

Running collaborative simulations in J-DSP:

This document describes the procedure for running collaborative simulations using J-DSP. Various steps involved in the process are depicted with appropriate figures. The current version supports only two users per collaboration. Also, the chat functionality is only available between the two users involved in the collaboration. J-DSP software can be started through the hyperlink, http://jdsp.asu.edu/jdsp_chat/jdsp.html.

In case the web server hosting the collaborative simulations software is down or whenever a proper socket connection cannot be established between the server and the user's J-DSP instance, a pop-up dialog window is displayed. A snap shot of the pop-up dialog window is shown in Figure 1. Please note that if a pop-up blocker is installed or is included as a part of the Internet browser window on the host computer, some of the pop-up windows might be blocked.



Figure 1: The Pop-up dialog window.

The starting point of the J-DSP software i.e., the *applet* page is shown in Figure 2. Enter any unique login name for identification and then click on the [ok] button to start with J-DSP. The “login name” can only contain alphabets, numbers or a combination of both. It cannot include any other characters. Also, the number of characters should be at least three and at most eight.

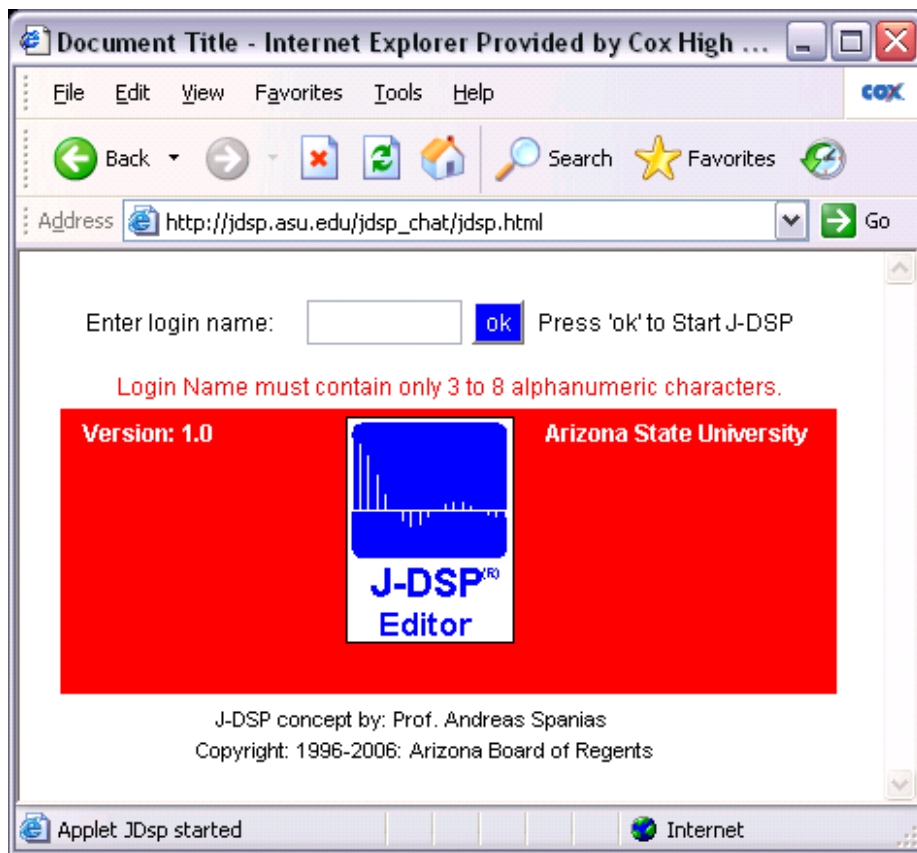


Figure 2: The J-DSP applet page displaying the login name field and J-DSP logo.

