Families of Parts

- Many times parts come in a variety of sizes.
- This is called a family of parts.
- It is not efficient to build each version individually.
- Design Tables simplify making families of parts.
Design Table Overview

- Design Tables are used to create different configurations of a part.

- What is a Configuration?
  - A configuration is a way to create a family of similar parts within one file.
  - Each configuration represents one version of the part.

- Design Tables automatically change the dimensions and features of an existing part to create multiple configurations. The configurations control the size and shape of a part.
Design Table Overview

- Design Tables can control the state of a feature.
- The state of a feature can be suppressed or unsuppressed (also called resolved). A suppressed feature is not rebuilt or displayed.
- Design Tables requires Microsoft Excel application.
Design Tables Require:

<table>
<thead>
<tr>
<th>Column</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Table for: Tutor3</td>
<td></td>
</tr>
<tr>
<td>Sketch1</td>
<td></td>
</tr>
<tr>
<td>Sketch2</td>
<td></td>
</tr>
<tr>
<td>Sketch3</td>
<td></td>
</tr>
<tr>
<td>Comers</td>
<td></td>
</tr>
<tr>
<td>Knob</td>
<td></td>
</tr>
</tbody>
</table>

- **box_width**
- **box_height**
- **knob_dia**
- **hole_dia**
- **fillet_radius**
- **Depth**

**Tip:** Rename features and dimensions before creating a design table.
Rename Features and Dimensions

- Feature and Dimension names used in a Design Table should be renamed to better describe their function.

- Which is easier to understand?
  - D1@Cut-Extrude1
  - Width@Oval_Slot
To Rename a Feature:

1. Click-pause-click on Base-Extrude in the FeatureManager design tree (do not double-click).

   Tip: Instead of the click-pause-click technique, you can select the feature, and then press the function key F2.

2. The feature name is highlighted in blue, ready to be edited.

3. Type the new name, Box, and press Enter.
Inserting a New Design Table:

- An Excel worksheet is displayed in the part document window.
- Excel toolbars replace the SolidWorks toolbars.
- By default, the first configuration is named First Instance. You can (and should) change this to something more meaningful.
Review of a Design Table’s Format:

- Dimension and/or Feature names or special keywords go in this row.
- Values go here.
- Configuration names go in this column.
To View Part Configurations:

1. Click the Configuration-Manager tab at the bottom of the Feature-Manager window.
   The list of configurations is displayed.

2. Double-click each configuration.
Viewing Part Configurations:

3. The part is automatically rebuilt using the dimension values from the design table.