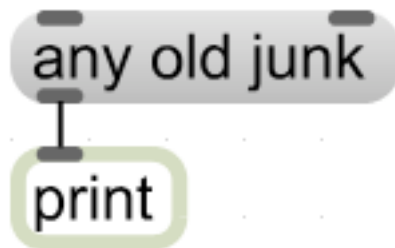


# **Max/MSP exercises 1a**

## Ex. 1

1. Make sure the Max window is showing. If it isn't, go to Window>Max.

2. Copy this simple patch.



3. Lock the patch (using the padlock at the bottom left of the screen), then click the message box. Watch the Max window update.

Printing messages to the Max window is one of the easiest ways to see what's going on in your Max patch. You should use it extensively, particularly while you are learning the program.

## Quick Hints:

### Shortcuts for **locking/unlocking patches:**

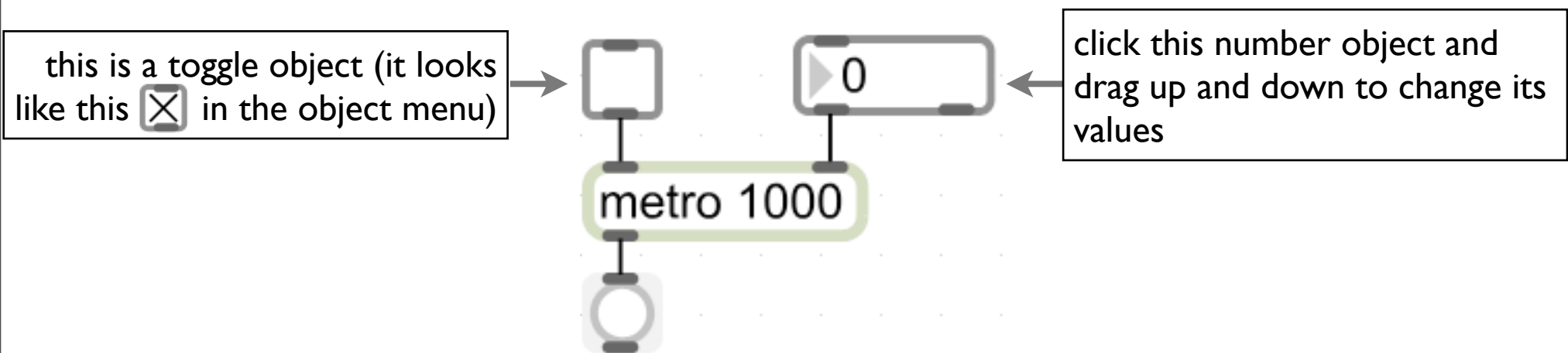
- Press Command-E (Mac) or Ctrl-E (PC)
- Press Command (Mac) or Ctrl (PC) and click anywhere in the patch space.

### Shortcut for **bringing up the Max window:**

- Press Command-M (Mac) or Ctrl-M (PC)

