

M4L8. Software for Decision Trees

Slide #1



In this topic, I will show you how to install and use an Excel add on that allows you to build and solve decision trees.

Slide #2

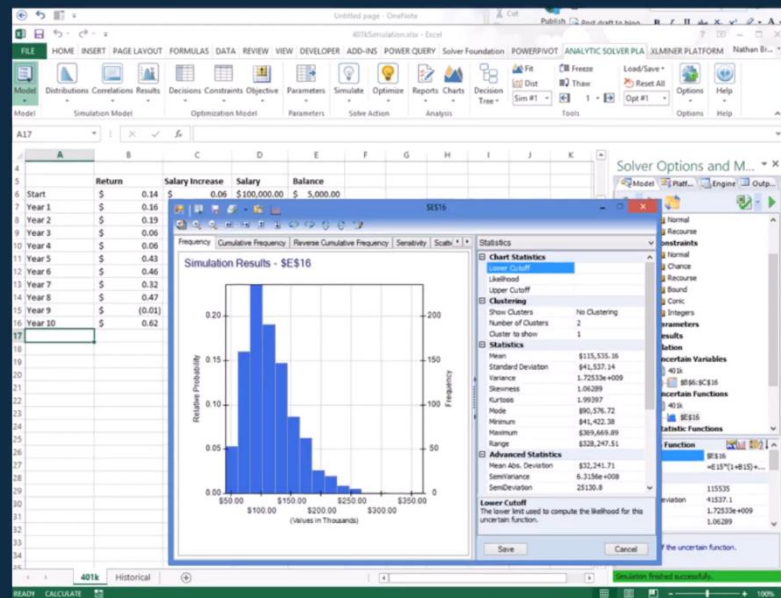
Analytic Solver

Handles conventional optimization problems.

Includes a decision tree function.

Other decision support programs.

Visit web site
for further
information



We recommend Analytic Solver to help build and solve decision making trees.

Analytic Solver optimization handles conventional optimization problems. It includes decision tree function.

We will also use it for optimization decisions in later parts of this course.

There are other decision support programs.

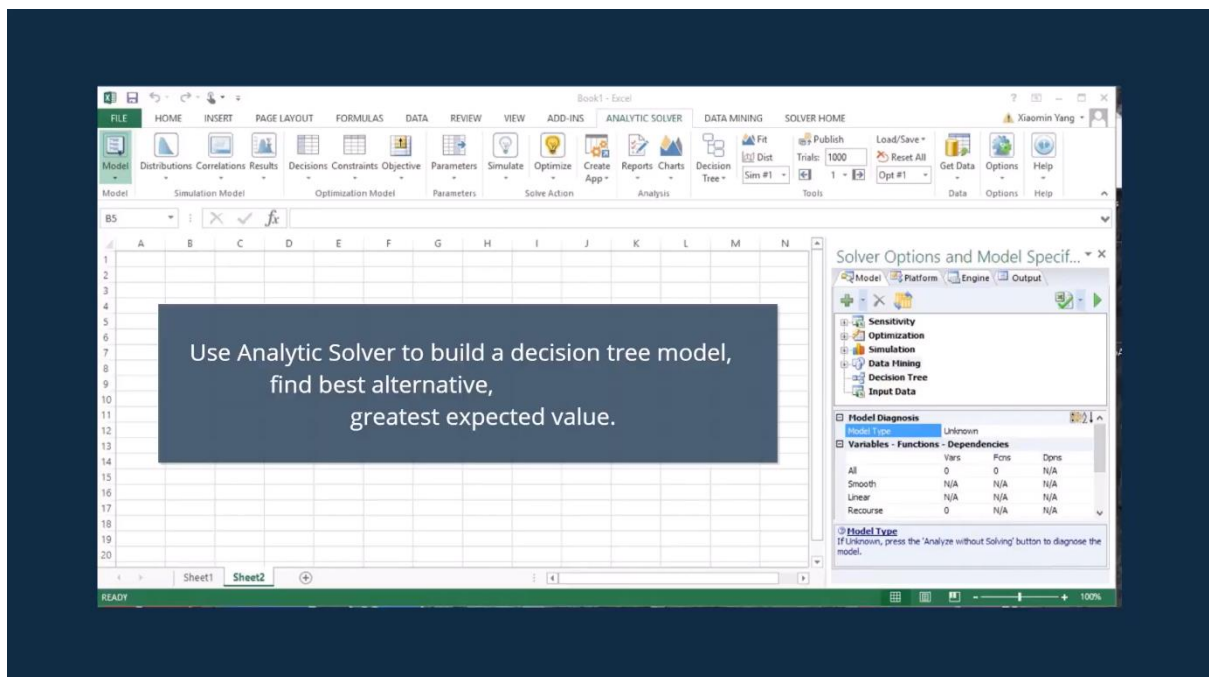
We are not endorsing Analytic Solver.