Once a valid login name is entered, depending on the user's computer technical specifications and the Internet connection speed, the applet might take some time to load and it opens up a disclaimer window. A snapshot of the disclaimer dialog window is shown in Figure 3. It displays the terms and conditions applicable to the usage of the J-DSP software. Once the user agrees to the terms and conditions and clicks on the [Accept] button, the *J-DSP editor frame* window is opened. This is the main window or the workspace for running any J-DSP simulation and is as shown in Figure 4.

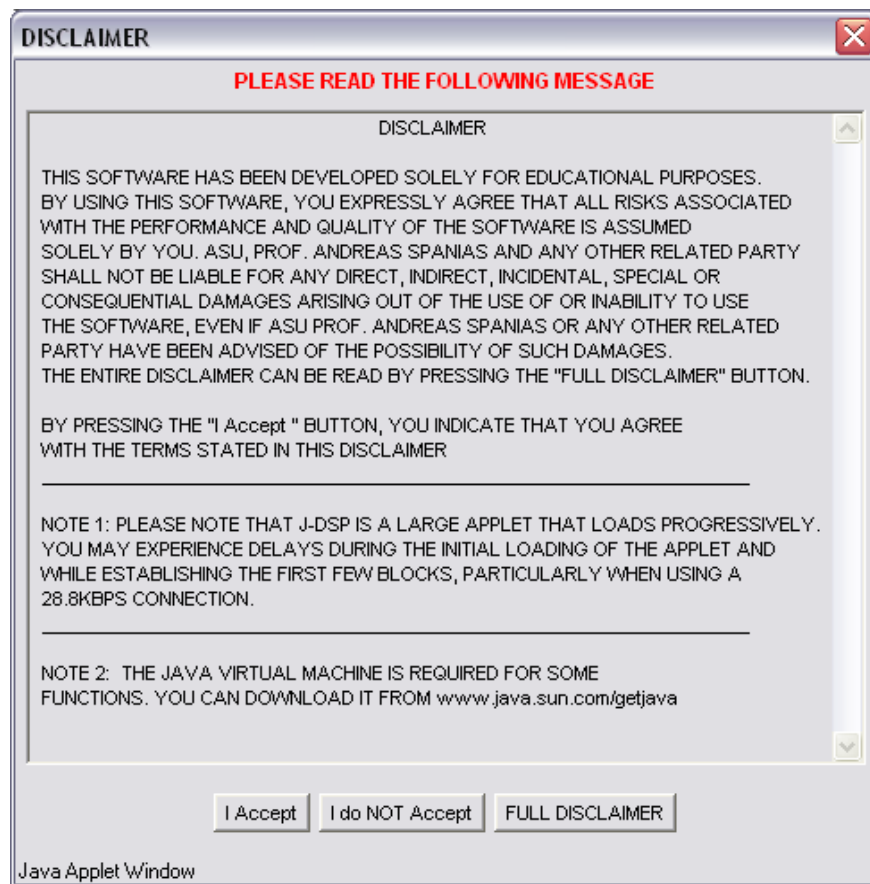


Figure 3: The Disclaimer dialog window.

Meanwhile, the J-DSP applet window shown in Figure 2, is followed by a window similar to the one shown in Figure 5. It displays the login names of all the other users who are logged in to J-DSP and are not yet participating in a collaborative simulation. In case there are no additional users, or in a scenario where all the other users are already involved in a collaboration, the list would be empty. As soon as a new user logs in to J-DSP or one of the already existing users is available for collaboration, their login name would be displayed in the list. The same window also contains two buttons namely the [Start Collaborative Simulation] button and the [Display Editor Frame] button (see Figure 5). In case the editor frame window is closed in between, the latter button would become activated. This button when clicked on, displays the editor frame window with its previous contents, if there were any before closing it. A collaboration process is started by selecting one of the users available in the list and then pressing the [Start Collaborative Simulation] button.

