**Composition: Electronic Media II**
**Spring 2009**
**Intro to Max/MSP**

1. Discussion of the history, premises, features, and uses of **Max/MSP**.
   a) IRCAM 4x computer control by Miller S. Puckette and Robert Rowe.
   b) Object-oriented programming.
   c) Plays audio files, captures audio, and supports algorithms for generating events using randomness and interactivity.
   d) Objects are placed on the screen, values entered into them, and are connected to other objects with virtual patch cords.
   e) Max: Named for Max Mathews. Features control data, non-tilde objects, black patch cords.
   f) MSP: Named for Max Signal Processing or Miller S. Puckette. Features audio data, tilde objects, black and gold braided patch cords.

2. Launch **Max/MSP** as follows:
   a) Bring up mixer faders for the Digi and Mac.
   b) Assign the faders to the desired buses and output channels.
   c) Launch **Max/MSP** by selecting its icon in the dock, as shown below:



   d) Close all windows that may appear.

3. Open a new **Patcher Window** as follows:
   a) Select **File>New Patcher**
   b) An untitled window like the one below appears:



   c) Notice the toolbar on the bottom, shown in detail below.



   From left to right, these icons are:

   Lock/Unlock: Lock to play the patch; unlock to edit a patch.

   New Object: Creates a new object on the screen.

   Zoom: Zeroes in on the patch.

   Inspector: Will be discussed later. In general, it allows the appearance and behavior of an object or patch to be changed.

   Bring Forward: Brings an object forward on the screen.

   Send Backward: Send an object back on the screen.

   Show Grid: A grid can be used to help align objects.

   Enable Snap to Grid: Helps align objects.

4. To make the object palette appear on the screen, do the following:

   a. In an unlocked patcher window, double-click anywhere in the white area. A target icon like the one below will appear:
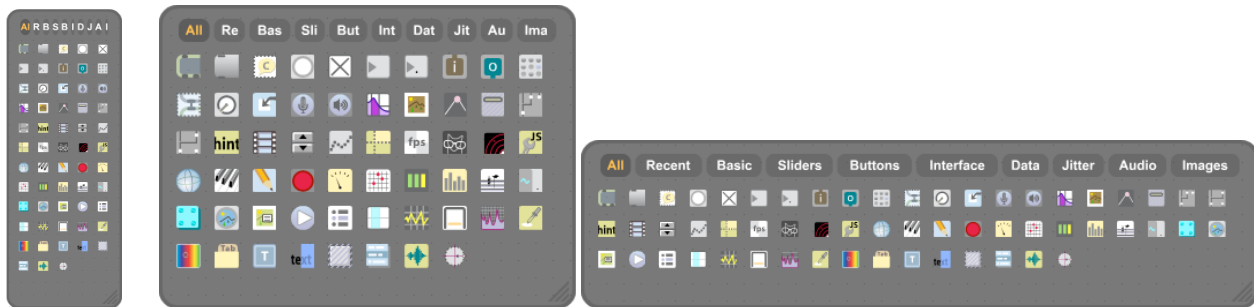
   

   b. The object that will be placed in the bull's eye will be taken from the object palette that appears, like the one below:
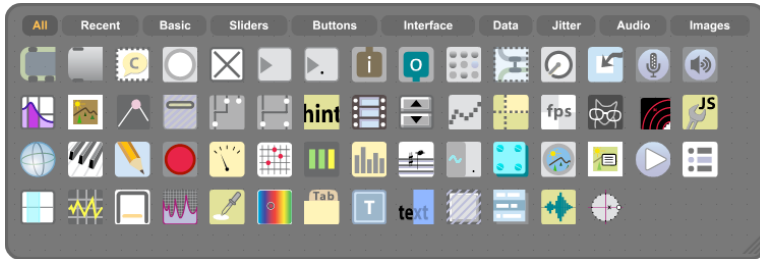
   

   c. Click once to select an object and it will appear where the bull's eye is.

   d. The shape and size of the object palette can be changed by clicking and holding the lower right corner, then dragging the palette. Some shapes are shown below:

   

5. The most important objects are located in the top left row, as shown below:

   

   From left to right, these objects are: Object Box, Message Box, Comment Box, Button, Toggle, Number Box, And Float Number Box.

6. When placed on the screen, each object can be connected to other objects with patch cords, repositioned, resized, or hidden from view. Each type of object is shown how it appears on the screen and is described below:

   Object Box. Creates Max or MSP objects. Notice inlets on top and outlets on bottom.

   Message Box. Used for Messages like "Start", "Stop", "Open". Notice inlet on top and outlet on bottom.

   Comment Box. Used for comments like "Larry's Patcher". Notice no inlet or outlet.

   Button. Used to trigger events with Bang messages. Notice outlet on bottom.

   Toggle. Used to toggle between states such as "on" and "off". Notice outlet on bottom.

   Number Box. Used to generate whole numbers. Notice inlet on top and outlet on bottom.

   Float Number Box. Used to generate decimal point numbers (such as 1.112). Notice inlet on top and outlet on bottom.

7. About inlets and outlets:

   a. An inlet accepts an output from another object. This could be a number, bang, toggle, start or stop message, audio signal, or other data. Some objects have more than one inlet.

   b. An outlet sends an output to another object. Some objects have more than one outlet.

   c. Inlets and outlets are connected with patch cords. The manner in which patch cords are created in another handout.