

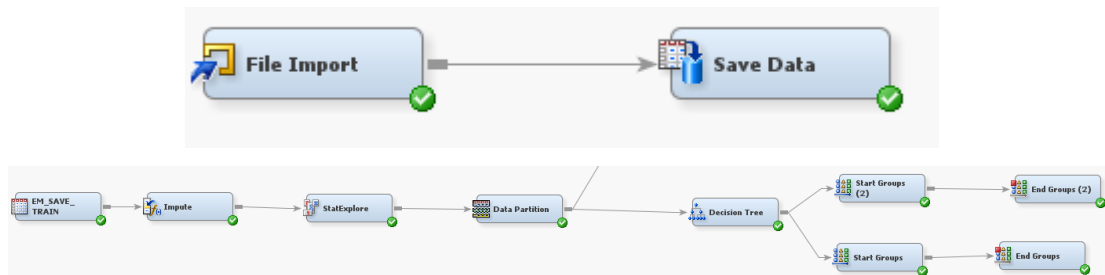
# Reflections or Learning Outcomes

## Deliverables:

A report detailing each step of the process, including the rationale behind your choices and any challenges faced.

An analysis of the decision tree and ensemble methods, with insights into customer behavior and suggestions for business strategy.

[5 marks]



Step1:

Import the dataset into Talend Data Preparation

Use the mode to fill in missing values.

Step2:

Import the original data set through the import file node, and then save it as a sas file format.

Step3:

Create data source and load data source.

Step4:

Perform exploratory analysis of data in SAS Miner by importing the StatExplore node.

Step5:

Process missing values in SAS Miner, import the Impute node, and use the mode to fill in the missing values.

Step6:

Split the data according to 70 (training) :30(validation).

Step7:

Configure decision tree parameters and run decision tree node.

Step8:

View the results of a decision tree run.

Step9:

Apply Bagging and Boosting, using the Random Forest algorithm.

Step10:

View the results of a Bagging and Boosting, using the Random Forest run (by start groups and end groups).

Challenges faced:

1、I don't know how to change the missing values for the classification problem in sas miner, and finally found the solution.  
2、Regarding question 3, I am not very sure how to solve this problem with Apply Bagging and Boosting, using the Random Forest algorithm. I have tried many methods, but I don't know which one is the correct solution.

**insights into customer behavior:**

Can help identify customer groups most likely to be satisfied or dissatisfied, allowing companies to target specific improvements or marketing campaigns to these groups.

Satisfaction is linked to specific buying patterns, consumption habits or customer feedback, allowing targeted improvements to products and services.

**suggestions for business strategy:**

Personalize marketing messages and promotions based on customer satisfaction levels and purchasing behavior.

Improve service processes based on factors that lead to dissatisfaction.

Pay more attention to and analyze customer feedback, understand the specific reasons for customer dissatisfaction, and take measures to solve these problems.