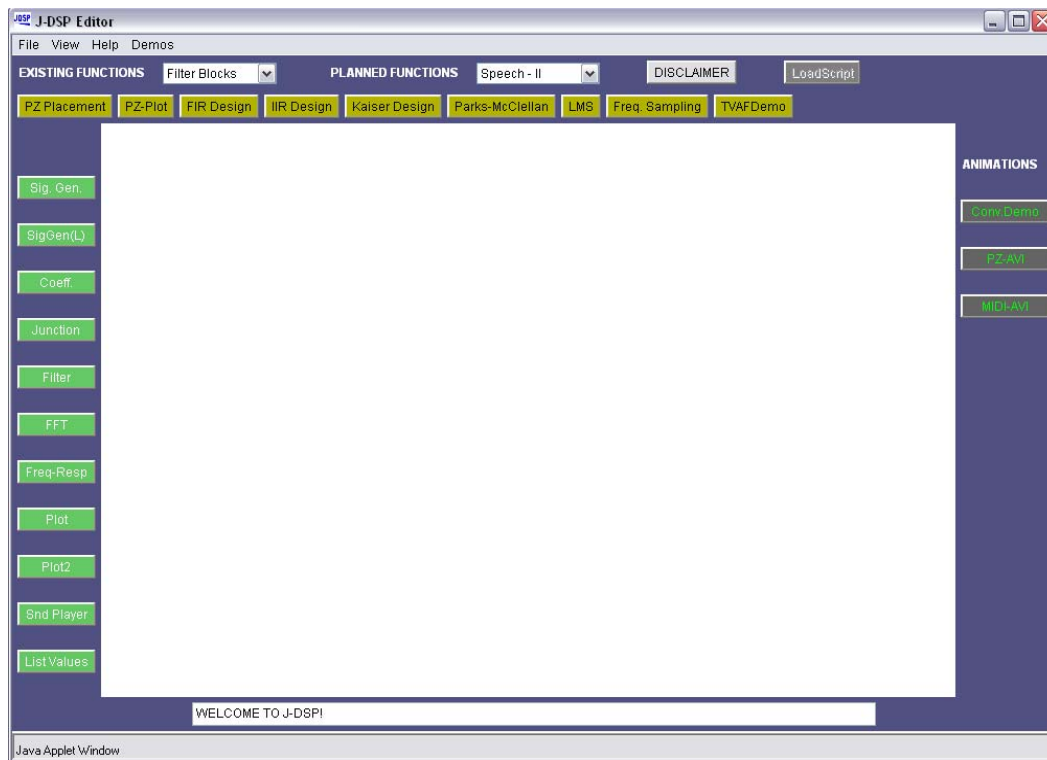


Figure 4: The Editor Frame window or the J-DSP Editor: the simulation space.

