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Building Your First Parametric Revit Family

Steven M. Campbell
Revit Content Project Manager

Jeremy Tammik
Autodesk Developer Consultant

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Building Your First Parametric Revit Family

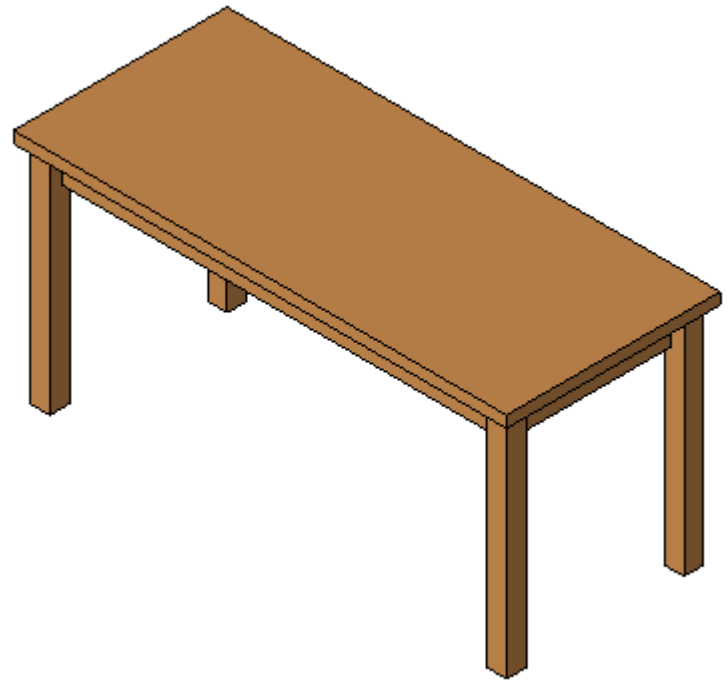
What are we going to do in this class?

1. Build a simple table
    1. Plan it first
    2. Build the Bones, Muscles and Skin
2. Drive Families from the API – Part 1
    1. Load
    2. Place
    3. Modify
3. Discuss and show Nesting in the Family Editor
    1. Parameter Linking
    2. Shared families
    3. Show examples
4. Drive Families from the API – Part 2
    1. Select
    2. Modify

The Simple Table

Planning Questions to answer:

1. Which Template?
    1. M_Generic Model.rft
2. Which Category?
    1. Furniture
3. Placement?
    1. Origin to be centered Front/Back and Left/Right, on the Level
4. Parametrics?
    1. How to grow, equal Front/Back and Left/Right, up from Level
5. Special Behaviors?
    1. None
6. Types to create?
    1. 1500x650x720mm
    2. 800x800x760mm



Process of building The Simple Table

Build in levels of detail or complexity
using the Bones, Muscle and Skin methodology

Process: *(short version)*

- Layout Reference Planes (The Bones)
- Add Parameters and Constraints (The Muscles)
- Flex Types and Host (Testing Procedure)
- Add a Single Level of Geometry (The Skin)
- Flex Types and Host (Testing Procedure)

