Mango: Quick Demo

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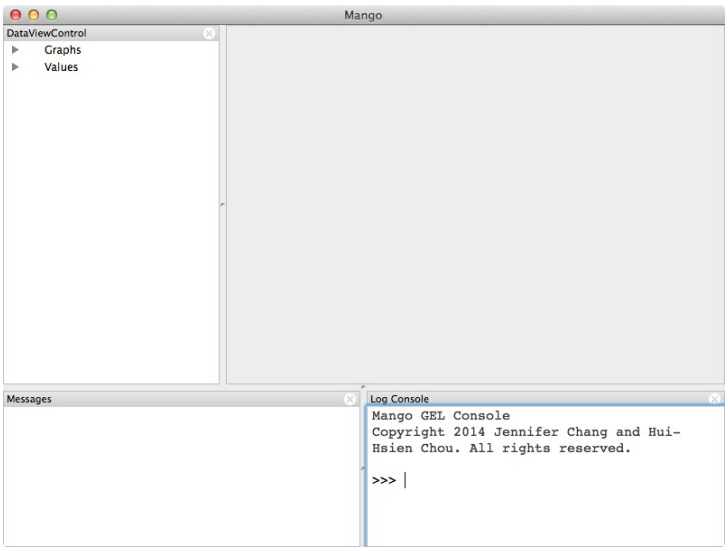
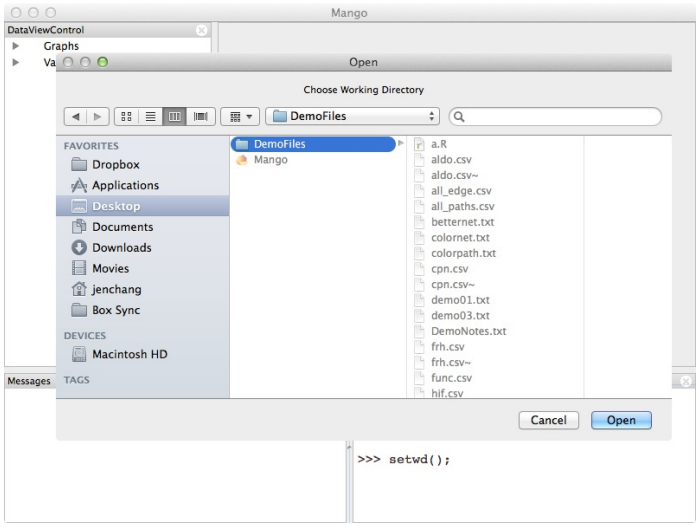
1. Open **Mango** and you should be presented with the following screen.



2. The **Log Console** (bottom right) is where you can type and execute GEL commands. All GEL commands end with a semicolon symbol. Type the following into the **Log Console** and press **Enter/Return**:

```
setwd();
```

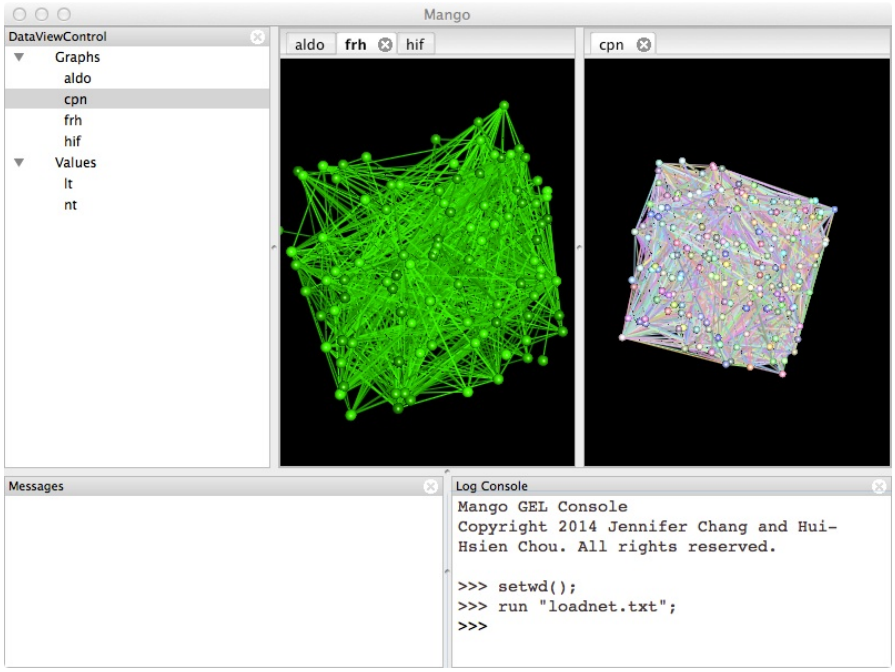
3. This command pops a window to allow you to select the current working directory. This directory may contain your graph or GEL script files. Navigate and Select the **DemoFiles** folder that came with Mango installation.



