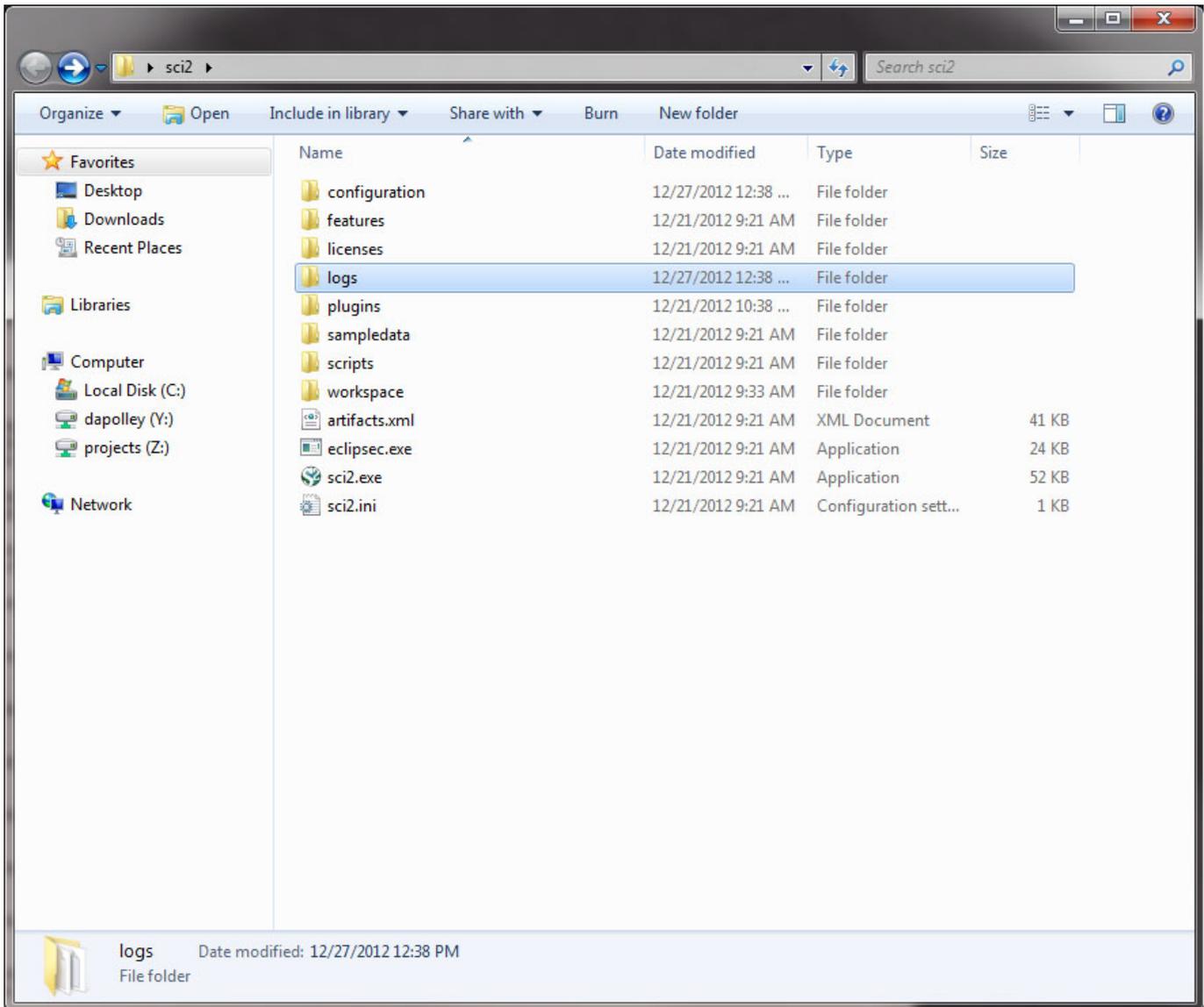# 3.7 Log Files

When a user is using Sci2, information about all the operations he or she performs will be saved in the log files. Log files are simple text documents that track all the operations performed during a Sci2 session. Each time users start the tool a new log file will be created, and Sci2 will save these log files as long as the tool is installed on the user's machine. These files will help you better understand specifically how the algorithms employed during a session are processing the data. The log files will also give a user information on who the implementer(s) and integrator(s) of the algorithms are, time and date information for algorithm executrion, algorithm input parameters, and specific information on any errors that may occur during Sci2 operation.

