

MAX/MSP By Example

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LESSON #2: MAKING A CHORD FROM A NOTE

Let's say instead of just a straight note, we want to make a chord. First, when we play a note on our MIDI controller let's say we want to have MAX turn the note into a minor chord. We can do this in several ways.

In this first patch, we use **notein** to take a note from our MIDI device (a). We have added 20 to the velocity, but we don't need to do that here. The left output has THREE lines—one for each note of the chord. The right-most line just sends the note that we input directly to the output. The middle line takes our input and adds 7 semitones before sending the note to the output. The left-most line takes the input and adds 3 semitones. So if we play a middle C, we now hear middle C, as well as (+7) G, as well as E (+3).

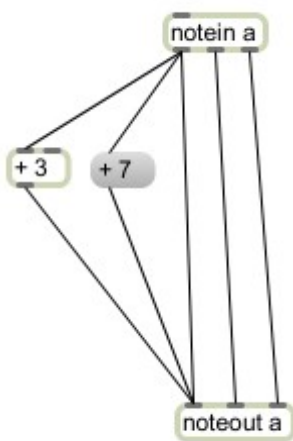


Figure 2.1 Adding notes to make a chord (in this case, a minor chord) from a **notein**

Assignment #1: Make a patch like this for a major chord. Answers are given at the end of this document.

Subpatches: Let's say we are going to use a lot of minor chords in our overall patch. We might then want to create a sub-patch called `minor_chord` that we can call on whenever we need it. Instead of outputting three lines from our **notein a**, we just want to output two, one directly to our output (shown), and one to "patcher `minor_chord`". This will open a subpatch window where we have an **inlet** object, a **+ 3** and **+ 7**, and our **outlet** object (Figure 2.2)

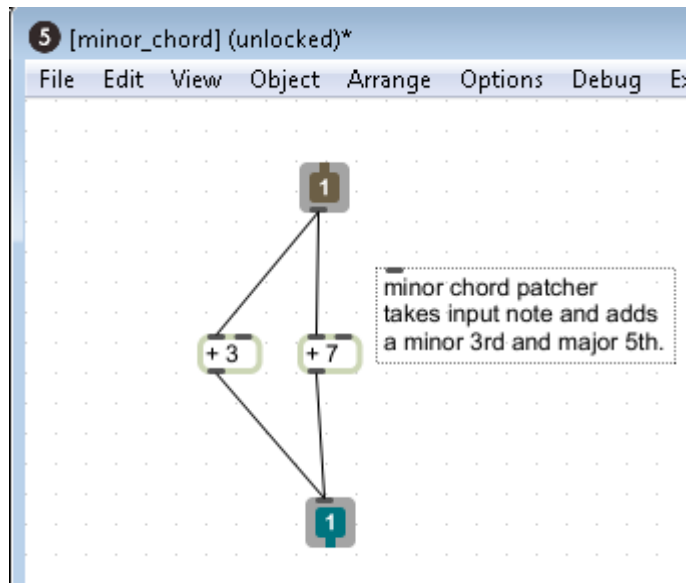


Figure 2.2 Our minor_chord subpatch

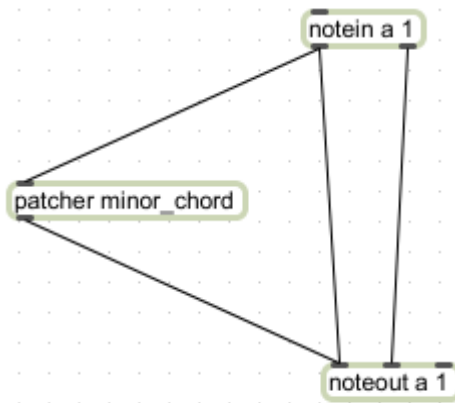


Figure 2.3 A subpatch link as part of our main patch.

Once we close our subpatch, we can add the patch lines to our main patch (Figure 2.3). You'll see I'm taking a **notein** message and sending it directly out, and sending the same **notein** message through the subpatch.

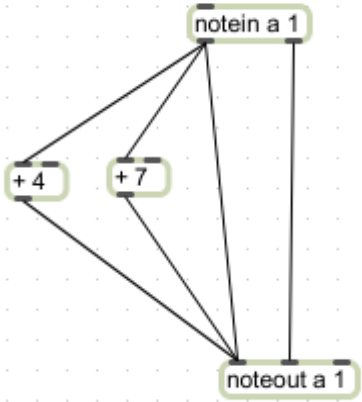
We could also draw a straight **inlet-to-outlet** patchline for our fundamental note in the sub-patcher and eliminate the direct line in our main patch.