# Ex.2

## 1. Build this patch

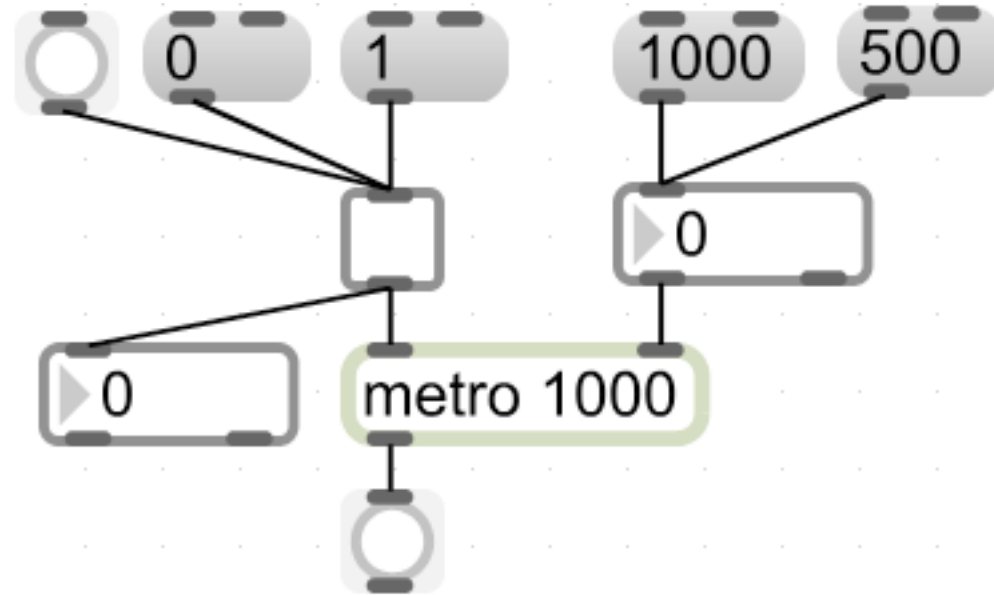


2. Turn the toggle button on and off, and modify the number box.

3. Connect a **[print]** object to the outlets of the **[toggle]** and **[number box]** and mess about with them again. What output do you get from the **[toggle]** object?

## Ex.3

1. Make the additions to the previous patch that you see here.

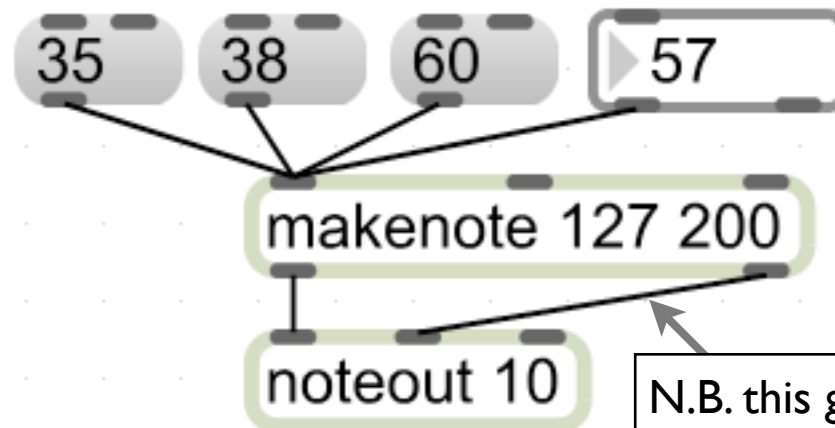


2. Make sure you understand what each of the objects does ([button], [toggle] and the number box), how to interact with them, and how they interact with each other.

3. What does the [metro] object do?

4. And why is there a '1000' in the [metro] object box? What does this refer to?

## Ex.4



1. In the same patcher window, build this routine.

2. Lock the patcher and click the message boxes/modify the number box. What do you get?

3. Make a [button] object. Attach its outlet to the inlet of the number box, then lock the patch and hit the button (repeatedly). You should get repeated notes.

4. Attach a [print] object to the outlet of the number box, then lock and hit the button (repeatedly). What's happening when you hit the button?

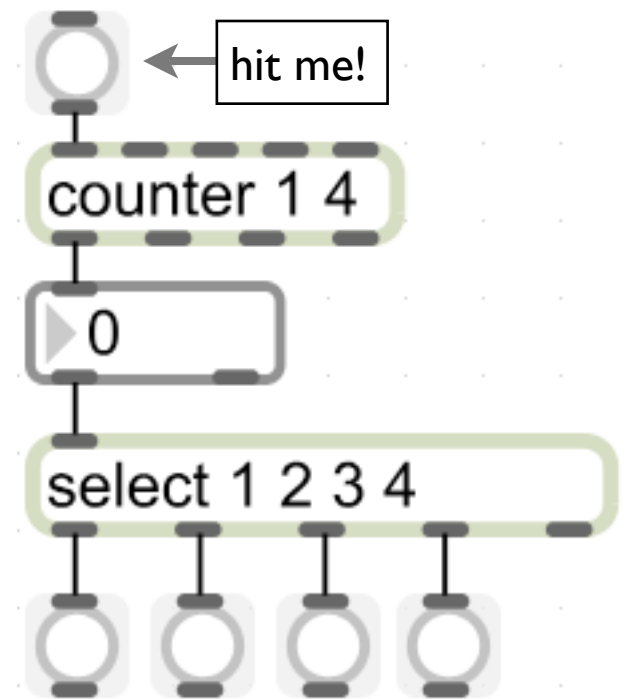
This patch should give you some kind of clue as to what [makenote] and [noteout] do (though we won't worry about this too much this week).

5. Change the numbers in the [makenote] object to 64 and 2000. What difference does this make? What do the numbers represent?