- Instructions on Accessing Log files in Windows and Linux OSs
- Instructions on Accessing Log files in Apple OSs
- Instructions for viewing Log files

Accessing Log files in Windows and Linux Operating Systems

To see copies of the log files open your Sci2 directory and go to the "logs" directory:


Locating Log Files on Apple Operating Systems

Users running Sci2 in Mac operating systems may take the following steps to view log files. Log files can be viewed by right clicking (control + click) on the Sci2 icon. Select "Show Package Contents" from the menu (see figure below).
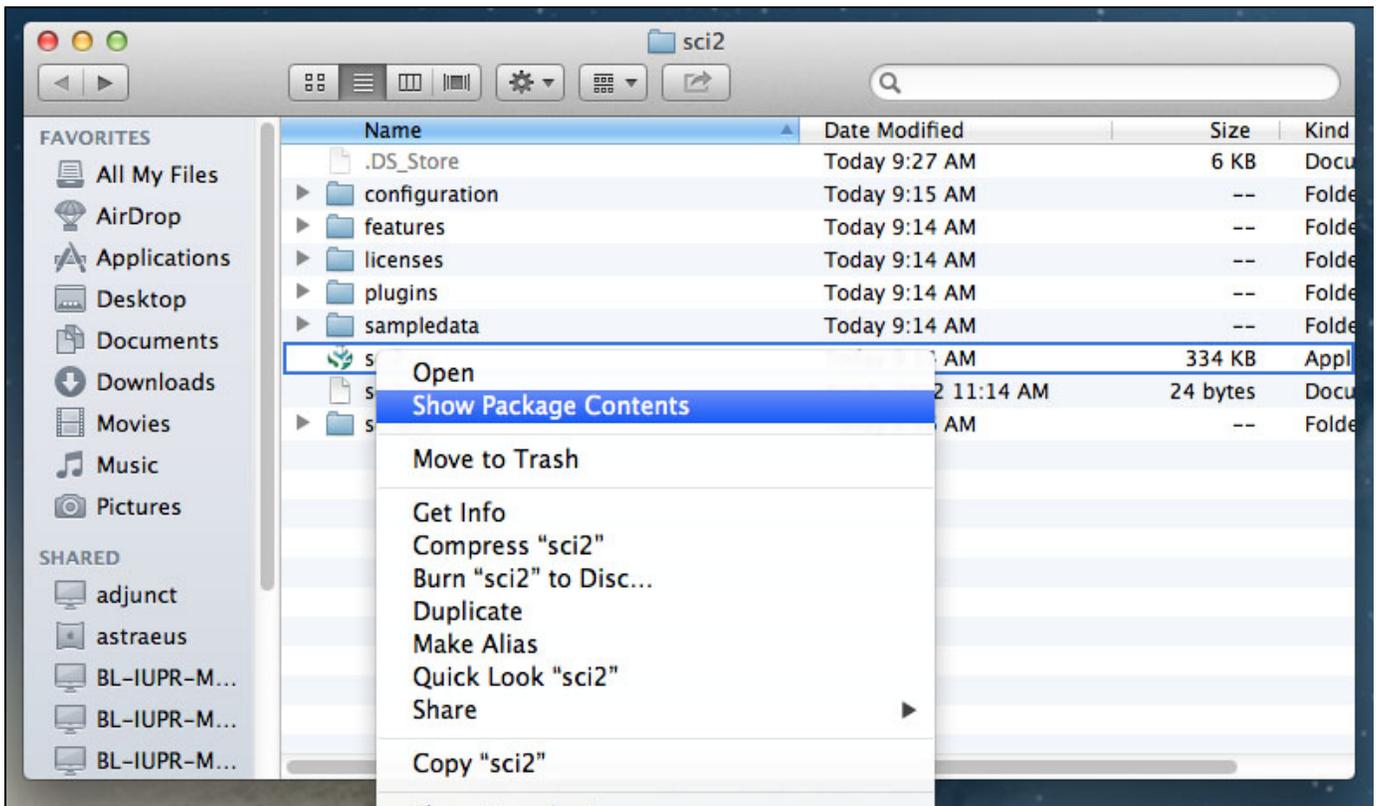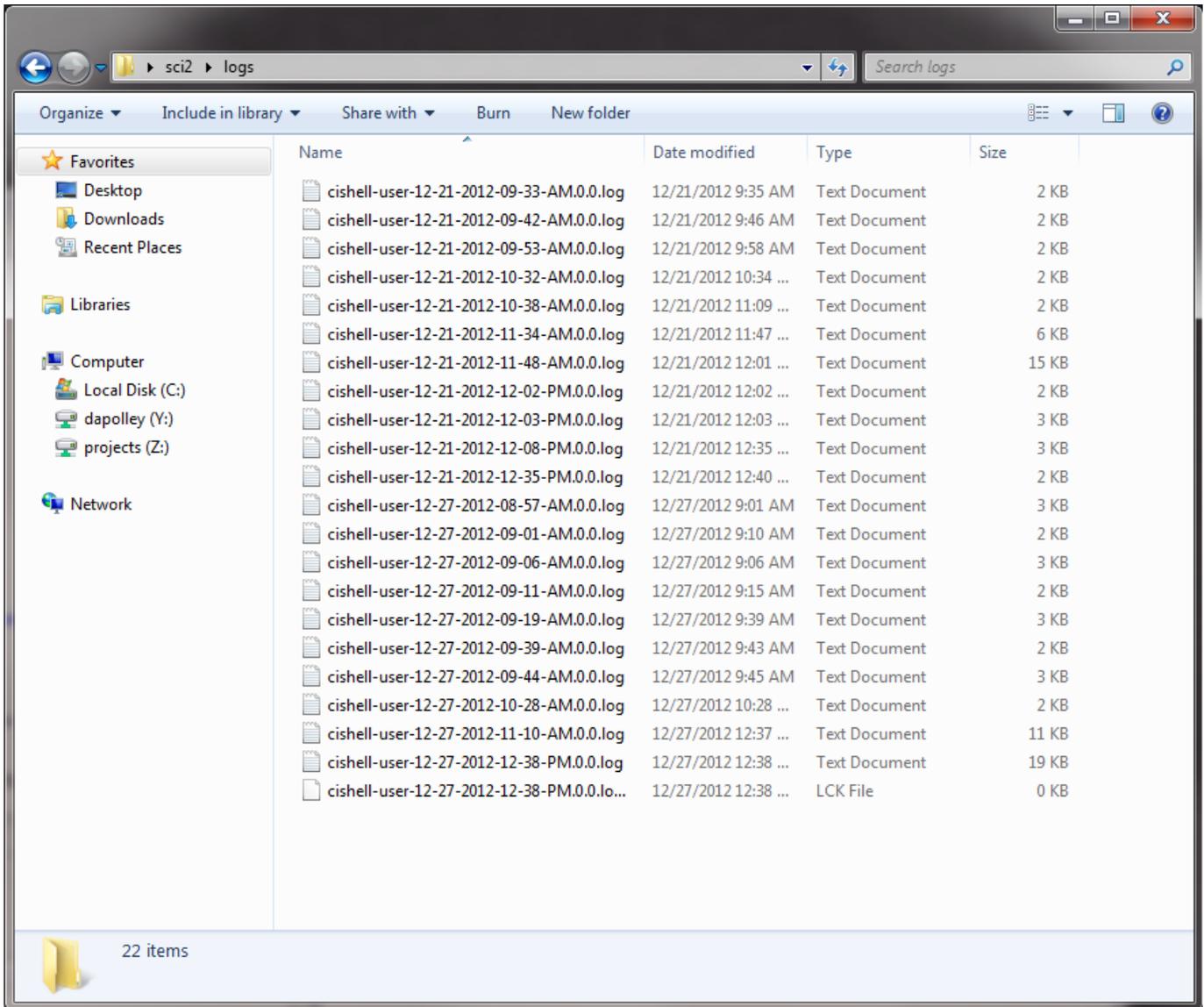