Assignment #2: Make a sub-patch for a major chord and for a dominant 7th chord. Answers are given at the end.

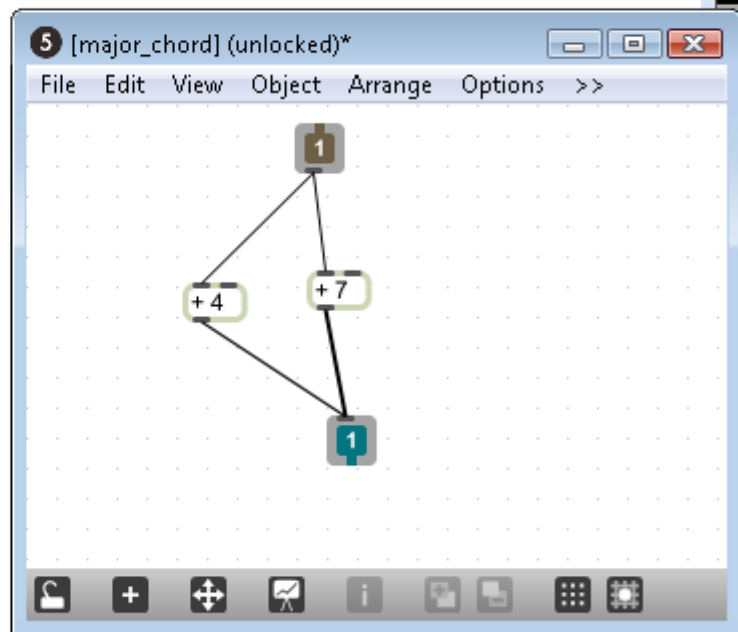
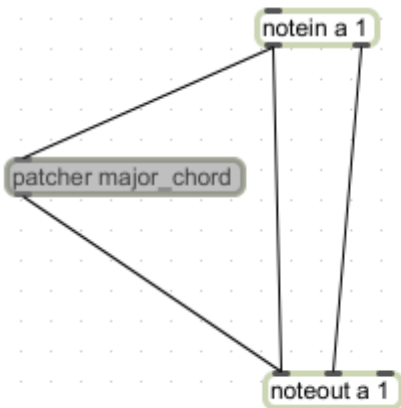
Assignment #3: Build a patch where we make a chord using **makenote** from a given fundamental.

Answers

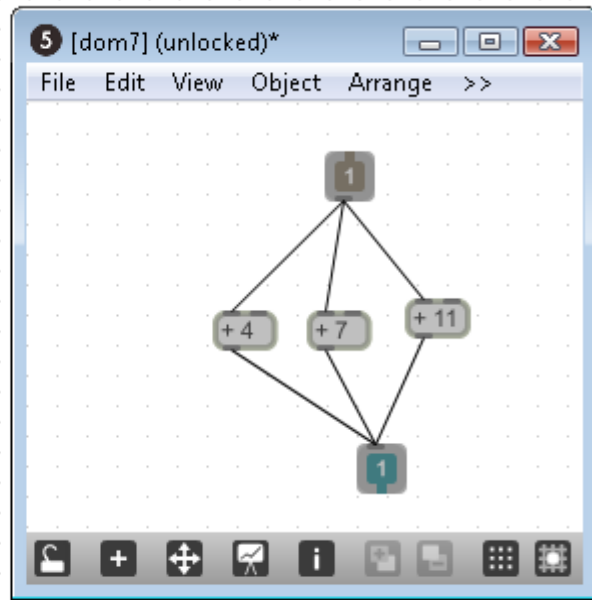
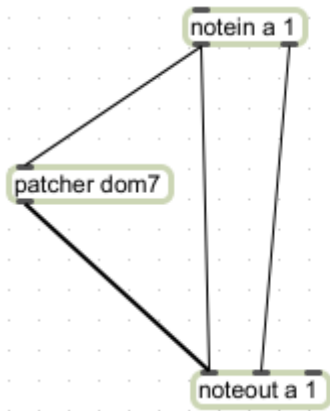
1. Major Chord



2.



Major chord as a subpatch.



Dominant 7th chord as a sub-patch

3.

