How EASE unleashes the scientific power of Airbus' engineers in Eclipse

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A world of Flight Physics

Capabilities & Research
Handling Qualities

Mass Properties
Aerodynamics

Performance
Loads & Aeroelastics
"How to make engineers’ life better with Eclipse" @ ECF2014

Numerical Python libraries are widely used and powerful

Jython isn’t able to run them

How to find an easy but good way to exchange data?
A dual problem

Can we allow customization of the workbench by non-software engineers?

Can we allow them to do it in Python?
EASE ?!

Eclipse Advanced Scripting Environment

« Most innovative project » 2016
Extending Eclipse... traditional way

1. **Code**: JAVA only plug-in
2. **Test**: Separate Eclipse instance
3. **Build**: Build & Deploy plug-in
4. **Install**: Install plug-in and restart Eclipse
5. **Enjoy**
Extending Eclipse... with EASE

1. **Code**
   - Script in your preferred language

2. **Install**
   - Point EASE at script running in Eclipse instance

3. **Enjoy**
EASE Architecture

JRuby
Nashorn
Rhino

JVM languages

Jython
Groovy
...

Yours!

EASE

Git
Papyrus
SVN
Charts

Yours!

P2
JVM

UI
Env
Demo!
A really technical problem...

Jython
JyNI
JEP

Py4J

...solved by really clever guys
Let’s do some science
Providing your own modules

Register

Export functions

Use
AIRBUS Visualization
1. loadModule('/AIRBUS/Visualization')
2. loadModule('/AIRBUS/GetSource')
3. # Load the source of our data
4. csv_file = "C:\Share\ECE2017\workspace\DemoCamp\Flights\hourly.csv"
5. data_uri = "csv" + csv_file
6. loadDataSource(data_uri)
7. # Create a XY graph
8. x_uri = data_uri + "#RESULT1_SET1"
9. y_uri = data_uri + "#RESULT2"
10. trace = createTrace("RESULT2=f(R151)", y_uri, None, x_uri)
11. # Groups data by values
12. titles = ["41_230", "41_258", "41_360"]
13. values = ["22300", "22500", "22600"]
14. iso_uri = data_uri + "#Ringull"
15. gp = createGrouping(trace, iso_uri, "By Value", title)
16. activateGrouping(traces, gp)
17. # Create a filter to display only one calculation
18. filter = createFilter(trace, data_uri + "#filterFrame", gp)
19. activateFilter(filter)
20. # Retrieve numeric values for specific data
21. results_loop = readPostFile(csv_file)
22. res_values = getNumericValues(results_loop, "RESULT"
Roadmap

**EASE 0.4:** released Dec 2016

**EASE 0.5:** planned before ECE 2017
- cron jobs
- Better « magic keywords »
- Improved Script Unit Test framework

**Python integration:**
- Better Py4J integration (content assist, PyDev Pythonpath...)
- Py4J Debug support

**Future plans:**
- Support for other script locations (Git, SVN, Gerrit)
- CDT integration

http://wiki.eclipse.org/EASE
Scripting Eclipse in VBA
EASE unleashed

Delivering Eclipse APIs to Excel masters

John Doe
Questions?