

# INTRODUCTION TO PROGRAMMING FOR MUSICIANS AND DIGITAL ARTISTS

## Exporting Chuck programs to M4A audio files

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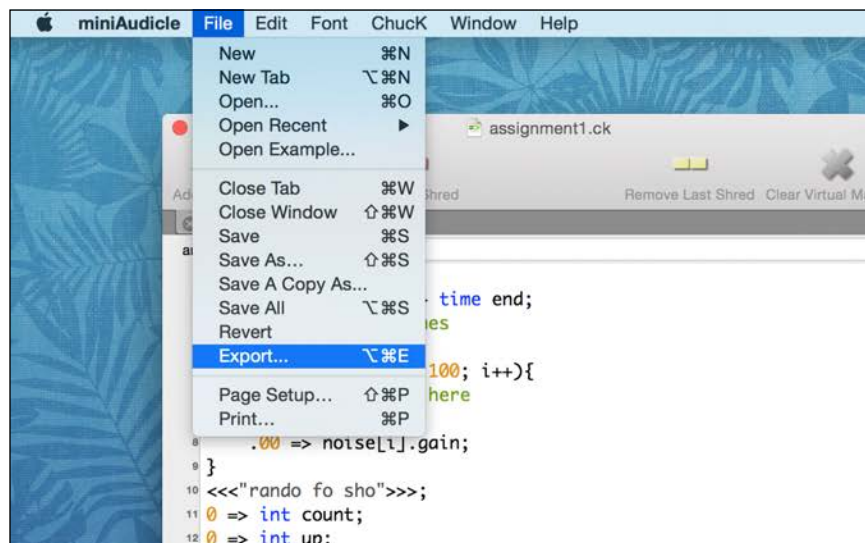
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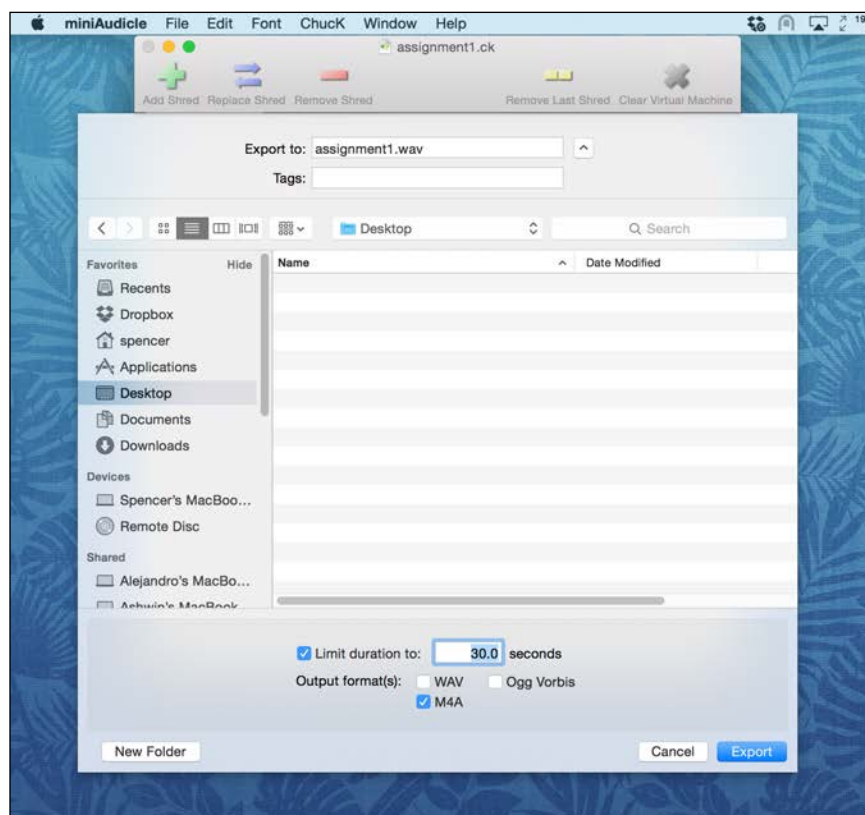
Exporting your Chuck program as an audio file is useful for sharing your sounds and compositions with friends or on the Web. Chuck can export WAV and M4A files, which can be played on mobile phones, tablets, and computers that do not have Chuck or miniAudicle installed. WAV files are uncompressed audio files, and are a direct representation of the raw sound signal. M4A files are *lossily compressed*, throwing away redundant data in the audio to reduce the file size, and are ideal for transmitting over the Internet and sharing with others.

