Assignment 1
Digital Signal Analysis and Applications
Wave Mixer
Deadline : 18/01/2014 11:59PM

For this Assignment you have to design a **Wave Mixer**, so be bit creative, gear up and explore.

You will be provided with 3 sample .wav files on which you have to perform certain operations (You can also use your own .wav files).

You have to design an interface with following functionalities:

- Amplitude Scaling : Given a wave-form you have to scale with certain amount.

- Time Shift : Given a wave-form shift it along time axis.

- Time Scaling : Given a wave-from scale it along time axis.

- Time reversal : Reverse the wave along time axis.

- Mixing : This is a necessary feature for this assignment, you have to set certain values (mentioned above) for each wave selected and then mix them to get another wave as output.

- Modulation : Similarly, here also you have to set certain values for each wave selected and then modulate them to get another wave as output.
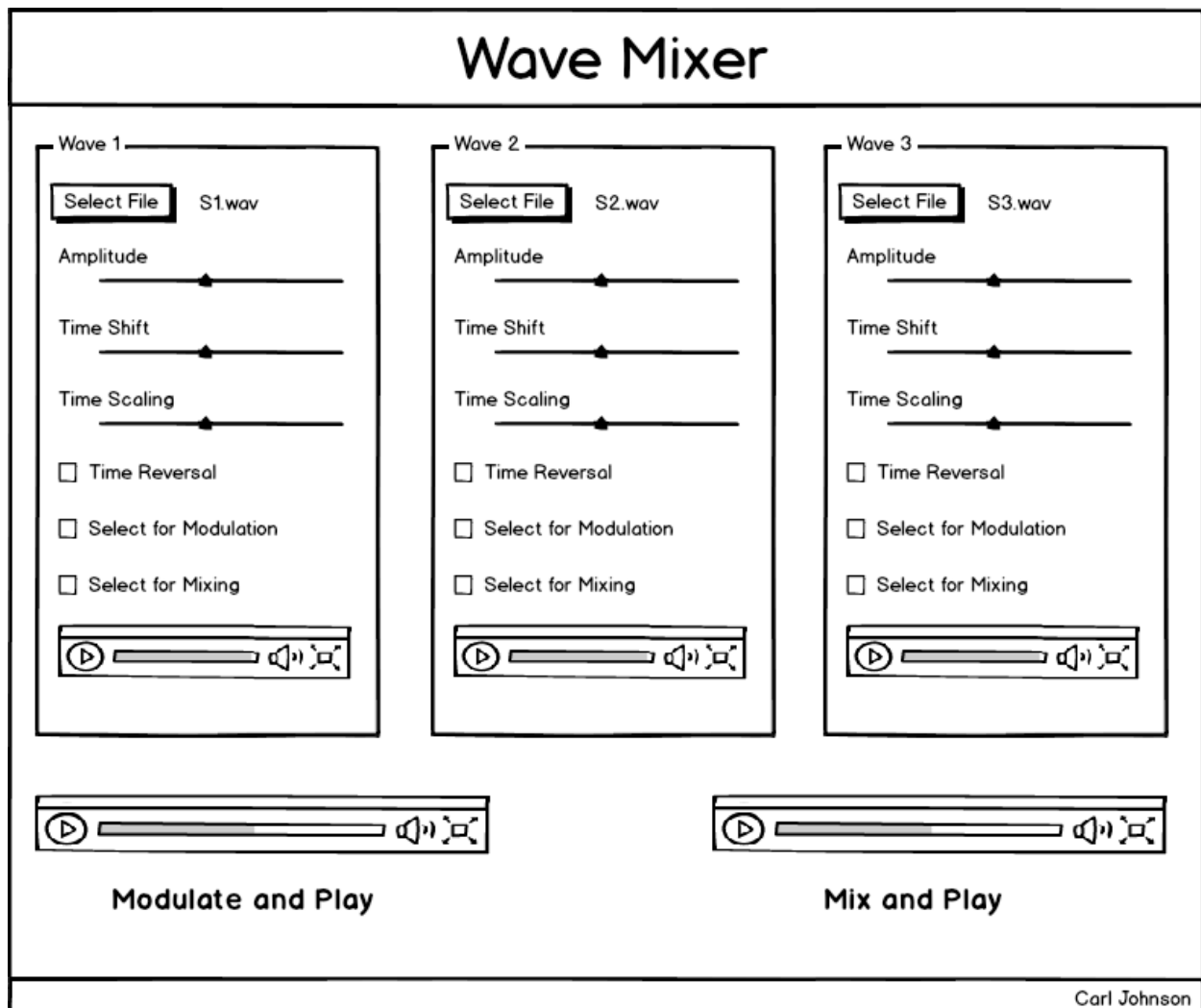
IMPORTANT :

- You can use built-in functions for **Reading** and **Writing** Wave files, but **don't** use any other built-in function to perform **Amplitude Scaling, TimeShift** etc.

- You have to implement these functions of your own and these will be checked and graded accordingly.

NOTE:

- Basic GUI attached is must for this assignment.
- You have to code in one of the given languages : **C++** or **Python**.
  Coding in other languages like MATLAB, Java, HTML or any other language won't be entertained and you won't be awarded any marks for that.
- The **Deadline is Strict**. So don't spam the TA's or Sir for any extensions.

Simple demo of how the application should look like.

Any other tweaks to the above can be incorporated but that should keep the basic functionality intact.