Please feel free to use other programs if you want.

Install Analytics Solver as an Excel add-on on your computer.

Please watch this YouTube video about Analytics Solver and its Excel interface.

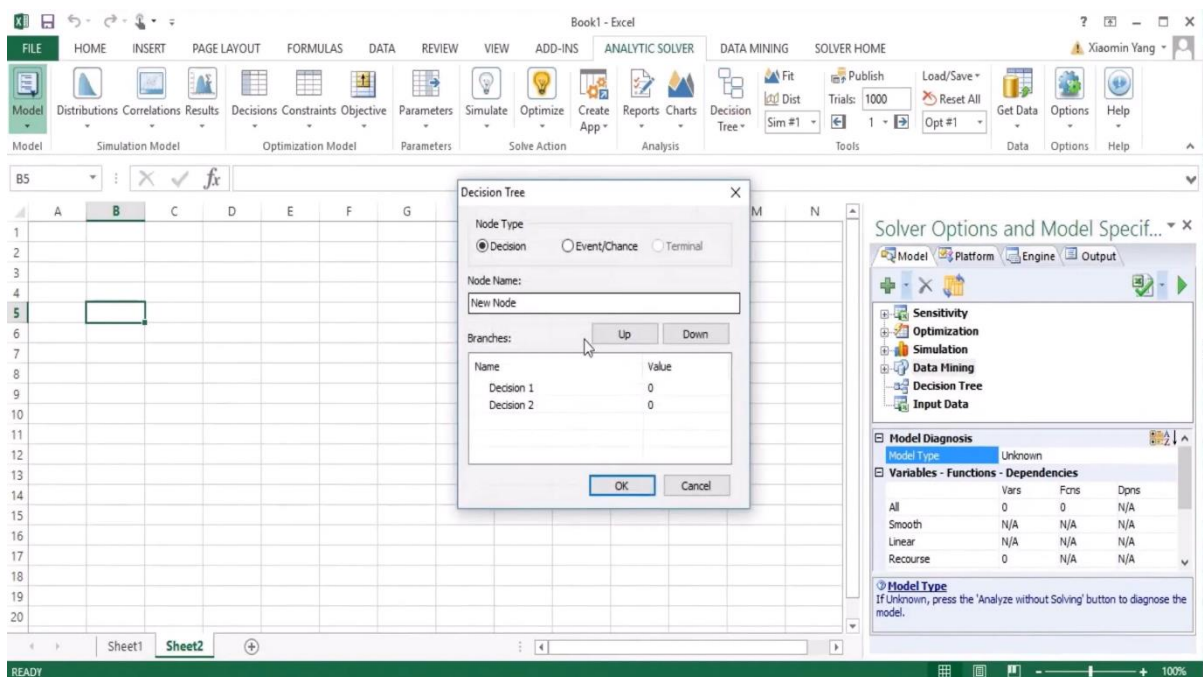
Slide #3



Now, I am showing you how to use Analytics Solver to build a decision tree model and find the best alternative.

That gives you the greatest expected value.

Slide #4



To build a decision tree, go to the decision menu, click add node and input the name of your decision node.

Give names to two of your decisions.

The first one is to launch the product.

The second one is to cancel the product.

Input the value of each decision.

