Welcome!

- Thank you for coming!
- You are muted, so questions to KNIME Host by chat
- Links to the slides and workflows by email later.
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Course Material

- Webcast
- Data
- Example workflow
- Slides of this presentation
Goals of Today’s Course

- Why a course to leverage SAS with KNIME?
- Intro for SAS Users: KNIME
- An Example: Next Best Offer
- Package, Reusing and Surfacing to Business Users
- Where to find more examples and help

A bit of History:
The Original SAS Concept
More Products to meet new requirements

Even More Products....
Our new reality: Choice and Control

The KNIME Platform
Open, Open Source, Free on the Desktop
The question is not “which is better”

The question is: What’s the Big Difference?

SAS
A script-oriented 4GL programming language in four major parts:
• The DATA step
• Procedure steps
• A macro language, a metaprogramming language
• ODS statements

• GUIs: are most often merely front-ends to facilitate SAS Program script generation

Wiki Descriptions...

DATA wzt;
set x y z;
ods;

PROC TABULATE data= wzt;
class = education, gender;
var income;
table gender, education * N;
RUN;

KNIME
A Script-free environment comprised of
• Nodes and Connectors
• Metanodes, Flow variables and Connectors for packaging

• GUI is the interface
An Example: “Next Best Offer!”

- Accessing various data sources including social media analysis
- Consolidate and Transform the data
- Explore and Visualize the data
- Apply various predictive methods to the data
  - From various packages!
- Automatically determine the best model
- Deploy!
Accessing Data

Huge Range of Read (and write) nodes available At no cost.

Each Node has a specific dialog

SAS Data can be read with one click

Tables available at every step

Transforming data
Packaging Workflows

Drag and Mark nodes, Right Click, Choose Colapse..

To create a Metanode that can be reused

Our Example: “Next Best Offer!”

The Access and Transform Metanode we created
More Transformation

KNIME nodes for transforming (alternate to formatting)

Applying Color to Attributes

Calling your Favorite External Packages such as Java, Python, Matlab, SQL, REST, Or your favorite Database

Using SAS Transformation

Calling SAS either Locally or Remotely, Automatically passing Data into and out of SAS

Controlling how that happens with Flow Variables and Quickforms
Giving you instant Customized Dialogs

No Macro Code. No SCL. No Java. No Other Programming Language required. A Nice Dialog for many types of users.

Explore and Visualize

Many nodes For Exploring and Visualizing

All that allow Marking and highlighting across all nodes

No separate package required. Other packages can be used if available.
Be Open to All Methods, and let the best model win !!!

- KNIME Decision Tree
- KNIME Logistic Regression
- R Decision Tree
- PMML model (from SPSS)
- Other Methods
  - Weka
  - Dymatrix Uplift
  - SAS

Allow for best practices without learning scripting

- Missing Management
- Partitioning
- Binning and Bagging
- Boosting
- Logic and Flow Control
- Cross Validation
- Feature Elimination
- Feature Selection
- Error Handling
Report with your favorite Tool

Or use the built-in and Free BIRT open source BI Tool

Deploy the Models

Score any Database (including Hadoop)

Use the PMML on another system (Such as ADAPA)

Or how about scoring straight into SAS via SQL and the (commercial node!) from Dymatrix?
Deploy to Excel..... Or directly back to SAS!

SAS Transport Dataset

Deploy: Types of Users

- Wrap new nodes
- Wrap legacy software

Developers

- Develop workflows
- Provide templates

Power Users

- Modify templates
- Run parameterized workflows

Business Users

- Launch workflows
- Create reports

Business Consumers

- Consume Reports
- Exception Notification

Management
Power Users in Teams
The KNIME Server (Commercial Software)

Embedding, Automating, Security
The KNIME Server (Commercial Software)
Business Consumers via the web
The KNIME Server (Commercial Software)

When to use KNIME?

New Data Sources
New Methods Required
New Approaches
New User Groups
Hot Topics

New Money required for Extensions ????????????????
Hot Topics with KNIME (and SAS!) users:

- Social Media Analysis
- Recommendation/Next Best Offer/Market Basket/etc. Analysis
- Text Mining
- Network Analysis
- Realtime
- Machine Learning
- Making R Usable
- Big Data
- Data Mining Automation with DYMATRIX DynaMine
- Campaign Optimization with DYMATRIX DynaCampaign

Hot Topics: Customer Risk
Hot Topics: Network Analysis

Hot Topics: Text + Network Mining
Hot Topics: Recommendation Engine

Hot Topics: Realtime Scoring
Hot Topics: Big Data

Define Hive Tables / Views

Logfiles.gz

How to start with KNIME?

- Download and install KNIME
- Download and install the needed (FREE!) Extensions
- Read the Intro to SAS Users Book (FREE!)
- Download and install this example (FREE!)
- Download and install other examples (FREE!)
- Enjoy being FREE to choose...
For this example to work:

Install KNIME
Install R Extension (via KNIME Pulldown)
Install SAS7Bdat Extension (via KNIME Pulldown)
Install extra R Extension SASxport.
Import Workflow
Place all data in c:\data

Pay For SAS (if you want to use it with KNIME).

Further Resources

- KNIME for SAS Users (weblink...)
- KNIME pages (www.knime.org)
  - APPLICATIONS for example workflows
  - RESOURCES with links to a number of resource pages, like downloads, updates, documentation, ...
- KNIME Tech pages (http://tech.knime.org/)
  - FORUM for questions and answers
  - DOCUMENTATION for documentation, FAQ, changelogs, ...
  - LABS where to find new experimental nodes
  - COMMUNITY CONTRIBUTIONS for development instructions and third party nodes
- KNIME TV channel on YouTube
Thank you

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