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AMPL

AMPL is an algebraic modeling language and computing environment for stating, solving, and manipulating a broad variety of mathematical programming problems, including smooth constrained nonlinear optimization, continuous and discrete linear programming, network optimization, and nonlinear complementarity problems. AMPL's goal is to encourage experimentation with formulations and solution schemes by allowing optimization models to be submitted to a computer in much the same way that one mathematician would describe a model to another. Compared with earlier modeling languages, AMPL is notable for the generality of its set manipulations and indexing features, the naturalness of its objective and constraint descriptions, and the flexibility of its operating environment.

The freely available AMPL/solver interface library makes it easy for researchers to connect experimental solvers to AMPL, and to have function, gradient, and Hessian information on AMPL expressions computed efficiently and automatically during the solution process. Freely available demonstration ("student") versions of AMPL encourage its use in both teaching and research.

Much more information about AMPL is available from the AMPL web site, http://www.ampl.com/ampl/.