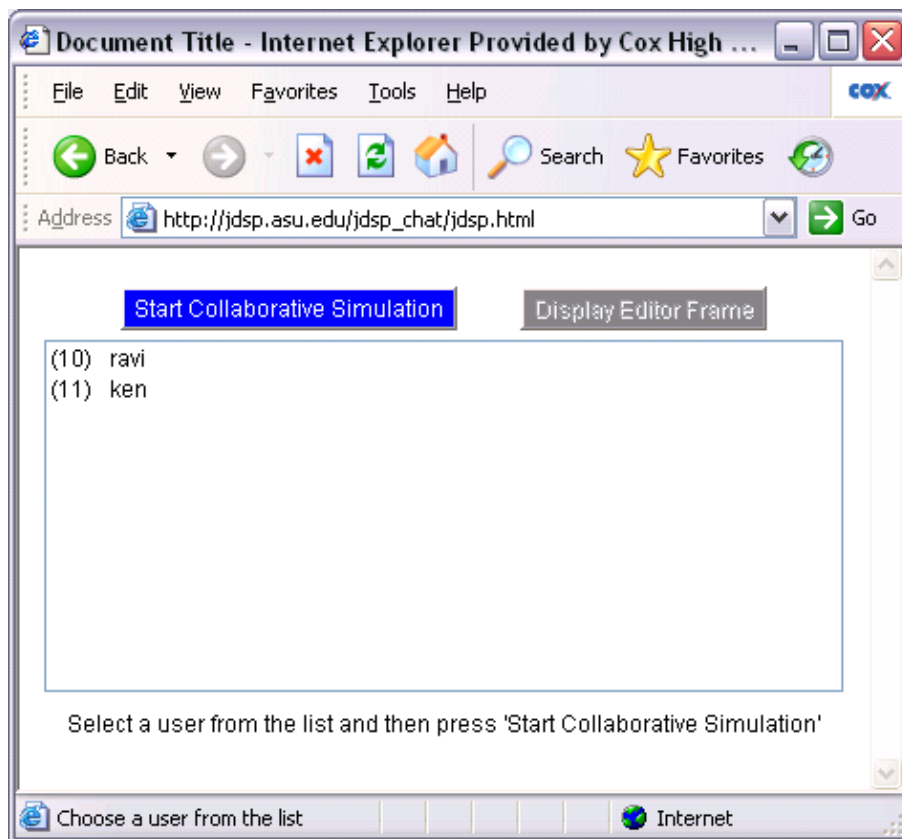


Figure 5: A sample J-DSP applet page displaying list of available users.

A *Chat dialog* window useful for communicating with the other collaborator is automatically opened with the start of a collaborative simulation. A sample chat dialog window is shown in Figure 6. It is a child window of the applet page and hence gets minimized and maximized along with the applet page.

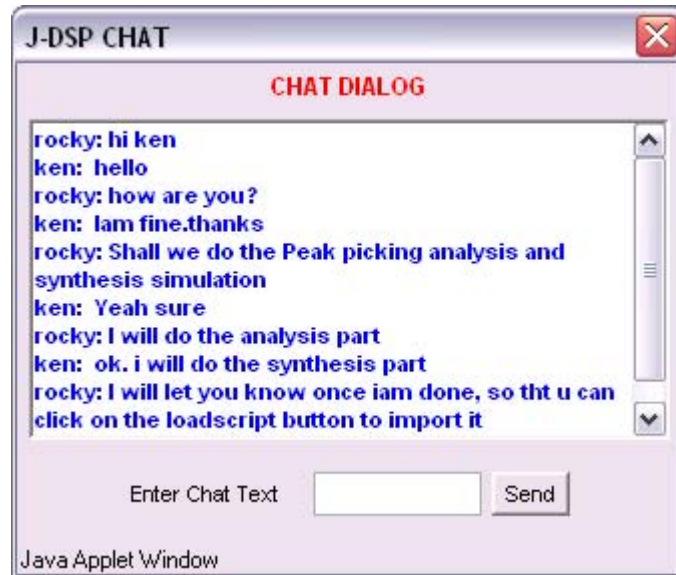


Figure 6: A sample J-DSP chat dialog window.

Also during a collaborative lab, the J-DSP software creates a channel for sending the current simulation environment in the form of J-DSP scripts to the other user via the server (in the background). Meanwhile the J-DSP applet window shown in Figure 5 is transformed in to another window similar to the one shown in Figure 7. This window displays a text string with the user's login name and also the collaborator's login name, and the J-DSP logo. This window also contains three buttons namely the [Display Editor Frame] button, the [Display Chat Window] button, and the [Stop Collaboration] button (See Figure 7). The [Display Chat Window] button is similar to the [Display Editor Frame] button in operation, except that it opens the chat dialog window and that it is activated when the chat dialog window is closed. Thus, the chat window can be opened and closed manually at any time during the collaboration process and the Editor Frame window can be opened and closed as long as the user is logged in to the J-DSP software. The third button, [Stop Collaboration] when clicked on, terminates the current collaboration and closes the chat dialog windows of both the users involved in it. Also, the window in Figure 7 is transformed back in to a window similar to the one in Figure 5 (with the latest list of user login

names available for collaboration).