## 1. Exporting in Mac OS X

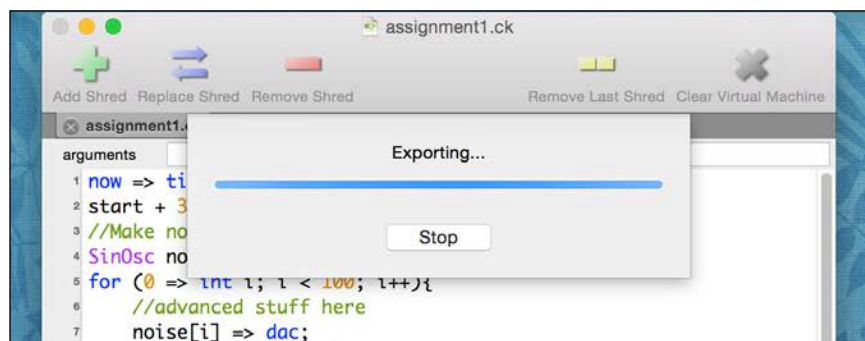
To export as M4A in Mac OS X, selecting File > Export... from the main menu.



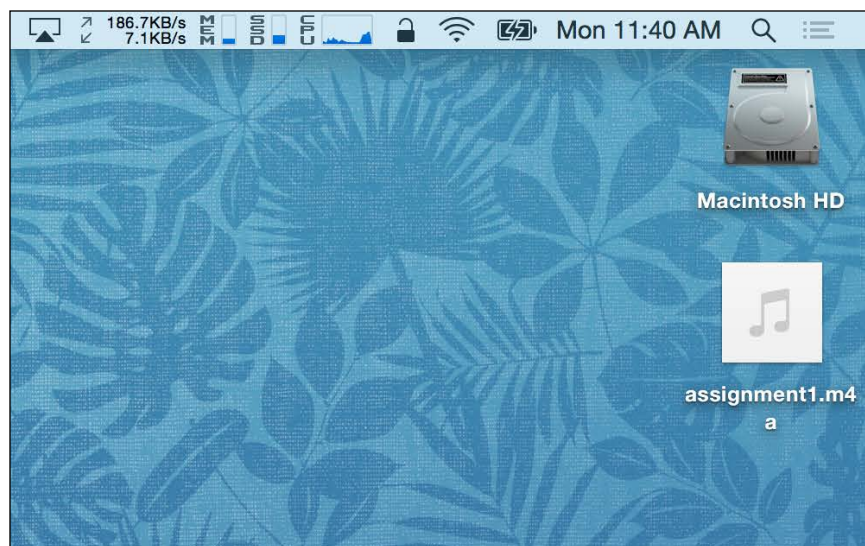
A dialog will pop up asking you where to save the file, with additional options for setting the maximum length and the file type(s) to save as. To save as M4A, deselect the “WAV” option and select “M4A.” For the assignments in this class, you should set a duration limit to the length specified by the assignment (default 30 seconds). But the time limit can also be disabled. (Note also that even if you select M4A, the file extension appears as “.wav” — this is OK, the resulting file will have the correct extension.)



Choose a location to save the file, select the desired options, and click “Export.” A progress bar will appear while the export is processing.