Selecting "Show Package Contents" will direct you to a new set of folders. Open the "Contents" folder in the new directory. Then select the "MacOS" folder, followed by the "logs" folder. The "logs" folder is where Sci2 log files are stored.
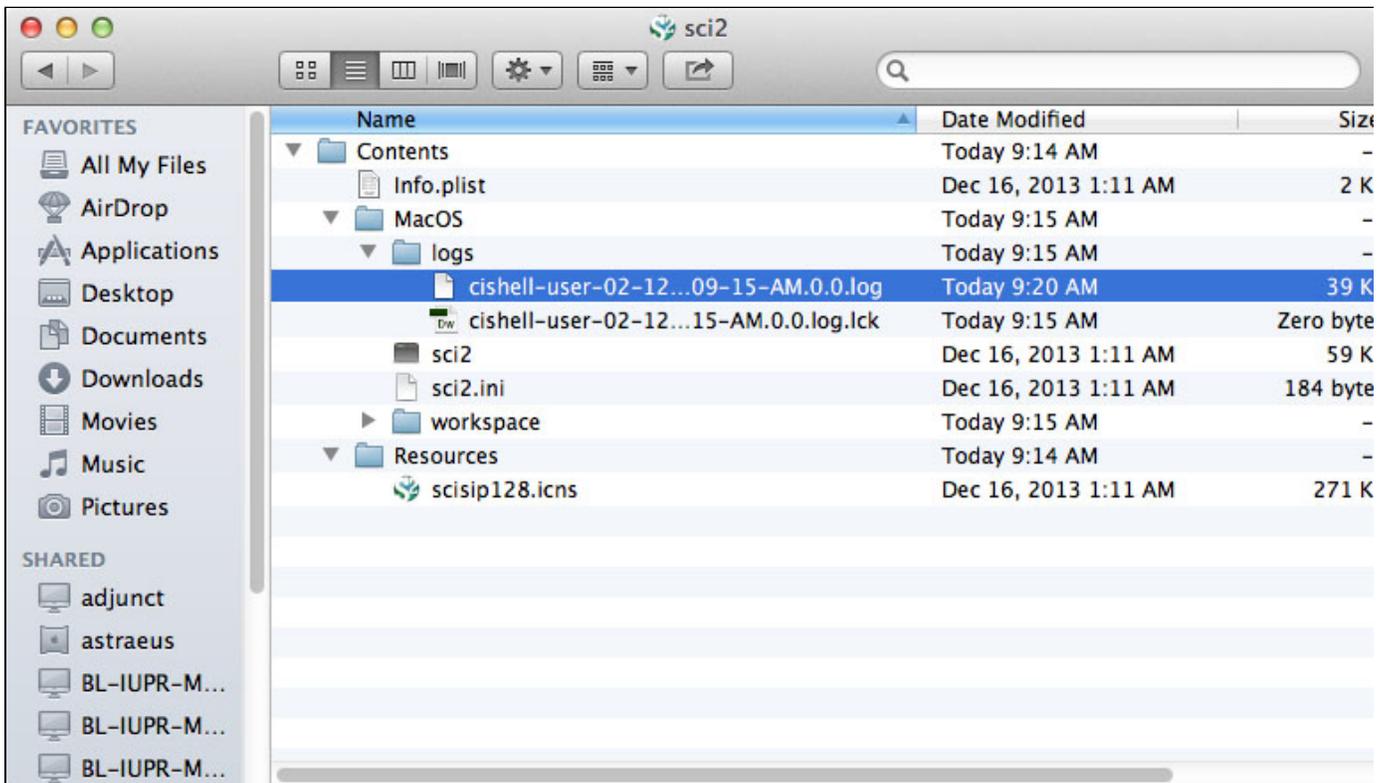
Viewing Log Files