4. Now we are going to load 4 graph files. To save typing, we will be using the **run** command to execute GEL scripts saved in a plain text file. Type the following GEL command into the **Log Console**:

   ```
   run "loadnet.txt";
   ```

5. In the **DataView Control** (left), expand **Graphs** and **Values**. Four graphs are listed inside of **Graph**. Click on their names and visualizations of the selected graphs will appear in the **GraphCanvas** (right center) on separate tabs. Tabs are labeled with the graph names. You can drag and rearrange the tabs or show multiple graphs at once.



6. The **GraphCanvas** (right center) area responds to mouse and keyboard events. **Left click and drag** across a graph. This will rotate the graph visualization.

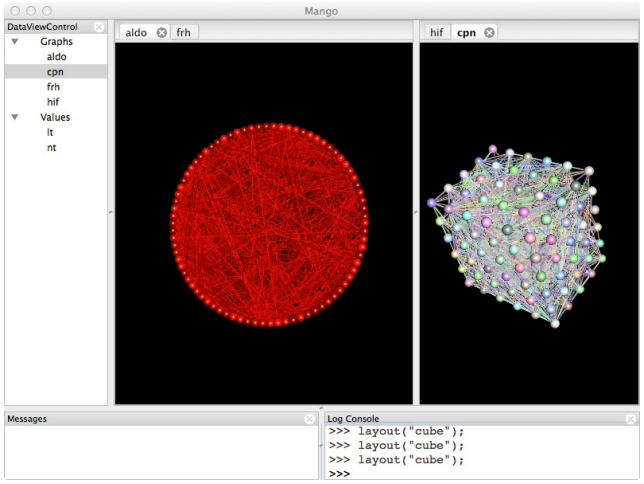
7. Use the **Roller Ball** on your mouse (or two finger swipe on a trackpad) to zoom in and out of the graph.

8. Making sure one of the graphs is selected (the tab label will be bolded) use the **arrow keys** on your keyboard to move the graph **left**, **right**, **up** and **down**.

9. Next, **Right click** on one of the displayed graphs. The graph should start to move with connected nodes moving closer together and disconnected nodes moving farther apart. This is the **force-directed layout** algorithm proposed by Eades. Right click again to stop the animating layout.

10. To explore some other graph layouts, select one of the graphs and type the following GEL commands into the Log Console. Try rotating, zooming, and running the force-directed layout after each command.

```
layout("circle");
layout("cube");
layout("random");
```



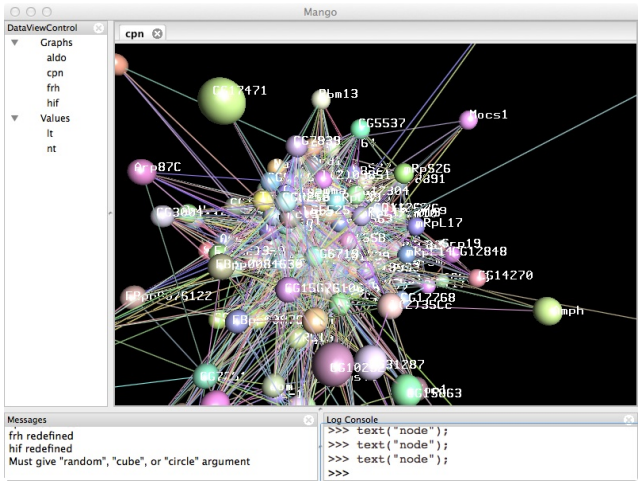
11. Close all tabs except graph **cpn**. Run the following command:

```
layout("cube");
```

Right-click to start the force-directed layout.

