First User Experiences with nViZn

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nViZn Background (1)

- See Dan Rope’s talk at 8:30am
- In short: a Java-based package for visualization on the Web
- URL: http://www.spss.com/nViZn/
nViZn Background (2)

- Based on Graphics Production Library (GPL).
Default Working Environment

- nViZn, Version 1.0.1, Sep 29, 2000
- Netscape Communicator 4.5
- Dell Inspiron 7000
- Java 2 SDK, Standard Edition Version 1.3.0 (jdk1.3)
- Equal behavior if “Norton AntiVirus 2001” is running or not
General Use: Problems

Installation on a new machine:

- Problems with jdk1.2
- Problems on SGI (Iris)
- Problems using Internet Explorer
Problems with Provided Examples

- From 18 examples, only 4 fully operational in default setting (CamCorder, AutoData, HexBin, Cluster) under VM option
- Some start, but most produce errors, e.g., AnimatedMap “Applet HelloAnimation class HelloAnimation got a security violation: method verification error”
- Most examples do not even start under plugin option, e.g., CPITimeSeries “Applet HelloCPI notinited”
Problems with Compilation (1)

How to set classpaths?

- Either in autoexec.bat
- Or in scripts:

```bash
@echo off
set JAVA_HOME=c:\jdk1.3
set JARS=c:\NSF\ccmapjar
set ILLUMITEK=c:\NSF\CCmap
set CLASSPATH=%JAVA_HOME%\lib\tools.jar
set
  CLASSPATH=%CLASSPATH%;%JARS%\dpl_client.jar;%JARS%\dpl_server.jar
  ;%JARS%\gpl_animate.jar;%JARS%\gpl_brush.jar
set
  CLASSPATH=%CLASSPATH%;%JARS%\gpl_builder.jar;%JARS%\gpl_client.jar
  ;%JARS%\gpl_filter.jar;%JARS%\gpl_manipulate.jar
set
  CLASSPATH=%CLASSPATH%;%JARS%\gpl_meta.jar;%JARS%\gpl_navigate.jar
  ;%JARS%\gpl_picker.jar;%JARS%\gpl_server.jar
set
  CLASSPATH=%CLASSPATH%;%JARS%\gpl_widgets.jar;%JARS%\tasksserver.jar
  ;%JARS%\taskclient.jar;%JARS%\ccmap.jar
```
Problems with Compilation (2)

How to compile/execute?

- Either DOS via `javac FileName.java` & `java FileName`
- Or in scripts:

Compile:
```
@echo off
echo Compiling %1
set CODE=%ILLUMITEK%\Jueplanets.java
%JAVA_HOME%\bin\javac -O -deprecation -classpath
  %CODE%\classes;.;colorxforms -sourcepath .;colorxforms %1
```

Run:
```
@echo off
%JAVA_HOME%\bin\java -cp %CLASSPATH%;colorxforms;. Jueplanets
```
Ease of Graphics

- Simple Examples from “Grammar of Graphics” can be directly implemented in nViZn
- Demo and Examples provided with nViZn sufficient for implementation of basic features
- No advanced JAVA knowledge required
Figure 1.1 Plot of death rates against birth rates for selected countries.
Example 1 (2)

//Create the Java Frame to hold the graph
Frame frame = new Frame();
frame.setSize(600, 300);
frame.setLayout(new BorderLayout());

dataView = new FlatFileDataView();
FlatFileSourceSpecification source = new
  FlatFileSourceSpecification("ourworld");
dataView.setSource(source);

//Create the Graph, set the expression, and set the graph's Title
graph = new GPLGraph();
graph.setExpression("BIRTH_RT*DEATH_RT");
graph.setTitle("Figure 1.1: Plot of death rates against birth rates for
  selected countries.");
/Layout settings
DefaultLayout layout = new DefaultLayout(false);
AxisLayout axis1Layout = layout.getAxisLayout(1);
AxisLayout axis2Layout = layout.getAxisLayout(2);

axis1Layout.setMin(0);
axis2Layout.setMin(0);
axis1Layout.setMax(60);
axis2Layout.setMax(30);

axis1Layout.setLabel("Birth Rate");
axis2Layout.setLabel("Death Rate");
graph.setFrameLayout(layout);
Points point = new Points();
point.setLayer(2);
point.setLabel("COUNTRY");
graph.addElement(point);

//Add the Path element, split by GOV$ and use a polynomial smoother
// Note, you can use:
// line.setPositionFunction(new SmoothParameters
// (SmoothParameters.LINEAR));
// for linear regression line
Path line = new Path();
SmoothParameters smoother = new
    SmoothParameters(SmoothParameters.EPANECHNIKOV);
line.setPositionFunction(smoother);
line.setColor("LIFE_EXP");
line.setDefaultSize(.01f);
graph.addElement(line);
Example 1 (5)
Example 2 (1)

Frame: distance*temperature
Scale: log(dim1, 10)
Scale: log(dim2, 10)
Graph: point(size(albedo), label(planet))

Figure 7.38 Bubble plot of planet reflectivity (albedo)
//Create the Graph, set the expression, and set the graph's Title
graph = new GPLGraph();
graph.setExpression("Distance*Temperature");
graph.setTitle("Figure 7.38: Bubble plot of planet reflectivity (albedo)." forms a whole sentence here);
...

//Log the "x" axis (dimension #1)
ScalingSpecification logx = new ScalingSpecification(1, new LogParameters());
graph.addScaling(logx);

//Log the "y" axis (dimension #2)
ScalingSpecification logy = new ScalingSpecification(2, new LogParameters());
graph.addScaling(logy);
Example 2 (3)

axis1Layout.setMin(0.1);
axis1Layout.setMax(100.0);
axis2Layout.setMin(10);
axis2Layout.setMax(1000);

axis1Layout.setLabel("Distance (AU)");
axis2Layout.setLabel("Temperature (K)");
graph setFrameLayout(layout);

Points point = new Points();
point.setLabel("Name");
point.setSize("Albedo");
graph.addElement(point);
Figure 7.38: Bubble plot of planet reflectivity (albedo).
Example 2 (5)

BUT !!!

Figure 7.38: Bubble plot of planet reflectivity (albedo).

Figure 7.38: Bubble plot of planet reflectivity (albedo)
Conclusion

Who can hide in secret places so that I cannot see them? Do I not fill heaven and earth?

*Jeremiah 23.24*

Cleave a piece of wood, I am there; lift up the stone and you will find me there.

*Gospel of Thomas 77*

God hides in the smallest pieces.

*Caspar Barlaeus*

God hides in the details.

*Aby Warburg*

God is in the details.

*Ludwig Mies van der Rohe*

The devil is in the details.

*George Shultz*

Bad programmers ignore details. Bad designers get lost in details.

*Nate Kirby*
Wishlist

- Provide precise info how to
  - Install
  - Compile/Run
  - Minimum System Requirements
  - How to set up as an Applet

- “nViZn Beginner’s Guide” desperately needed