You can select the log file for the Sci2 session you wish to examine:

Here is an example of a log file. Suppose you wanted to cite a particular algorithm that you used to process some data for a paper you are writing. The complete citation information and associated URLs for the algorithms used by Sci2 can be found directly in the log files:

File Edit Format View Help

Indiana University, the National Science Foundation under Grant No. SBE-0738111 and IIS-0715303, and the
James S. McDonnell Foundation. See the Science of Science homepage ([url]http://sci2.wiki.cns.iu.edu
[/url]) for documentation and screenshots. Please visit [url]https://sci2.cns.iu.edu/user/ask.php[/url]
if you need help with your analyses, have questions about datasets, or would like to suggest enhancements
and new features.Primary investigators are Katy Börner, Indiana University and Kevin W. Boyack, SciTech
Strategies Inc. The Sci2 tool was developed by Chin Hua Kong, Joseph Biberstine, Thomas G. Smith, David
M. Coe, Micah W. Linnemeier, Patrick A. Phillips, Chintan Tank, and Russell J. Duhon. It uses the
Cyberinfrastructure Shell ([url]http://cishell.org[/url]) developed at the Cyberinfrastructure for
Network Science Center ([url]http://cns.iu.edu[/url]) at Indiana University. Many algorithm plugins were
derived from the Network Workbench Tool ([url]http://nwb.cns.iu.edu[/url]). Please cite as follows:Sci2
Team. (2009). Science of Science (Sci2) Tool. Indiana University and SciTech Strategies, [url]
http://sci2.cns.iu.edu[/url].

Dec 27, 2012 12:38:16 PM org.cishell.reference.gui.log.LogToFile logged
INFO: Loaded: C:\Users\dapolley\Desktop\mammals.xml

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
INFO: ....Tree Map (prefuse beta) was selected.Author(s): C. Ahlberg, C. Williamson, B.
ShneidermanImplementer(s): Jeffrey Heer (Prefuse)Integrator(s): Russell DuhonReference: Ahlberg, C.,
Williamson, C. and Shneiderman, B. (1992). Dynamic queries for information exploration: An implementation
and evaluation. In Proceedings of ACM SIGCHI '92, 619-626. ([url]
http://orcs.bus.okstate.edu/jones98/treemaps.htm[/url])Documentation: [url]
http://wiki.cns.iu.edu/display/CISHELL/Tree+Map+%28prefuse+beta%29[/url]

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Starting to parse bundleentry://80.fwk6321908/OSGI-INF/metatype/METADATA.XML

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is AbstractHandler:startElement():metatype:MetaData

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is MetaDataHandler():init()

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is MetaDataHandler:startElement():OCD

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is OcdHandler():init()

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is OcdHandler:startElement():AD

Notice that the log files also display the URL for where the algorithm is documented on the CIShell site:

File   Edit   Format   View   Help

```
derived from the Network Workbench Tool ([url]http://nwb.cns.iu.edu[/url]). Please cite as follows:Sci2
Team. (2009). Science of Science (Sci2) Tool. Indiana University and SciTech Strategies, [url]
http://sci2.cns.iu.edu[/url].

Dec 27, 2012 12:38:16 PM org.cishell.reference.gui.log.LogToFile logged
INFO: Loaded: C:\Users\dapolley\Desktop\mammals.xml

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
INFO: ..........Tree Map (prefuse beta) was selected.Author(s): C. Ahlberg, C. Williamson, B.
ShneidermanImplementer(s): Jeffrey Heer (Prefuse)Integrator(s): Russell DuhonReference: Ahlberg, C.,
Williamson, C. and Shneiderman, B. (1992). Dynamic queries for information exploration: An implementation
and evaluation. In Proceedings of ACM SIGCHI'92, 619-626. ([url]
http://orcs.bus.okstate.edu/jones98/treemaps.htm[/url])Documentation: [url]
http://wiki.cns.iu.edu/display/CISHELL/Tree+Map+%28prefuse+beta%29[/url]

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Starting to parse bundleentry://80.fwk6321908/OSGI-INF/metatype/METADATA.XML

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is AbstractHandler:startElement():metatype:MetaData

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is MetaDataHandler():init()

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is MetaDataHandler:startElement():OCD

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is OcdHandler():init()

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is OcdHandler:startElement():AD

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is AttributeDefinitionHandler():init()

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is AttributeDefinitionHandler():finished()

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is OcdHandler:startElement():AD
```

