

# MAX/MSP By Example

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## LESSON #1 MAKING A NOTE

There are several different ways to make a note sound in Max/MSP. First, I'll make a note by using a virtual keyboard on my computer (Soundco Software's Virtual MIDI Controller). You can use either a virtual keyboard or MIDI hardware for "Notein". Notein takes a note played from your keyboard and outputs it. It's good practice to check that everything is working correctly by using MIDItester in MAX. It will tell you which note you just played, and so on.

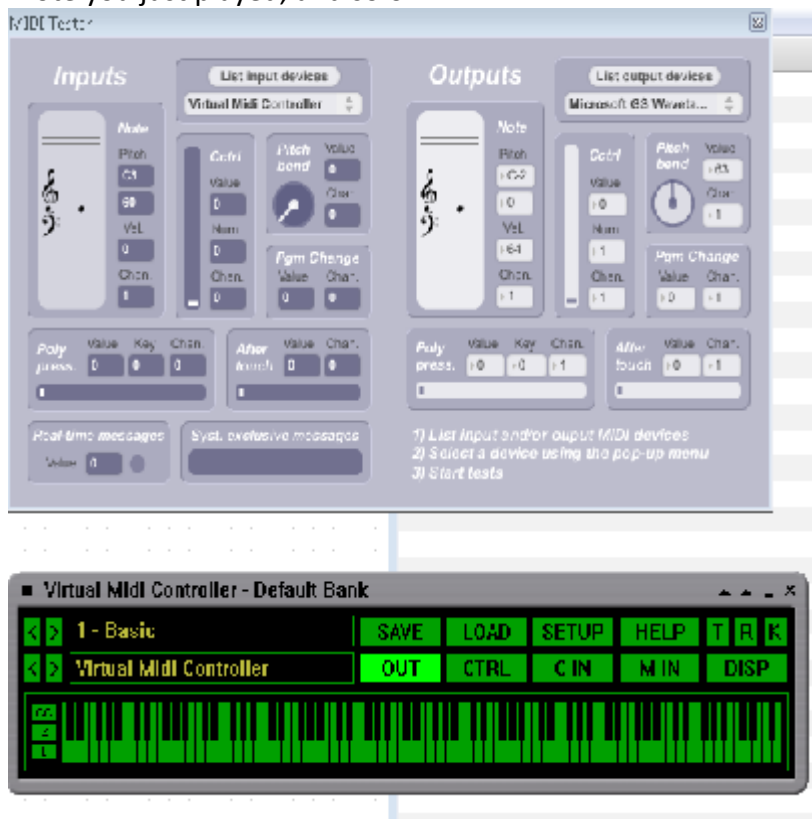
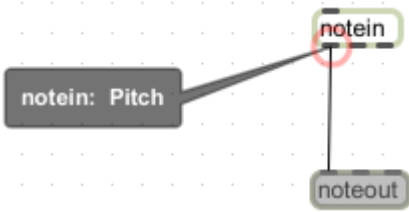


Figure 1.1 MIDItester

Figure 1.1 shows the **MIDItester** (under "extras") which can test my input and outputs before we get started. I'm using the Virtual MIDI controller keyboard you see there.



**Figure 1.2 notein and noteout**

In Figure 1.2, I'm using a **notein** and **noteout** to hear the notes that I play on my virtual MIDI device. You'll notice there are three output patch lines that can come from the **notein** object. If you're using Max 5, you can hold your mouse pointer over each exit point on the object to see what each line represents. The right-most line controls MIDI channel information, and the middle controls the velocity (volume). The left-most line controls your pitch. If you insert **number** boxes, the channel, velocity and pitch will show up as numbers when you play.

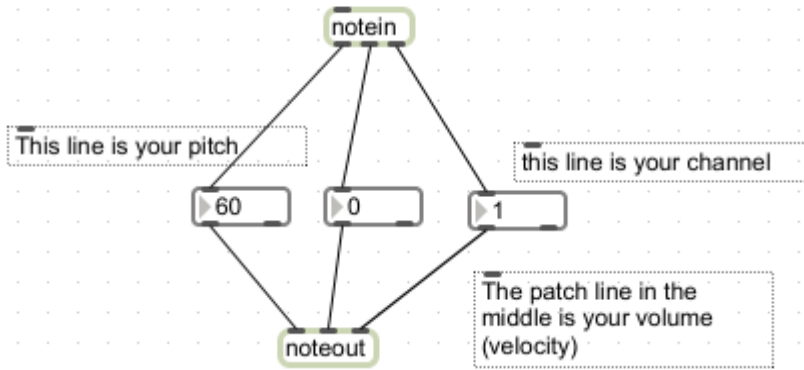


Figure 1.3 Seeing what is being played by using number boxes.