## Ex.5

1. Having copied this routine, lock the patch and hit the top button (repeatedly) to see what it does.

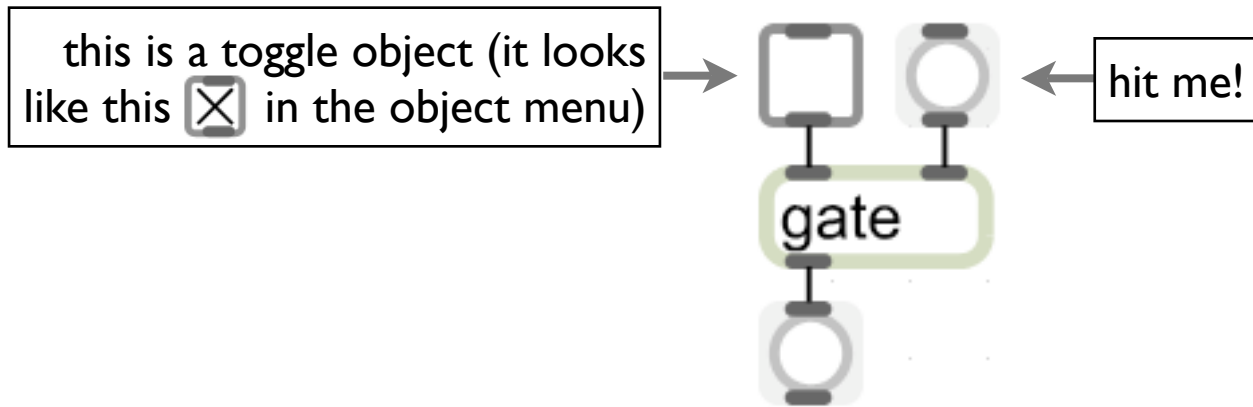
This introduces two more objects: [counter] and [select].



2. Unlock the patch again, then press 'alt' and click on the [counter] and [select] objects. This brings up a help window which will give you more information about the objects. We will look at this in more detail later, but for now, just know that help can be found for all objects in this way (try this with the [makenote], [noteout], [button], [toggle] etc. objects).

## Ex.6

1. This is a simple routine to introduce the [gate] object. Use the [toggle] to 'open' and 'close' the gate, then hit the top button.

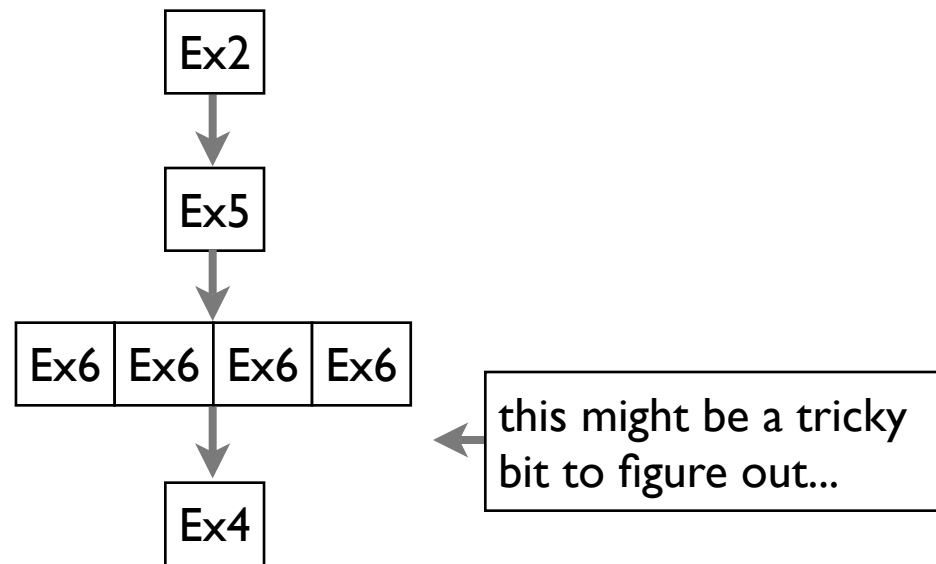


You should find that the when the gate is open, the bang will be let through; when it's closed, it won't.