When an error occurs, the event is detailed in the log file:

cishell-user-12-27-2012-12-38-PM.0.0.log - Notepad

File Edit Format View Help

```
FINEST: Here is DesignateHandler():finished()

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: Here is MetaDataHandler():finished()

Dec 27, 2012 12:38:20 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: edu.iu.nwb.visualization.prefuse.beta.treemap.TreeMap has an invalid metatype id:
edu.iu.nwb.visualization.prefuse.beta.treemap.TreeMap
Exception:
java.lang.IllegalArgumentException: Object Class Definition ID not found
edu.iu.nwb.visualization.prefuse.beta.treemap.TreeMap.
Dec 27, 2012 12:38:28 PM org.cishell.reference.gui.log.LogToFile logged
INFO: .........Tree View (prefuse beta) was selected.Author(s): C. Buchheim, M. Jünger and S. Leipert
Implementer(s): Jeffrey Heer (Prefuse)Integrator(s): Russell DuhonReference: Buchheim, C., Jünger, M.,
and Leipert, S. (2002) Improving Walker's Algorithm to Run in Linear Time. Graph Drawing. ([url]
http://citeseer.ist.psu.edu/buchheim02improving.html[/url])Documentation: [url]
http://wiki.cns.iu.edu/display/CISHELL/Tree+View+%28prefuse+beta%29[/url]

Dec 27, 2012 12:38:28 PM org.cishell.reference.gui.log.LogToFile logged
FINEST: edu.iu.nwb.visualization.prefuse.beta.treeview.TreeView has an invalid metatype id:
edu.iu.nwb.visualization.prefuse.beta.treeview.TreeView
Exception:
java.lang.IllegalArgumentException: Object Class Definition ID not found
edu.iu.nwb.visualization.prefuse.beta.treeview.TreeView.
Dec 27, 2012 2:28:09 PM org.cishell.reference.gui.log.LogToFile logged
INFO: .........Load... was selected.Documentation: [url]http://wiki.cns.iu.edu/display/CISHELL/Data
+Formats[/url]

Dec 27, 2012 2:28:21 PM org.cishell.reference.gui.log.LogToFile logged
INFO: Found old-style ISI/Web Of Knowledge file.

Dec 27, 2012 2:28:21 PM org.cishell.reference.gui.log.LogToFile logged
INFO: Found old-style ISI/Web Of Knowledge file.

Dec 27, 2012 2:28:21 PM org.cishell.reference.gui.log.LogToFile logged
INFO: Found old-style ISI/Web Of Knowledge file.

Dec 27, 2012 2:28:21 PM org.cishell.reference.gui.log.LogToFile logged
INFO: Found old-style ISI/Web Of Knowledge file.

Dec 27, 2012 2:28:22 PM org.cishell.reference.gui.log.LogToFile logged
```

As you can see the log file provides a lot of information that can be valuable to users. Not all of the data recorded in the log file will be easily understood by the average user, but it is a good place to look for more detailed information on error messages. The log files are also useful to for recreating workflows from previous sessions, since all the algorithm input parameters will be saved in the log file. For instance, say that a user wishes to see, step-by-step, how to recreate a visualization that was originally made months ago. Using the log files, he or she will be able to see specifically what algorithms were used to process the data and what parameters were provided to end up with the visualization. In this way, the log files automatically document workflows for future replication.