You can also add to or subtract from what is playing by using mathematical objects, such as **+**. Here, I increase volume by adding 20 to the input velocity.

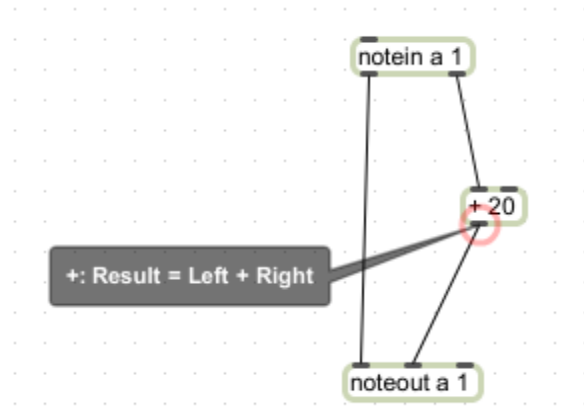


Figure 1.4 Adding a set numerical value to the notein velocity. You'll notice I've changed the **notein** object to read “notein a 1” instead of just “notein”. This saves me time, as I'm only working with one controller and one channel. When you do this, you'll see the output option for the channel disappears and so I only have two outputs: pitch and velocity.

### **makenote**

Let's say I don't want to use an external or virtual MIDI device. I can also create a note within MAX by using **makenote**.

In Figure 1.5, I input three types of information as a list. First, I have a **bang** button (“do it”, or “go!”), which sends the list “Play note 60 (C4), at a velocity of 75 for a duration of 1000 ms (1 second). Now, if I lock the patch (ctrl + enter) and hit **bang**, it will play the note.

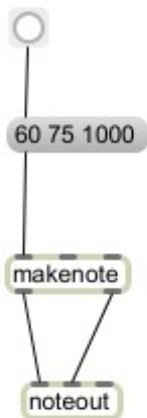


Figure 1.5 using **makenote** with a **bang** to play a note from within Max

You can also send the same information separately to **makenote**. This figure 1.6 patch does exactly the same thing as the patch above:

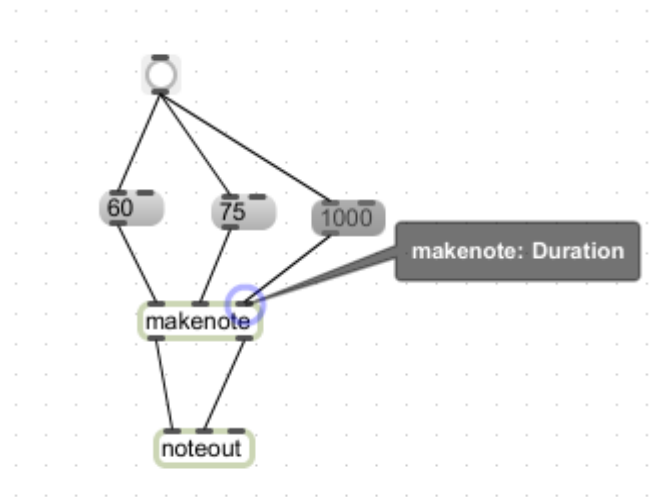
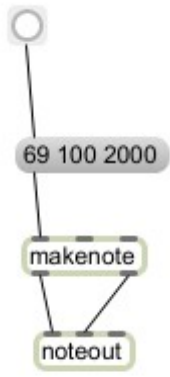


Figure 1.6 sending information separately to makenote.

**Assignment:**

From scratch, make a patch that will play note A4 (MIDI note 69) at a velocity of 100 for a duration of 2 seconds.

Scroll to the next page to see the answer.



One answer. You could also send the notes separately, as in Figure 1.6, above.