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UG CONDITIONAL LOGIC STATEMENTS

If you want to add some intelligence to your Unigraphics models to prevent erroneous input through expression list edits, logic statements can help. You can set upper/lower limits for accepted inputs, have other expression values change based upon another's value, or have other checks enforced. They can be very powerful for developing re-usable design tools and help prevent crashes when an entered value exceeds the models design intent.

OVERVIEW:

- Allows you to embed IF-THEN-ELSE statements into parameter evaluation
- Using dummy variables, you can build in checks for the user input routine (e.g. if what's entered satisfies some criteria use it, otherwise use some default value)
- Uses standard logic expressions (AND, OR, EQUAL TO, LESS THAN, GREATER THAN OR EQUAL TO, etc)
- Takes some forethought and planning to be valuable (see MODEL PLAN)

TO USE IT:
Logic statements can be entered either directly in the expression list, or can be applied in the spreadsheet. The general format for them is:

"EXPRESSION"= if(*conditionals*)(value A)else(value B)

Logical operators in UG

>	Greater Than
<	Less Than
>=	Greater Than or Equal
<=	Less Than or Equal
==	Equal
!=	Not Equal
!	Negate
&&	AND
||	OR

Example: We want the thickness of a plate to always be greater than 1 inch, but not larger than 4 inches. The user through the expression list enters the plate thickness. We want our model to check to make sure that the value entered always satisfies our thickness criteria, or else defaults to a thickness of 1 inch.

We create a "dummy expression" called 'Plate_th'. (The capitalization will put it near the top of the expression list, which the user will see first when they go to edit the expression.) We create a working expression called 'z_thick' that will actually drive the model and will be at the end of the expression list. Here is what our expressions will look like:

```
Plate_th=2
p0=0.0
p1=.875
z_thick=if(Plate_th>=1&&Plate_th<=4)(Plate_th)else(1)
```

For the value of **z_thick**, if **Plate_th** is greater than or equal to 1 AND less than or equal to 4, use the value of **Plate_th** as it is entered, otherwise use a value of 1. In this case, the users input satisfies our criteria so the plate thickness would be 2,

CAVEATS:

- Great way to start building design intent into models
- Conditionals can be nested to create multiple evaluations and reference other conditional expressions
- Using the spreadsheet affords even more evaluation power using cells that can do more math and reference more data.