12. To turn on and off node labels type the following Gel Command into the **Log Console**:

```
text("node");
```



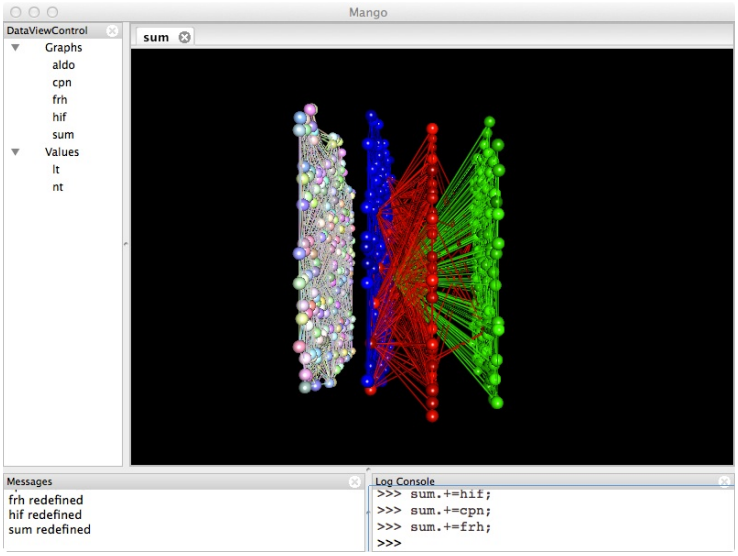
13. With the cursor after the prompt “>>>” in the **Log Console**, use the up arrow key to remember the last command and re-execute the command in step 12 to turn labels off.

14. To combine multiple Graphs, GEL has a set of graph mathematics. Enter the following GEL commands into the **Log Console**, ignoring the comments after “//” symbols:

```
run “loadnet.txt”;          // resets original layouts
graph(nt,lt) sum = aldo;    // creates new graph sum
```

15. Click on **sum** in **DataViewControl** to display the graph. Then run the following GEL commands to add in the remaining three graphs and notice how the visualization of **sum** changes.

```
sum.+=cpn;
sum.+=frh;
sum.+=hif;
```



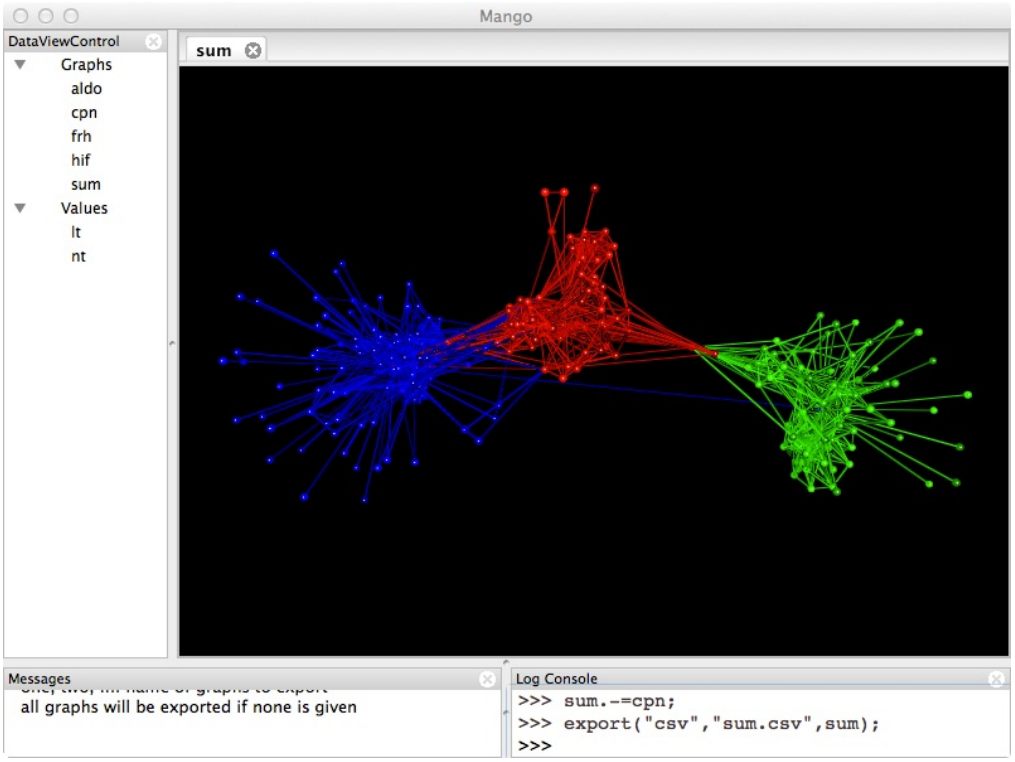
16. Notice how aldo, frh, and hif graphs are connected to one another while cpn is not. Remove cpn with the following GEL command:

```
sum.-=cpn;
```

17. Right-click sum to start the force-directed layout algorithm. Let run for a while and then stop.

18. Export the new graph file of sum with the following command:

```
export("csv", "sum.csv", sum);
```



19. The graph file **sum.csv**, located in the **DemoFiles** folder, contains the combined graph, listing nodes and links with attributes.