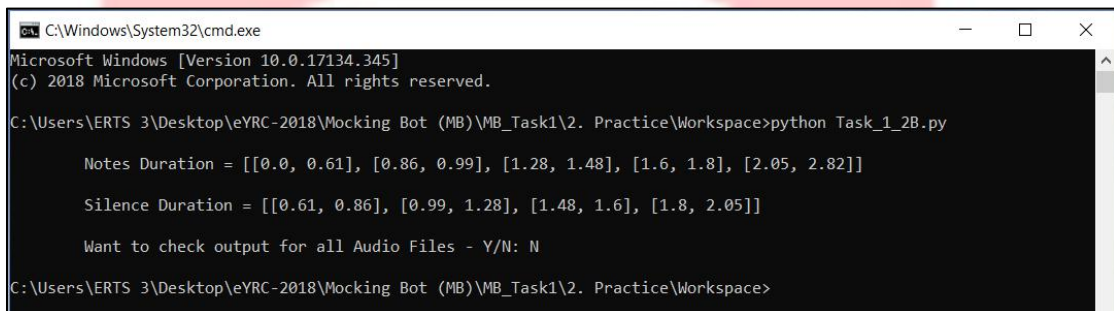

Figure 2: Task_1.2B_Output.txt file

Problem Statement:

A "snippet" of outline code is given in *Task_1_2B.py* file.

- Teams modify the functions: *detect_note_duration(audio_file)* to take a **test audio file** as input and **return a list of floating point numbers corresponding to the start and end time of each Note (up to two decimal places)** and *detect_silence_duration(audio_file)* to take a **test audio file** as **input** and **return a list of floating point numbers corresponding to the start and end time of Silence between two Notes or at end of the file (up to two decimal places)**.

- 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]
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C:\Users\ERTS 3\Desktop\eYRC-2018\Mocking Bot (MB)\MB_Task1\2. Practice\Workspace>python Task_1_2B.py

        Notes Duration = [[0.0, 0.61], [0.86, 0.99], [1.28, 1.48], [1.6, 1.8], [2.05, 2.82]]

        Silence Duration = [[0.61, 0.86], [0.99, 1.28], [1.48, 1.6], [1.8, 2.05]]

        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_1.2B** 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_2B.py* file. **If found so, it will lead to disqualification**.

- Do not edit the **main** function in *Task_1_2B.py* file. Teams have to modify **only** the *detect_note_duration(audio_file)* and *detect_silence_duration(audio_file)* functions.

- 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 Notes and Silence Duration for all audio files as shown in Figure 4.

- Teams can verify the output with the help of **Task_1.2B_Output.txt** file given.

Figure 4: Output of **Task_1.2B** for All Audio Files

● 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.

Figure 5: Output.txt on running Test.py for Task 1.2B

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_2B.py* file is present in the same folder (Do not change the name of .py file, It must be *Task_1_2B.py*)
3. *Task_1.2B_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 *detect_note_duration* function and *detect_silence_duration* are as specified (Do not change the name of functions, It must be *detect_note_duration* and *detect_silence_duration*)

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