## **Running the Built-in Examples**

JAS3 has a number of built-in example programs that show how to use the AIDA interfaces. They are currently available in three languages:

- Java compiled code
- Pnuts scripting languageJython scripting language

To run the examples start JAS3, and from the welcome page follow the *examples* link. (If the welcome page is not automatically displayed use the icon to display it).

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	😵 Welcome ×
	Welcome to JAS3!
	JAS3 v0.8.0 (build 1214 on March 15 2005)
	Welcome to this release of JAS3 an <u>AIDA</u> compliant data analysis system. See the <u>release notes</u> for recent changes. For a quick start with scripting and programming see the <u>examples</u> .
	For more detailed instruction point your browser to our JAS3 tutorial at:
	http://jas.freehep.org/jas3/Tutorial/
	We are very interested in your feedback. You can submit bugs or requests for enhancements using our bug database at:
	http://bugs.freehep.org/secure/BrowseProject.jspa?id=10000
	we also have a bulletin board set up for discussion of JAS related issues at:
	http://forum.freehep.org/
	JAS3 consists of many plugin modules which work together by using a set of JAS3-provided services to produce the overall functionality of the system. Not all of the planned modules are available yet, so functionality will increase rapidly with forthcoming releases as more modules are completed and included (see <u>planned features</u> ).
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From the examples page you can select the language you prefer.

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	The following example sets are installed:
	Java Examples AIDA examples written in the Java language
	Python Examples AIDA examples written in the Python scripting language
	Pnuts Examples AIDA examples written in the pnuts scripting language
	Most of these examples can also be run in batch mode by using JAIDA directly (see release notes at http://java.freehep.org/jaida).

## Pnuts and Jython

Follow the Pnuts Example link to get to the list of examples (the following instructions also apply to Jython)

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	JAS3 examples	
	These examples are written using	g the Pnuts scripting language. To open an example click on the
	hyperlink below, then choose "R	un" from the editor's pop-up menu to run them. For more
	information see the AIDA User's	Guide.
	CreateAndPlotHistograms.pnut	Simple example of creating histograms and plotting them.
	Fit.pnut	Fits a plot using two different fitters, and compares the result.
	CreateAndFitDataPointSet.pnut	Creates an IDataPointSet and then fits it.
	HistogramArithmetic.pnut	Examples of performing histogram arithmetic
	Cloud.pnut	Simple use of "Clouds" (unbinned histograms)
	Tuple.pnut	An example of creating and manipluating an NTuple
	ComplexFit.pnut	A more complicated fitting example
	ScansAndContour.pnut	Create scans and contours
	AccessDataOnMasterTree.pnut	This example shows how to access data on the master tree.
	Style1D.pnut	Simple example to set basic styles for 1D plots.
	Style2D.pnut	Simple example to set basic styles for 2D plots.
	Styles.pnut	This example gives an overview of the available styles on a plot.
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Choose one of the examples from the above list (in the picture below we chose CreateAndPlotHistograms.pnut).

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<pre>/ use("pnuts.lib") //// use("pnuts.lib") ///// AnalysisFactory = class hep.aida.lAnalysisFactory ///// af = lAnalysisFactory:create() ///// tree = af.createTreeFactory().create() ////////////////////////////////////</pre>	
34 for (i=0: i<100000: i++)	<u>~</u>
Pnuts version 1.0 (20041107025532)	A y
classpath:/org/freehep/jas/extension/pnuts/web/examples/CreateAndPlotHistograms.pnut	13.9/16.8MB

Running the Pnuts or Jython examples is very straightforward: either use the *File*, *Run* menu item or use the *Run* item in the editor's popup menu, or just use the F2 key.



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tory = class hep.aida.lAnalysisFactory sFactory::create()

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'/Histogram	🕪 Rur	n Script F2	
tograms")			
eHistogram	n1D("Histo	gram 1D",	50,-3,3)
eHistogram	12D("Histo	gram 2D",	40,-3,3,40,-3,3)
'/Clouds")			
uds")			

Each time you run a script a new Pnuts or Jython interpreter a console window is created. Once the script has completed you can type additional commands into the console to interrogate or operate on the objects created by the script. (You can also create a new interpreter console without first running a script by using the *File*, *New*, *Pnuts Console* or *Jython Console* menu item.).



## Java

Running the Java examples is very similar to running the Pnuts or Jython scripts. As before you click on the file to open it in the editor, but in the case of Java you have to compile the code before you can run it. To compile a Java example use the *File*, *Compile* menu item or right click on the script and then select *Compile* or just use the F9 key.

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hep.aida.\*; java.util.Random;

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stogram1D h1 = histogramFactory.createHisto

ndom r = new Random();

One thing worth mentioning is that the examples are pure AIDA. This means that they do not depend in anyway on JAS3, you can use the exact same code outside of JAS3 provided you have set up your AIDA environment correctly.

Why do we support both scripting and Java when the examples look very similar and have basically the same functionality? The compiled Java code is more efficient that the equivalent script, it runs perhaps 10x faster. But the scripts are more suitable for experimenting with the AIDA objects, since you can type commands and see the results immediately. Fortunately any Java object can be easily manipulated from the scripting language, so we expect people to use some combination of the two, with the stable, time-critical components implemented in Java and the experimental parts in Pnuts. In the future we hope to support automatic translation from Pnuts -> Java to make the transition from Pnuts to Java easier.