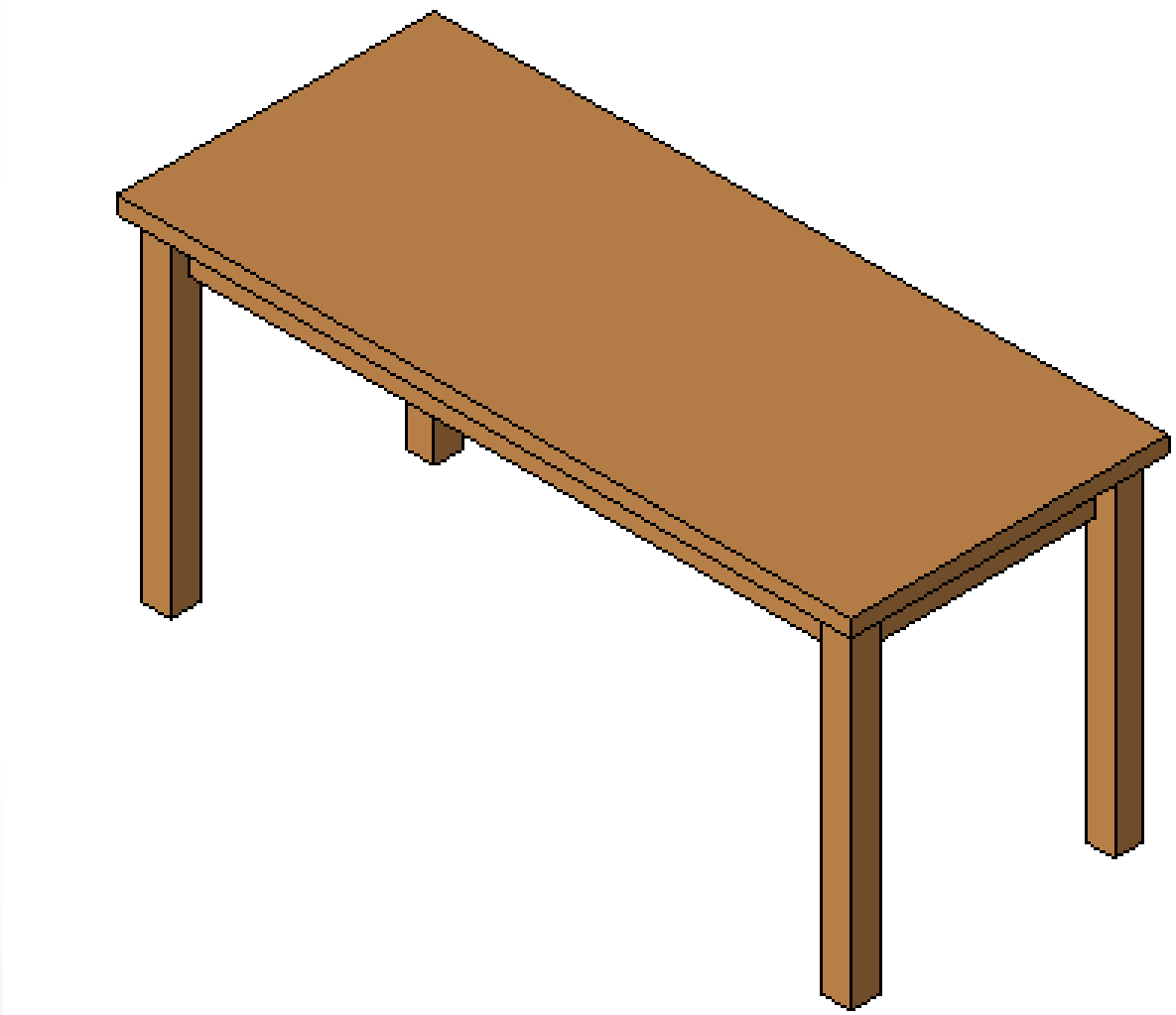
- Repeat for every level of detail or complexity
- Test in project environment

Order of Complexity:

- Table Top
- Legs
- Apron

Building The Table Family:

In Product Demo



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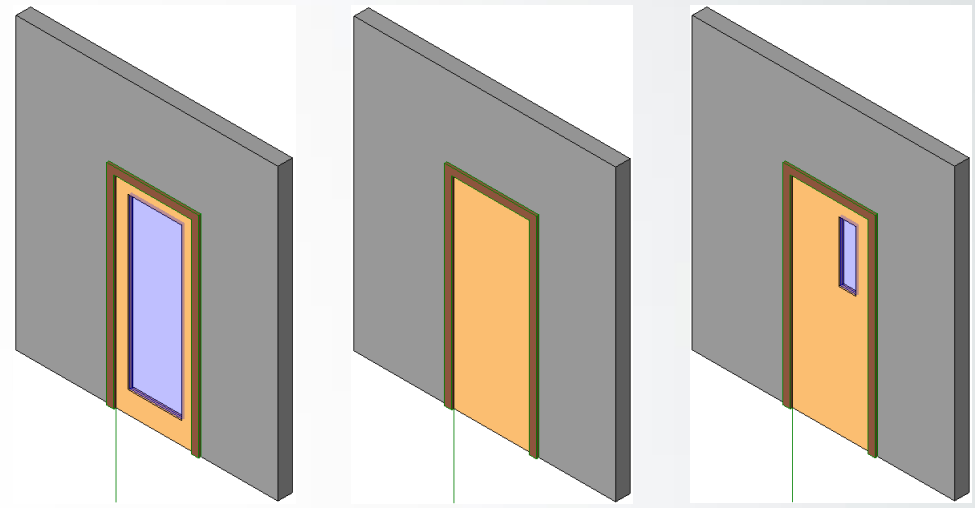
Driving Families From API:

Table: Load, Place, Modify…

Nesting:

Nesting allows the use reusable parts in the family editor.



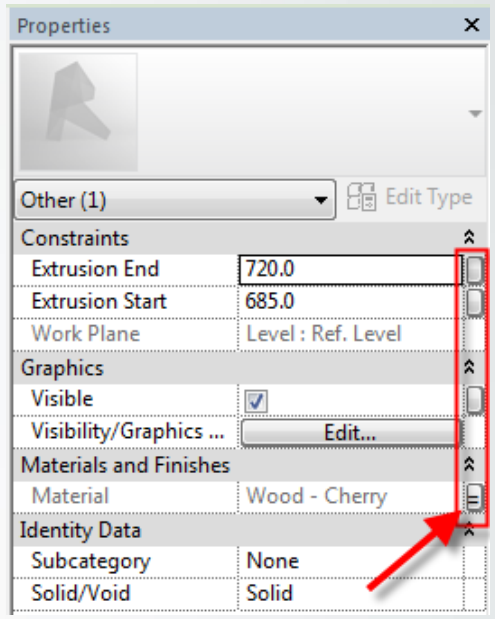
- The parts can be driven from the host family.
- They can schedule separately (with limitations).
- They can be swappable.