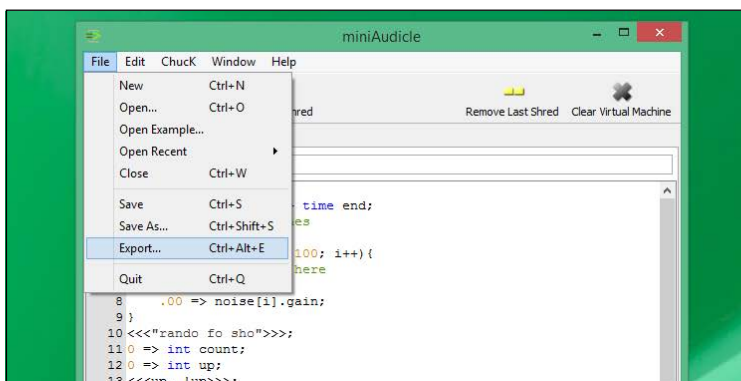


After the export finishes, if there were no errors, you will see the file at the location you specified. If there were any errors, you will see them on the Console Monitor, just as with errors when developing normally.

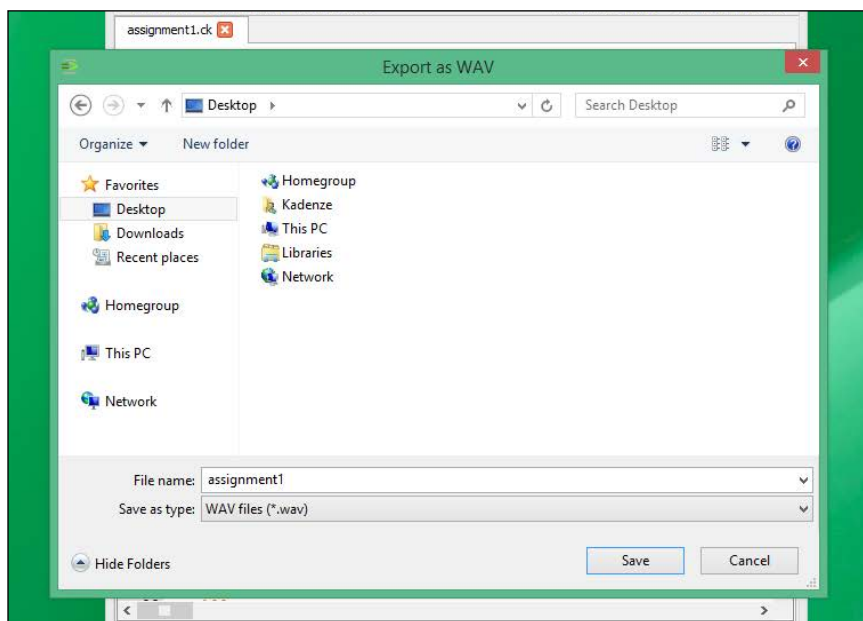


## 2. Exporting in Windows

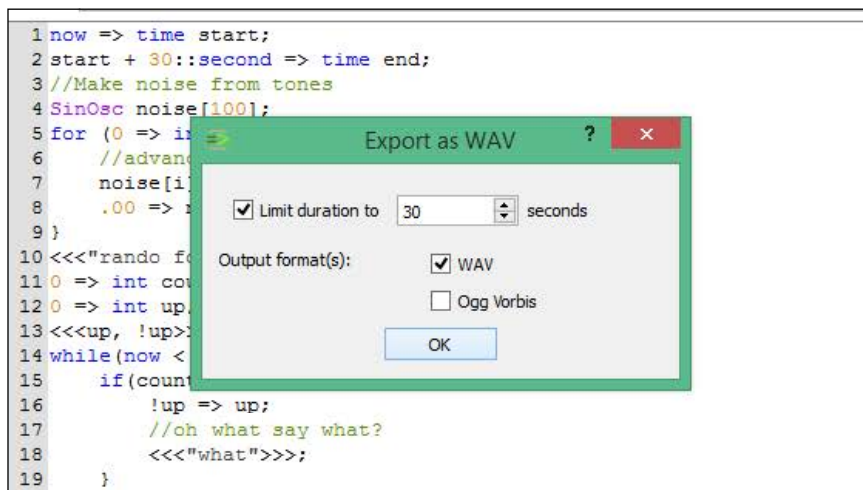
On Windows, exporting to M4A is a two part process. First, you export a WAV file from miniAudicle, and then use a separate program to convert the WAV file to M4A. To export a WAV from miniAudicle, select File > Export... from the main menu.



