ENTERPRISE MINER: MODEL SCORING AND DEPLOYMENT
• SAS – 13th September 2016
• Enterprise Miner: Model Scoring and Deployment
• The session looks at:
  - Model Package Creation
  - Registering Models to Metadata
  - Scoring Data
  - XML Versioning
THE ANALYTICS LIFECYCLE

PREDICTIVE ANALYTICS AND DATA MINING

IDENTIFY / FORMULATE PROBLEM
DATA PREPARATION
DATA EXPLORATION
TRANSFORM & SELECT
BUILD MODEL
VALIDATE MODEL
DEPLOY MODEL
EVALUATE / MONITOR RESULTS

BUSINESS MANAGER
Domain Expert
Makes Decisions
Evaluates Processes and ROI

BUSINESS ANALYST
Data Exploration
Data Visualization
Report Creation

IT SYSTEMS / MANAGEMENT
Model Validation
Model Deployment
Model Monitoring
Data Preparation

DATA MINER / STATISTICIAN
Exploratory Analysis
Descriptive Segmentation
Predictive Modeling
THE ANALYTICS LIFECYCLE

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SEMMA IN ACTION – REPEATABLE PROCESS
• Enterprise Miner Model Package
  • Document a data mining project
    • Including optimized score code, an image of the process flow and the logs and results from each node
  • Share results with other analysts
  • Recreate a project at a later date.

• After you run a modeling node, there are a number of ways to export the contents of your model.
  1. Right-click the node and select Create Model Package from the list
  2. Click the node and select the Create Model Package action button
  3. Click the node and select Actions => Create Model Package from the main menu.
You are prompted to enter a name for the model package when you select **Create Model Package**.

Choose a name which meaningfully describes either the function or purpose of the process flow or modeling tool.

After you run a modeling node, there are a number of ways to export the contents of your model.

By default, model packages are stored within the Reports subdirectory of your project directory. The folder is named by a combination of the name that you specified when you saved the model package and a string of random alphanumeric characters.
• Model packages are also listed in the project panel.
• Model package folders contain the following files:
  1. **miningresult.sas7bcat** — SAS catalog that contains a single SLIST file with metadata about the model.
  2. **miningResult.spk** — the model package SPK file.
  3. **miningResult.xml** — XML file that contains metadata about the modeling node. This file contains the same information as miningresult.sas7bcat.
• Right-clicking on a model package in the project panel allows one to perform several tasks with the model package: open, delete, register, recreate the diagram, and save as another package.
• The model package contains the diagram, logs, results and data information created by the analyst for auditing purposes.
MODEL SCORING AND DEPLOYMENT

PROJECT FOLDER DATA

• Detailed level: EM creates a folder for each diagram containing information on each node in a flow (log, properties, score code) within the project directory on the server.

• Summary level: The EM_HISTORY data table automatically logs and timestamps any user changes made to the project.
REGISTERING A MODEL TO METADATA
• In the project panel, right click on the model package created above and select Register.
• Click on the Description tab and type in a description. Click the Details tab to show what additional metadata is saved with the model registration.
• Once registered, the model can be shared with any other data miners in the organization who have access to the model repository.
Once the model package has been registered in EM the model can be used to score new data using the Model Scoring task in EG:

- First load the data you wish to score into EG then click the Model Scoring Task under Tasks => Data Mining.
- In the scoring model screen select Browse and locate the folder the Model Package was registered to.
- Follow the steps and make sure you correctly map the variables in the model package to those in the data you wish to score.
- You can also determine the output data columns to be produced once the model scoring process has run.
- Click Finish and a data table of your scored data will be produced.
XML VERSIONING
At any stage of the model build, analysts can save their development flow as an XML file. By creating a new versioned XML for each iteration, all property settings, node connections and the process flow itself are retained.
1. To create an XML file RMB the diagram name and select **Save As**…

2. Save the XML in a location accessible on the server
3. Once an XML version of the model has been created users can import this XML as a new diagram iteration.

4. All the settings will be retained in the process flow creating a baseline for further analysis.
• Inbuilt auditing capabilities
• Functionality to share model packages
• Ability for other teams to access models through metadata
• XML files can be used as best-practice templates and for version control