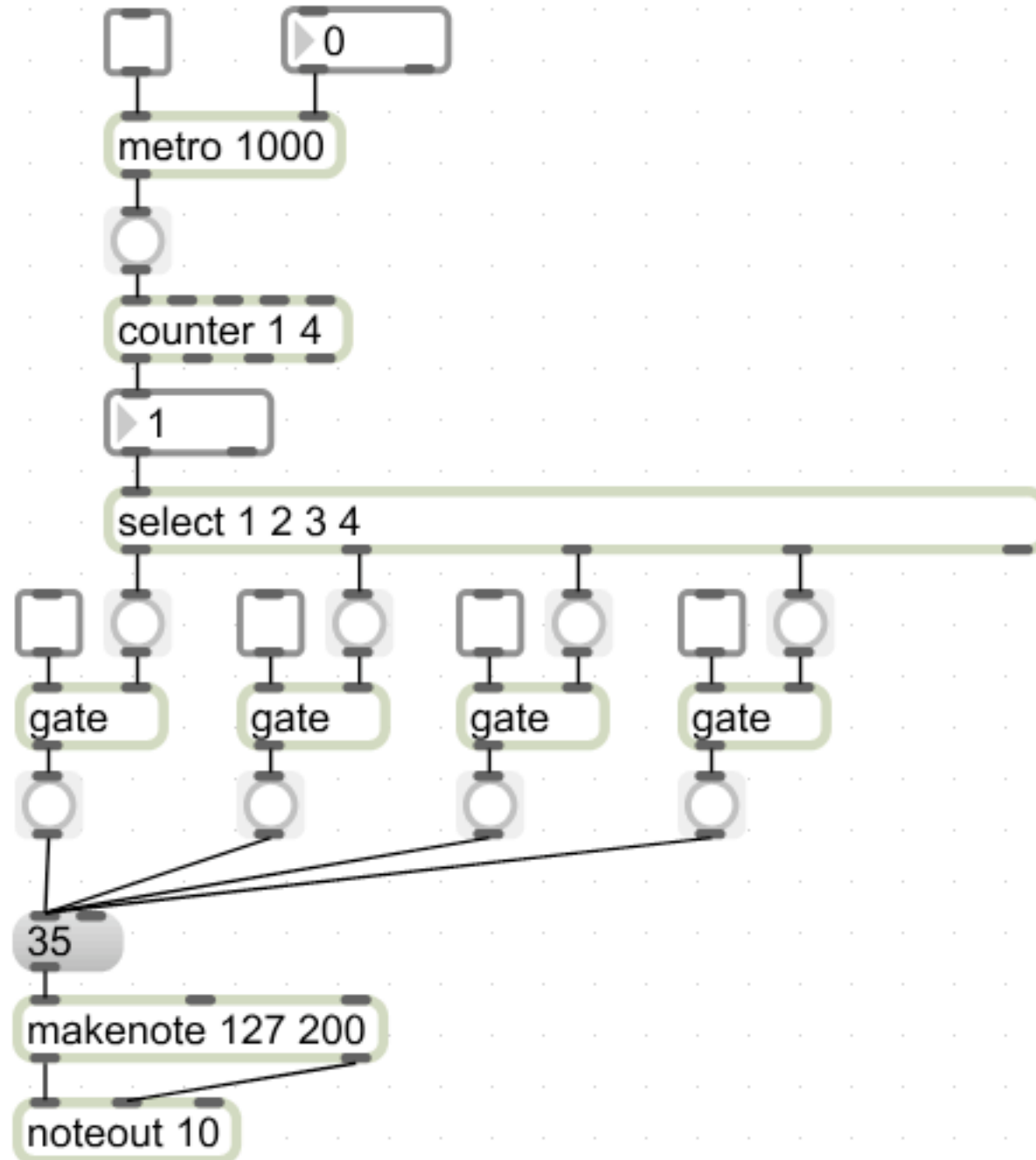
## Ex.7

You actually have all the objects you need to make a very simple step sequencer. Stringing some of these exercises together will allow you to make it. See if you can figure out how...

[There's a clue on the next page if you're struggling]



# Ex.7 – SOLUTION



## Ex.8

If you managed to figure that out, well done! If not, don't worry, but make sure you have some idea of what's being sent from object to object and how it's being processed by each object in turn. (Ask if you're not sure).

In order to make the patch more interesting...:

1. How would you alter it to yield a 16-beat step sequencer?
2. How would you alter it to offer different sounds on different beats (if you can arrange it so that the sounds can be determined by the user, so much the better!)

[Once again, you have all the necessary tools at your disposal; you can do the above without knowing any more objects.]