A window will pop up allowing you to set the file name and location to put the exported file. After you set these, click "Save."

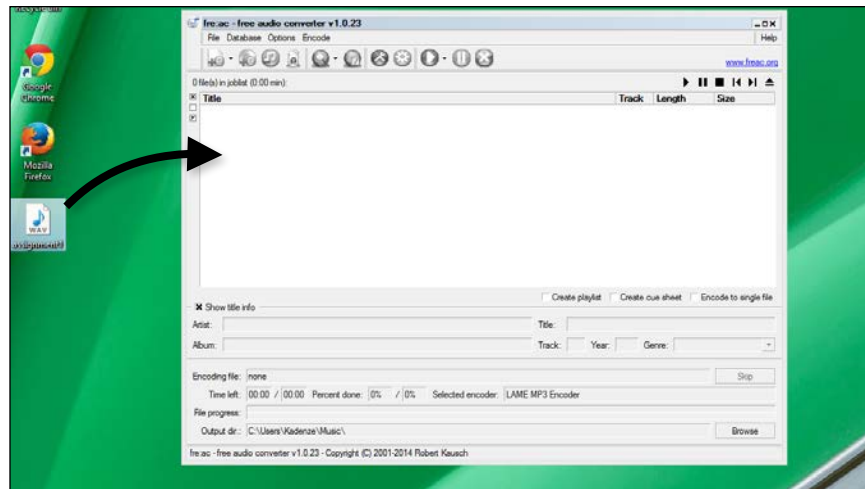


A second window will pop up to let you set a duration limit for the resulting file and the export format. The default format is WAV; you can leave this. You should set a duration limit for your assignments for this course, as they have set requirements for the composition length. Click "OK" when you're ready.

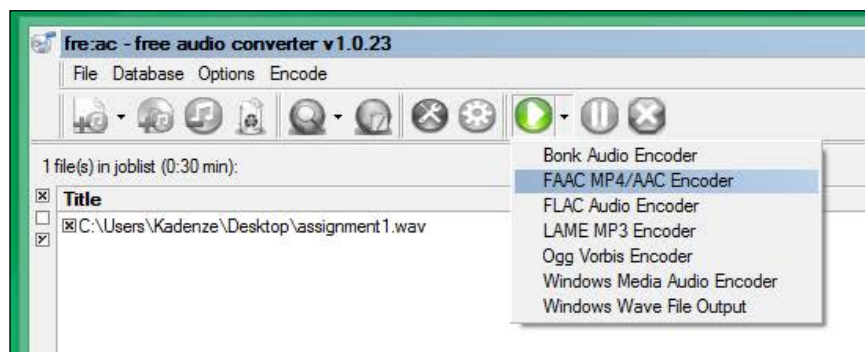


If all went well, there should be a WAV file at the specified location. If any errors occurred, they will appear on the Console Monitor.

