

J-DSP is capable of running with any browser, however, use of Internet Explorer 5+ or Netscape 6+ is highly recommended. Please note that some blocks may function only with Java 2 Virtual Machine enabled on your browser (<http://java.sun.com/getjava/>).

How to start J-DSP Editor

- Click on the **Start J-DSP** button of the NEEDS award J-DSP web page. A new window will pop up.
- Click on the **Proceed** button and then on the **Start!** button to start the J-DSP Editor. If you agree with the disclaimer terms press accept to continue. (Please note that this is a large applet and therefore it may take some time to complete loading. For a 28.8 Kbps modem connection it may take 30 or more seconds to establish the first block).

J-DSP Editor's main window

- The J-DSP Editor has a simulation area with push buttons and a block set selection drop-down menu.
- Note that the default block set is the **basic** functions one, and by selecting a different set then all the blocks associated with the particular selection appear on the top of the simulation area.
- The **general** blocks appear to the left of the simulation area.

Getting Started

Example: A digital filter simulation. A simple digital filter simulation requires the **Sig. Gen**, **Filter**, **Coeff.**, **Freq. Resp**, and **Plot** blocks.

How to drag-n-drop blocks?

- Select the signal generator block by clicking once on the **Sig. Gen** block button located at the top of the general blocks column and drag it onto the simulation area (Note that when initially placing a block in the simulation area, the mouse pointer automatically locks onto it with a single click). Release it anywhere on the simulation area by clicking on the desired position.
- Repeat the same process for the remaining blocks (**Filter**, **Coeff.**, **Freq. Resp**, and **Plot**).
- The **Filter** is the centerpiece of a digital filter simulation. You must rearrange the remaining blocks around the **Filter** block and connect them to it, as shown in Figure 1. Proceed as follows: position the **Sig. Gen** block to the left of the **Filter**, the **Coeff.** below the **Filter**, the **Freq. Resp** above the **Filter**, and the **Plot** to the right of the **Filter**. Note that in order to move a block after it has been placed in the simulation area,

the user must first highlight the block by clicking on it once and while keeping the button pressed drag it to the desired position.

How to connect the selected blocks?

- We proceed by connecting all the selected blocks. Note that on any block the left and right connecting nodes (small triangles) are used for signals while the upper and lower connecting nodes for coefficients.
- Click once on the connecting node on the right side of the signal generator block and while holding the mouse button down, drag the mouse arrow to the connecting node on the left side of the **Filter** block.
- Releasing the mouse button will create a connection between the two blocks.
- Make the connections in the direction of the signal flow.
- Repeat for the remaining blocks by connecting the **Coeff.**'s block top connecting node with the connecting node on the bottom of the **Filter** block. Also connect the **Filter** block's top connecting node with the bottom connecting node of the **Freq. Resp** block and the **Filter**'s right connecting node with the **Plot**'s left connecting node.
- The simulation diagram should look like the figure below.

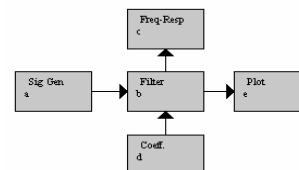


Fig. 1: Block diagram of a digital filter using the J-DSP Editor.

How to change the parameters of a block?

- By double-clicking on a block its dialog window pops up and its parameters can be modified.
- In this particular example double-click on the **Coeff.** block and set the following coefficients: $b_0 = 1$ and $b_1 = 1$.
- Then double-click on the **Freq. Resp.** block and observe the filter's frequency response.
- Following that, double-click the **Plot** block to check the output waveform.
- Note that every block has its own help menu that can assist the user in understanding the block's functionality.