

Introduction to the DecisionTools Suite 5.0

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What is the DecisionTools Suite?

A Collection of Excel Add-ins for

- Risk Analysis
- Decision Analysis
- Sensitivity Analysis
- Optimization (Both Deterministic and Stochastic)
- Statistical Analysis
- Predictive Analysis

Components of the Suite

- @RISK
- RiskOptimizer
- Evolver
- TopRank
- PrecisionTree
- StatTools
- NeuralTools

Sensitivity Analysis with TopRank

You have built a model which represents the real world in some way. There are a number of *inputs* that affect one or more *outputs*. The TopRank add-in helps you answer the most fundamental question:

Which inputs are the most important?

Simulation with @RISK

In an @RISK model, you replace single input values in a model with *distribution functions*, which represent the spread of uncertainty in the value.

The output then becomes a distribution as well, determined by the process of *simulation*.

Optimization with Evolver

Evolver uses genetic algorithms to answer the question, **what values should I set my inputs to generate the optimal value of my output.**

Optimization with RiskOptimizer

RISKOptimizer performs the same tasks as Evolver, except for stochastic models instead of deterministic ones. Effectively, RISKOptimizer is a combination of @RISK and Evolver.

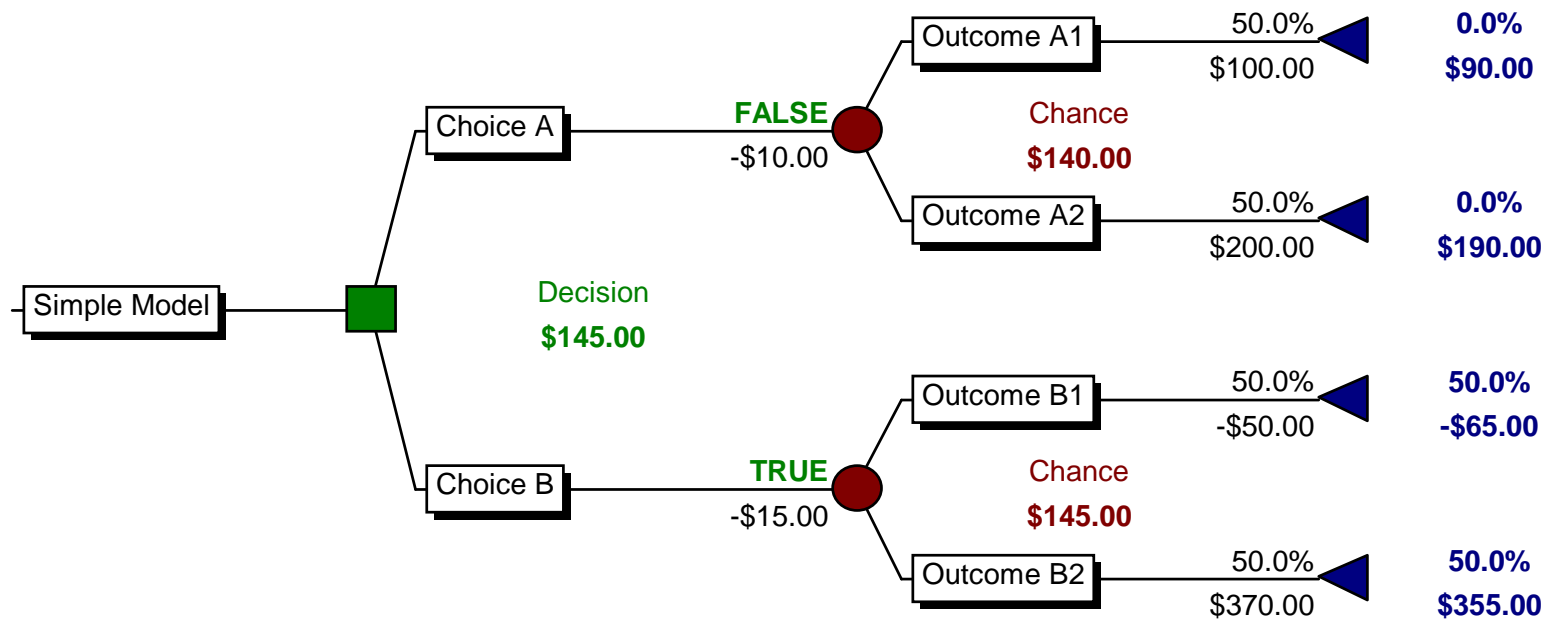
What input values would minimize the variance of my output?

What input values would maximize the 95th percentile of my output?

Decision Analysis with PrecisionTree

PrecisionTree allows you to construct and analyze decision models (either Decision Trees or Influence Diagrams) with the aim of choosing an optimal policy for a complicated chain of decisions.

A Simple Decision Tree



Statistical Analysis with StatTools

StatTools is a general purpose Statistical Analysis package. It includes a number of *analyses*, including:

- Summary Statistics and Graphs
- Statistical Inference
- Normality Tests
- Time Series and Forecasting
- Regression and Classification
- Quality Control
- Non-Parametric Tests

Predictive Analysis with NeuralTools

NeuralTools is a tool for *prediction*.

That is, given a particular question, and a set of existing data where that question's answer is already known, make a prediction for other cases where the answer is not known.