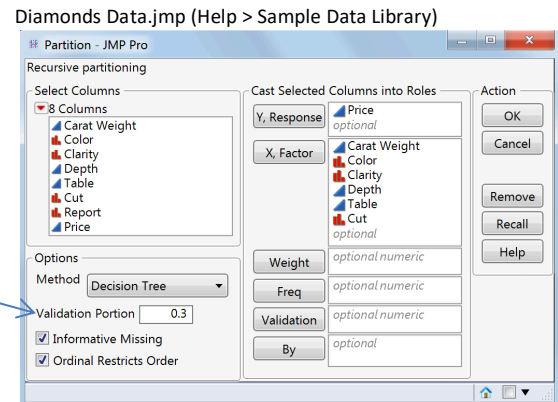


# Regression Trees (Partition)

Use this data mining technique to predict a numeric (continuous) response as a function of potential predictor variables using recursive partitioning.

## Regression Trees

- From an open JMP® table, select **Analyze > Predictive Modeling > Partition**.
- Select a continuous response variable from **Select Columns** and click **Y, Response**.
- Select explanatory variables and click **X, Factor**.
- If desired, enter the **Validation Portion** (a proportion, as shown) or select a validation column and click **Validation** (JMP Pro only).
- In **JMP Pro only**, select the tree **Method: Decision Tree** (the default), **Bootstrap Forest**, **Boosted Tree**, **K Nearest Neighbors**, or **Naive Bayes**.
- Click **OK**. JMP displays:
  - A graph with lines drawn at the overall mean response value.
  - Statistics for the training and validation set(s). Note that results will vary if **Validation Portion** is used.
  - A summary of **All Rows**. Click on the **gray triangle** next to **Candidates** to view split statistics.



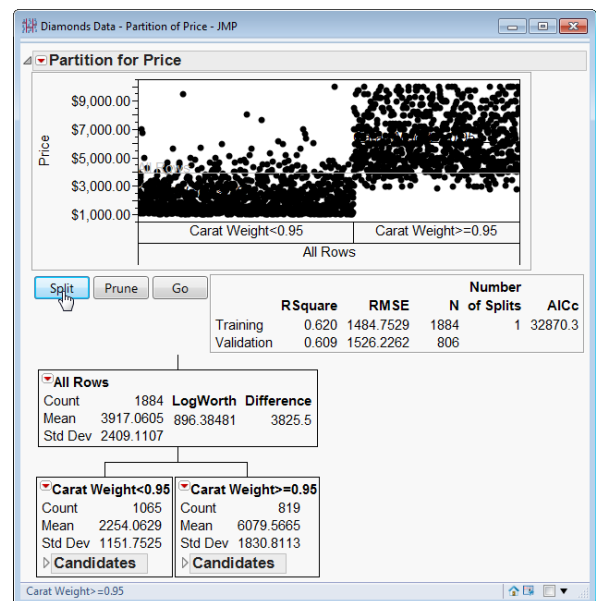
- Click the **Split** button. The original observations will be split into two nodes, or leaves (as shown).

In the top graph, horizontal lines are drawn at the mean response within each leaf and vertical lines depict the leaf's relative size.

Interpretation (in this example the response is Diamond Price in \$):

- In the left leaf there are 1,065 rows with Carat Weight < 0.95. The mean cost of these diamonds is \$2,254.06.
- In the right leaf there are 819 rows with Carat Weight >= 0.95. The mean cost of these diamonds is \$6,079.57.

- Click **Split** to make an additional split. Click **Prune** to remove a split. If a validation portion or validation column is used, click **Go** to perform automatic splitting.



Notes:

For additional options, such as **Leaf Report**, **Small Tree View**, **Column Contributions**, click the **top red triangle**. Other options, such as **Save Prediction formula** and **Make SAS® DATA Step**, are available from the **top red triangle > Save Columns**. For split options for a particular node, click on the **red triangle for that node**.

For more information on fitting and evaluating regression trees, including **Validation**, **Bootstrap Forest** and **Boosted Trees**, see the book *Predictive and Specialized Models* book (under **Help > Books**) or search for "partition trees" in the JMP Help.