Programming Assignment #5 Due: March 28 (Saturday) at 11:59 PM

In Lectures 24 and 25, we looked at blending sounds together. Since it is getting to be election season, this programming assignment will blend two "patriotic" sounds together. I think every political candidate needs a copy of one of their speeches being given while patriotic music plays in the background and getting louder and louder as the speech progresses. For this assignment I want you to write a program that does exactly that.

Start the assignment by downloading and extracting `hw5.zip` from:

http://www.cs.uni.edu/~fienup/cs1120s15/homework/

The `hw5.zip` folder contains two sound files and some example programs from Lectures 24 and 25:

- `preamble.wav` - features Dr. Guzdial reading the preamble to the American Constitution, and
- `starSB.wav` - features the Army Band playing the Star Spangled Banner.

You will be blending together both of these sounds in this assignment.

For this assignment I want you to write a program that starts out with Mark Guzdial reading the preamble. Early in the speech (how early is up to you) I want you to start to play the Star Spangled Banner in the "background" of his speech. As the speech proceeds I want the music to get a bit louder over time (again, how loud and how fast is up to you). At the end of the speech I want you to play some more of the music, but at 100% volume. How long you continue to play is up to you. Feel free to be creative with this.

There are a lot of ways to do this. You can do it with a continuous raising of the volume of the music or you can do it in steps (part at 0%, part at 25%, part at 50%, part at 75%, and the final part at 100%). It is up to you how you actually implement this. However, when writing the program I want you to:

1. Write the program in the folder `hw5` and save the program in a file called `hw5.py`
2. Inside `hw5.py` you should create a `main()` similar to my example programs. The main function should
   - select the media folder
   - pickAFile() for the speech file (`preamble.wav`) and make a sound object from it (`preamble`)
   - pickAFile() for the Star Spangled Banner file (`starSB.wav`) and make a sound object from it (`starSB`)
   - call a function named `risingMusic(preamble, starSB)` and save the returned/blended sound
   - play the returned/blended sound using the `blockingPlay` function
   - write the blended speech and song sound to a file called `preambleAndStarSB.wav`
3. Inside `hw5.py` after the `main()` function, you should create your `risingMusic` function which should
   - create an empty sound canvas of the desired number of samples
   - blend together the preamble speech and the music as described above. Mainly that the speech should start out on its own and slowly the music should fade in. The music should play for a little bit after the speech is done.
   - The function should return this finished output sound.
4. After all function definitions at the bottom of the `hw5.py` start the `main` function running with a `main()` call.

The steps for the homework submission system are:

1. Design, write, debug, and test your program in a folder called `hw5`. "Zip" the folder `hw5` into a single file called `hw5.zip` (In Windows, right click on the `hw5` folder and select `Send to | Compressed (zipped) folder`)
2. Log on to the submission system at: **https://www.cs.uni.edu/~schafer/submit/which_course.cgi**
3. Select the course and section number of "CS 1120, Media Computation, Fienup". Click the "Continue".
4. Select the homework that you wish to submit: "HW 5: Patrotic Sound Blend". Click the "Continue" button.
5. Specify how many extra files you want to submit. Just leave it at 0. Click the "Continue" button.
6. Upload your programs by Browsing and selecting your `hw5.zip` file. Click the "Continue" button.
7. The next page reports on the status of the upload(s). You can always continue to upload a better version of the program until the deadline. The newer file will replace an older file of the same name.

(If you miss the deadline, you'll need to submit it as above, but select "Late Homeworks" in step 4 above.)