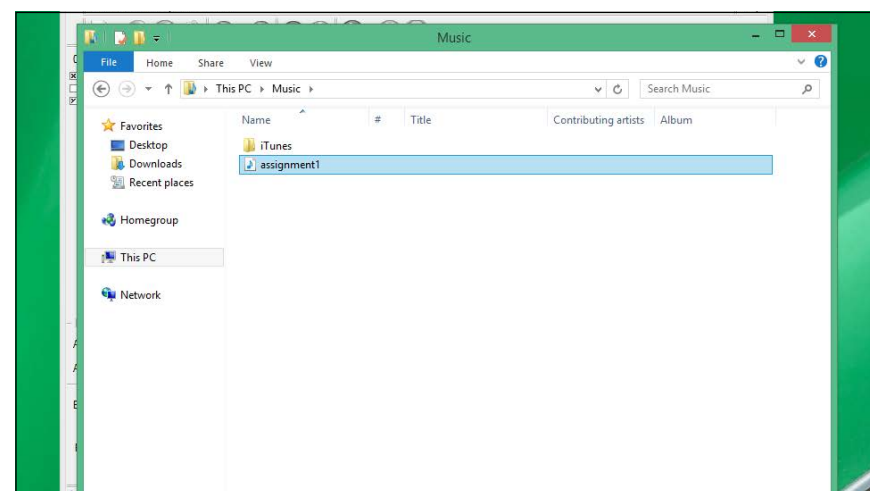
Now, use another program to convert the WAV file to M4A. We like a free program called *fre:ac*, or you can use iTunes. To use *fre:ac*, first download it from <https://www.freac.org/>. Run the installer, and open up *fre:ac* after it finishes. Drag the WAV file into the app window.



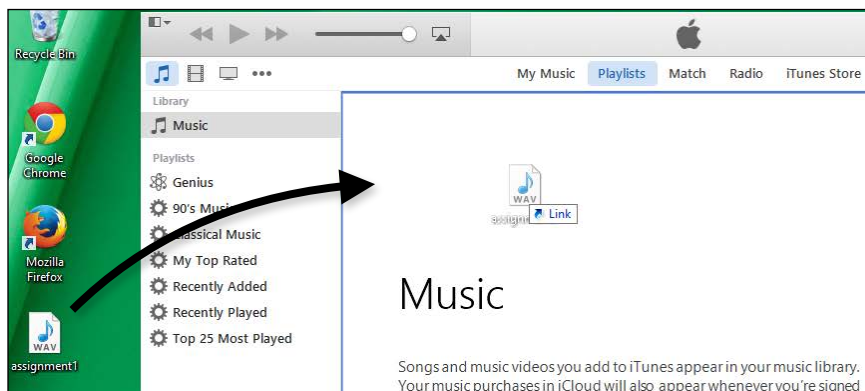
Next, open the dropdown menu next to the green “Play” button, and select “FAAC MP4/AAC Encoder.” This will start the conversion process, which will take a half a minute or so.



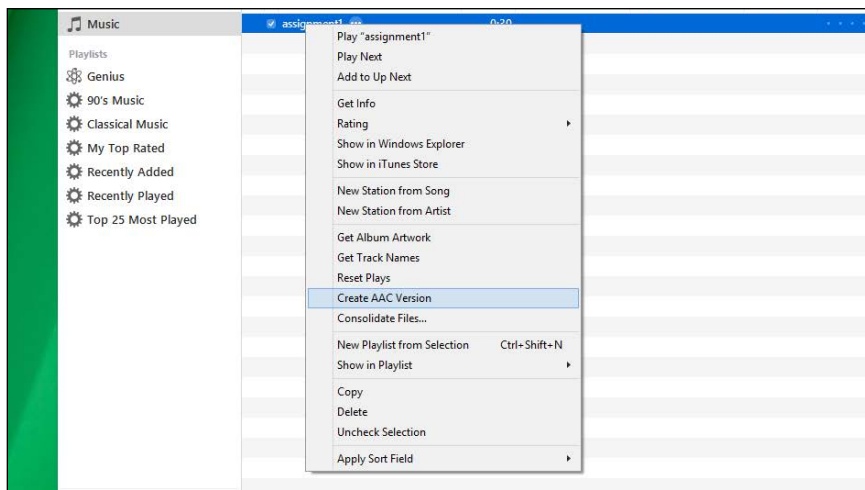
By default fre:ac will place the converted M4A file in your Music directory. You can now share this file or upload it to the Web!



If you already have iTunes, it is also easy to export with that. Open iTunes and drag the WAV file into your Library.



Right-click the track in iTunes and select "Create AAC Version." iTunes will take a few seconds to convert the file, and then add it as a new track in your Library.



To get the file itself, drag it from your iTunes library to the Desktop, or another folder. Then you can upload it the Web or share it with friends.