Launch the product generates five million dollars profit.

Click OK.

The analytic solver creates the decision tree for you.

It has one decision node, two branches, and two terminal nodes.

The payoff of your launch product decision is in the spreadsheet cell.

The expected value of your decision is also in the Excel, the cell B10.

You can also find the variables of your decision in the model window, decision node, branches, and terminal nodes.

We can add a marketing campaign node to the product launch decision tree.

Click Node. Add Node is the decision node, and name it.

Name the two decisions, Aggressive Marketing, with a cost of 850, 000.

Second is No Marketing, with cost nothing.

You can see the Marketing decision node is added in front of the Product Launch decision node.

We will launch a product with and without marketing.

So, we will copy the decision node of Product Launch and paste it to the terminal of No Marketing branch.

We need to change the value of product launch with marketing from 5 million to 7 million.

To solve the tree, highlight the best.

The green part is the decision that gives us the highest expected value.

Launch a product after aggressive marketing will give us a net profit of 6,150,000.

Now the decision problem is solved and all decision-making variables are in a model window at the right side of this interface.

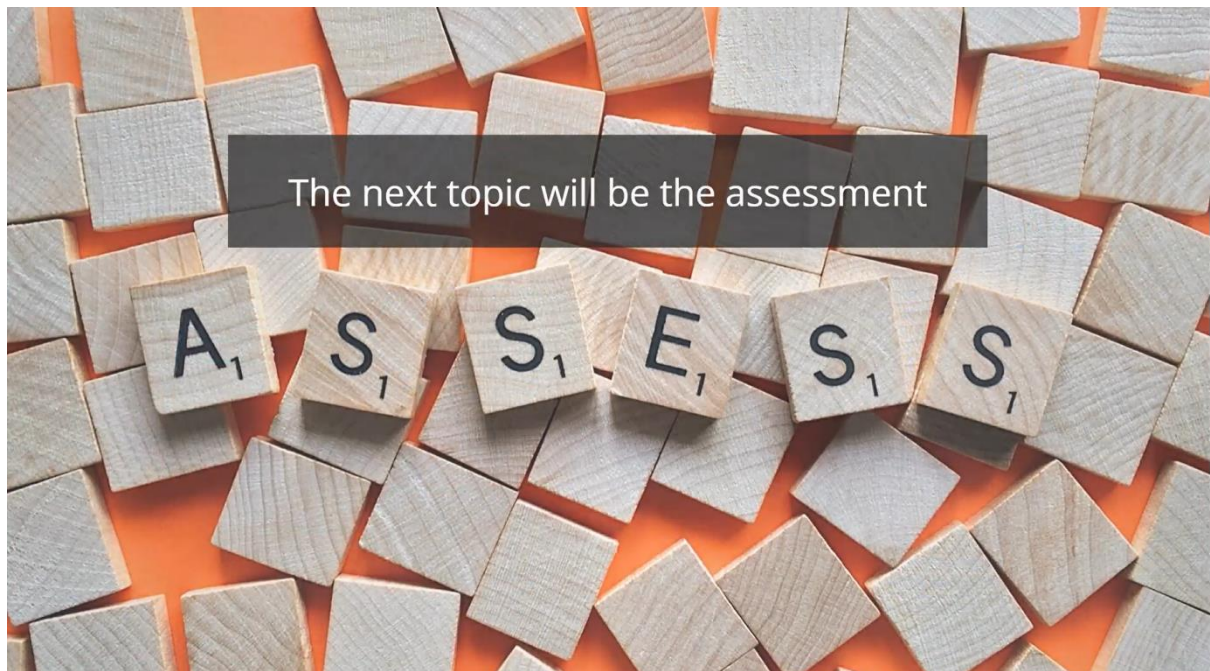
To conduct a what if analysis with the decision tree, click node, change node, change the value of aggressive marketing, increase it to 2.5 million dollars, click okay.

The decision tree is updated.

Decision tree, highlight, highlight best.

Now we can see launching the product without marketing campaign gives us greater expected value.

Slide #5



I do have an assessment for you.