Example: a swappable panel door family that is fully parametric

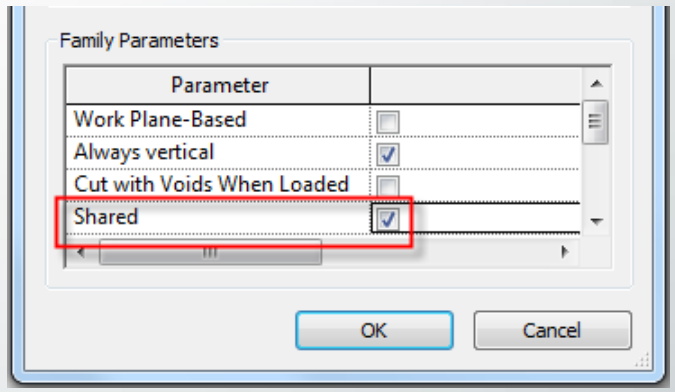
One family with 3 door panel families nested into the host

Nesting Topics:

Parameter Linking:
Parameters can be linked from the host family to the nested families by using the "Associate Family Parameter" button to link the 2 parameters.



Shared Families:
Allow a family to be scheduled in a project.
(Limitation: Only instance based parameters can be linked)



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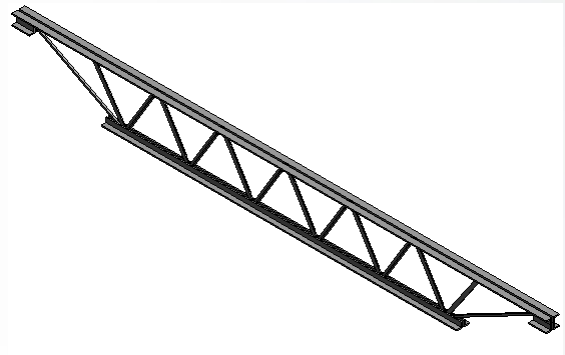
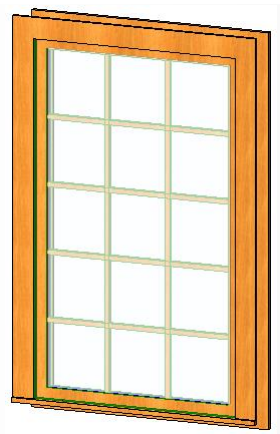
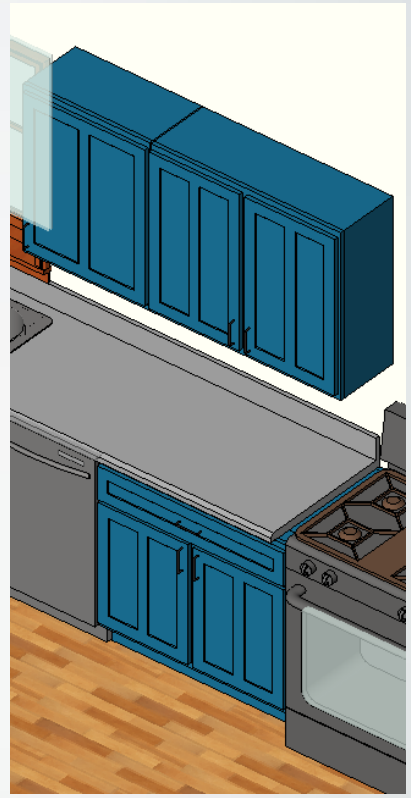
Nesting Examples:

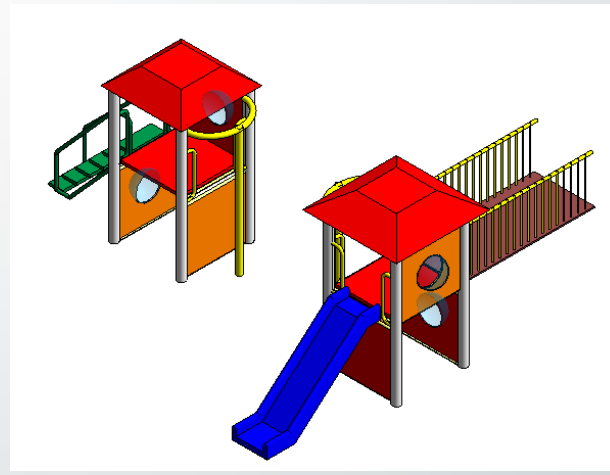
Other Examples:

- Open Web Joist that the web resize and array based on the depth and length
- Window grill pattern that you can define how many spacing bars needed
- Kitchen cabinets with swappable door and drawer fronts
- Modular Playground Equipment









Driving Families From API:

Kitchen: Select, Modify (multiple if possible)

Additional resources

Blogs

- The Building Coder
- Revit OpEd - Steve Stafford
- do-u-revit.blogspot.com

Newsgroups:

- http://www.augi.com/
- http://www.revitforum.org/forum.php

Books:

- http://paulaubin.com/