# Usage

gmpl2sql.exe -d DATA\_FILE -m MODEL\_FILE

The program will create an SQL file with the same name as DATA\_FILE but with a .sql extension and an SQLite 3 database with the same name as DATA\_FILE but with a .sl3 extension.

# General

Throughout, whitespace and commas are collapsed to a single token separator (consistent with the GMPL definition). Thus, a space, tab, newline, or comma, or any combination of those, can separate tokens.

# Set and parameter definitions

Only allow these forms:

set NAME;

param NAME;

param NAME {x in X, y in Y, z in Z};

Commas are optional. Quoted strings are not allowable for set names. Restrictions are allowed but ignored. E.g.,

param p{i in I, j in J}, >= 0

will result in a parameter *p* being stored, but the restriction will not be recorded anywhere. Also, defaults are ignored in parameter definitions (but are allowed in the data block). Any type keywords, such as integer, binary, or symbolic throw an error. All values are assumed to be numeric.

Have to have:

1. Set definitions
2. Parameter definitions
3. Variable definitions

In that order. When the parser encounters its first variable definition, it stops parsing the model file.

# Set data block

Do not support subscripted sets, and therefore do not support slices or matrix data for sets.

These are valid:

set month := Jan Feb Mar Apr May Jun;

set month "Jan", "Feb", "Mar", "Apr", "May", "Jun";

set FUEL :=

AR\_EL\_FN

AR\_EL\_SC

AR\_SC\_BG

AR\_SC\_HF

BO\_EL\_FN

BO\_SC\_BG

BO\_SC\_HF

BR\_NE\_WAD

BR\_NO\_EL\_FN

BR\_NO\_EL\_SC

;

# Param data block

Do not support transposed data (tr) for 2-d data sets. Of the many formats available, a subset are supported.

## Not supported

These are **not supported**.

1. Definition of multiple parameters at once along the same dimension:

param : param1 param2 param3

v1 val11 val12 val13

v2 val21 val22 val23

or

param : set : param1 param2 param3

v1 val11 val12 val13

v2 val21 val22 val23

1. Transposed data (using keyword (tr)) for 2-d data sets:

param demand default 0 (tr)

: FRA DET LAN WIN STL FRE LAF :=

bands 300 . 100 75 . 225 250

coils 500 750 400 250 . 850 500

plate 100 . . 50 200 . 250 ;

1. Non-numeric data:

param month := 1 Jan 2 Feb 3 Mar 4 Apr 5 May;

1. A single-member slice with wildcard:

param init\_stock [\*] iron 7.32, nickel 35.8;

## Supported

The following **are supported**.

1. Plain data:

param NAME default dv :=

t11,t21,t31 v1

t11,t21,t32 v2

...

;

The default value, “:=”, and commas are all optional.

1. Simple 2-d tabular data

param YearSplit default dv: 1990 1991 1992 1993 1994 1995 :=

ID 0.1667 0.1667 0.1667 0.1667 0.1667 0.1667

IN 0.0833 0.0833 0.0833 0.0833 0.0833 0.0833

SD 0.1667 0.1667 0.1667 0.1667 0.1667 0.1667

SN 0.0833 0.0833 0.0833 0.0833 0.0833 0.0833

WD 0.3333 0.3333 0.3333 0.3333 0.3333 0.3333

WN 0.1667 0.1667 0.1667 0.1667 0.1667 0.1667

;

The default specification is optional, but the assignment operator “:=” must be present. (Per the GMPL language description, the assignment operator is actually optional, but then it is very difficult to distinguish the start of the record.)

1. Multi-dimensional tabular data with slices

param InputActivityRatio default 0 :=

[UTOPIA,\*,DSL,1,\*] : 1990 1991 1992 1993 1994 1995 :=

E70 3.4 3.4 3.4 3.4 3.4 3.4

RHO 1.43 1.43 1.43 1.43 1.43 1.43

TXD 1 1 1 1 1 1

[UTOPIA,\*,ELC,1,\*] : 1990 1991 1992 1993 1994 1995 :=

RHE 1 1 1 1 1 1

RL1 1 1 1 1 1 1

TXE 1 1 1 1 1 1

...

;

As before, the default specification and assignment operator “:=” are optional.