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LINGO10:

Introduction

LINGO provides a completely integrated package that includes a powerful language for expressing optimization models, a full featured environment for building and editing problems, and a set of fast built-in solvers.

Convenient Data Options

LINGO takes the time and hassle out of managing your data. It allows you to build models that pull information directly from databases and spreadsheets. Similarly, LINGO can output solution information right into a database or spreadsheet making it easier for you to generate reports in the application of your choice. *Optimization Modeling with LINGO*, a comprehensive modeling text discussing all major classes of linear, integer and nonlinear optimization problems.

Easy model expression

One of LINGO’s most powerful features is its mathematical modeling language. LINGO’s modeling language lets you express your problems in a natural manner very similar to standard mathematical notation. LINGO allows you to do things such as quickly express a series of similar constraints in a single compact statement.

When building models, you typically find there are one or more sets of related objects (e.g., sets of factories, customers, vehicles, or employees). Often if a constraint applies to one member of a set, then a constraint of the same form also applies to each of the other set members. Rather than requiring that you express an individual constraint for each set member, LINGO allows you to express the entire group of constraints in one concise statement. Taking advantage of sets is the foundation of LINGO’s modeling language, the fundamental building block of the program’s most powerful capabilities. LINGO even allows you to express common sets implicitly, such as days of the week or months of the year. LINGO’s modeling language can help you drastically cut your model development time. Very large models can often be efficiently expressed with LINGO in less than a single page. The modeling language’s similarity to standard mathematical notation makes it very easy to read.

Using LINGO, you can easily make your model "scalable". This means the dimensions of your model can change without requiring changes to your expression of the problem. For example, suppose you are finding the cheapest way to supply a product from several different warehouses to several different customers. If the number of warehouses or customers change, many modeling packages would require significant changes to the problem’s formulation. However, with LINGO, your problem formulation needs no modification. You can simply change the size of your data files and LINGO takes care of the rest.

LINGO’s modeling language includes an extensive library of mathematical, probability and financial functions. You can also create user defined functions for LINGO to use. LINGO accepts generalized expressions including those with parentheses and variables on the right-hand side.