

Assignment 2

EECS 4462 3.0 Digital Audio, Fall 2018, Section A

Due: Monday, November 5, 2018, 9:00am.

Format: In teams of two.

Creating a digital delay

The purpose of this assignment is to give you experience creating audio plugins with JUCE. This will help you better understand how digital audio works as well.

To get started

This assignment does not require any further software to be installed. Your setup from Assignment 1 should be sufficient. Some useful links are posted under the Assignment 2 section.

Run the Projucer, create, and build an empty project. You will then modify the 4 files created, similarly to Assignment 1.

What to do

For this assignment, you have to implement a simple digital delay. A delay repeats all incoming audio after a user-specified time interval. Your plugin must allow the user to set the following parameters:

1. **Time interval:** The amount of time between an incoming sound and its first repetition. If there are further repetitions (see the Feedback parameter), they are also spaced apart by the same time interval. Must be expressed in seconds.
2. **Dry:** The loudness of the incoming signal expressed as a percentage. Normally set at 100%, so the incoming sound can be heard at full volume, but the user should be able to change that as they see fit.
3. **Wet:** The loudness of the repeated sounds expressed as a percentage. At 0%, there are no repetitions. At 100%, the first repetition is as loud as the incoming sound. The loudness of further repetitions are controlled by the Feedback parameter.
4. **Feedback:** The amount that each repetition gets fed back into the delay. Expressed as a percentage.

When set to 0%, there is no feedback. As a result, there is exactly one repetition of the incoming sound whose loudness is set by the Wet parameter.

When set to 100%, every repetition is fully fed back to the delay. This means that sounds keep repeating indefinitely (can become quite messy if there is a lot of incoming sound).

When set to a value between 0% and 100%, the loudness of each repetition is multiplied by that value. For example, if set at 50%, the first repetition will be at 100% loudness (how loud that is depends on the value of the Wet parameter), the second repetition at 50% loudness, the third at 25% etc.

Please note that submissions that minimally satisfy the above requirements will receive a mark of at most B. For higher marks, submissions must demonstrate user-friendly GUIs and some level of originality.

How to Submit

Before the deadline, send an email to your instructor (bill@eecs.yorku.ca) that lists the names, student numbers, and emails of both team members, and provides a link to a .zip file hosted online that contains:

1. The .dll file that is your plugin.
2. All the source files needed to compile your code (if you create new files, keep them all in the same directory)

Your submission will be tested with the Audio Host Plugin executable posted on the course website.

Do not send the .zip file as an attachment as it may be rejected.

The .zip files will be downloaded immediately after the deadline.