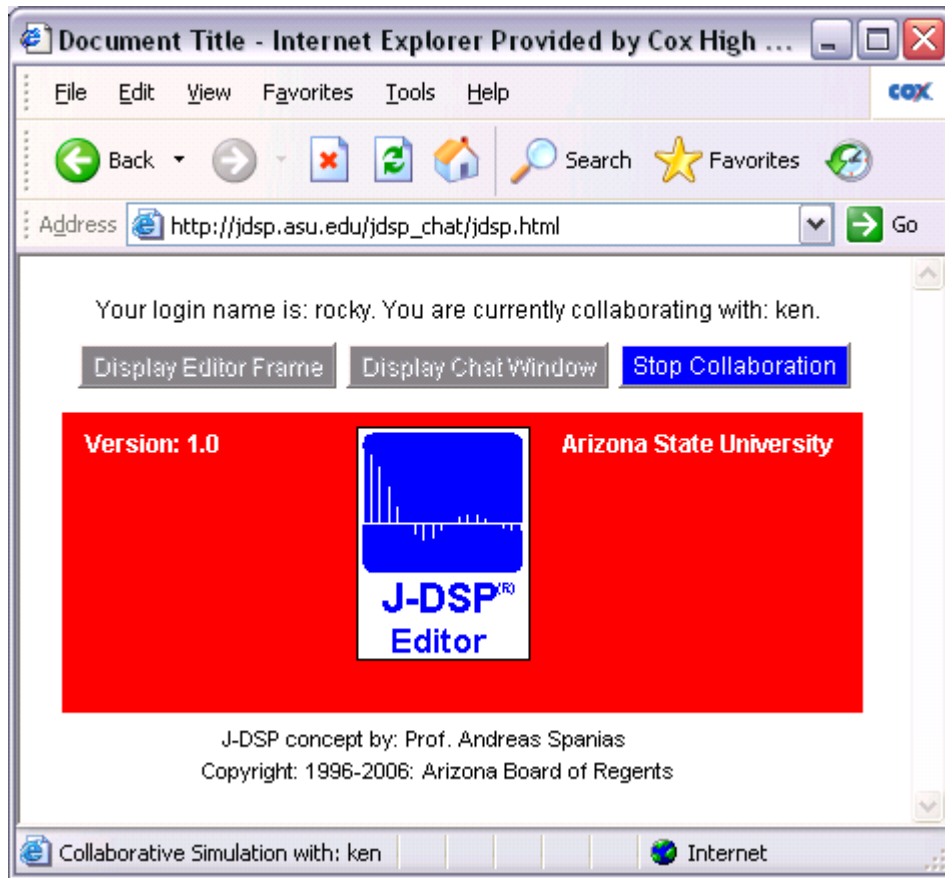


Figure 7: A sample J-DSP applet page after collaboration begins.



Figure 8: The LoadScript button in the Editor Frame.

Once the collaboration starts, the simulation environment of each collaborator is automatically sent (in the background) to the other one, every 2 seconds. However, in order to view their collaborator's simulation environment, the users have to manually click on the [LoadScript] button (every time they want the latest update). This would override the user's own simulation environment. The [LoadScript] button is available in the

editor frame window and is shown in Figure 8. It is activated as long as a user is involved in a collaborative simulation.

Collaborative simulations rely essentially on a simulation “blackboard” and generally involve transfer of a part of the simulation developed by one user to the other. The second user then updates the remaining or another part of it and transfers control back to the first user. In order to avoid confusion and to obtain the complete simulation (and not partial simulation) of the other collaborator, the users can inform each other through the chat window, when they are done with their part of the simulation. It is also recommended to check in between for any new messages in the chat window while performing a simulation.

As soon as one collaborator exits J-DSP software by closing the J-DSP applet window, the other user in the collaboration is notified by displaying a message in the status bar of his or her applet window. Also, the other user's J-DSP applet page is replaced with a latest list of users available for a collaborative simulation and the window at this point looks similar to the one shown in Figure 5. Chat windows of both the users are also automatically closed, as the users are no more involved in a collaboration.