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# Introduction to thinkteam

This task explains how to manage Part Data and Document Data of a small mechanical assembly in both Top-down and Bottom-up assembly scenarios.

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## 1. Managing Part and Document Data

An Assembly can be looked upon as a Tree. It has different levels with Main Assembly - the Top Level, Sub Assembly - the Intermediate level and Part - the Bottom most level.

There are two approaches to build an assembly. Top Down and Bottom Up. Building the assembly, starting from the Assembly level and then working down adding subassemblies and parts, is called the Top Down approach.

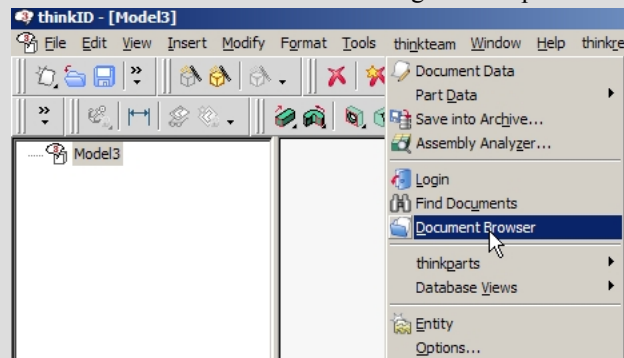
Starting with parts and building up finally arriving to the Top Assembly, is called the Bottom -Up approach.

We shall do both of them. First, Let us Start with Top Down Approach.

- **Open** Assembly.e3 from the task installation folder. The model file resides in the files folder inside the task folder wherever it is downloaded.

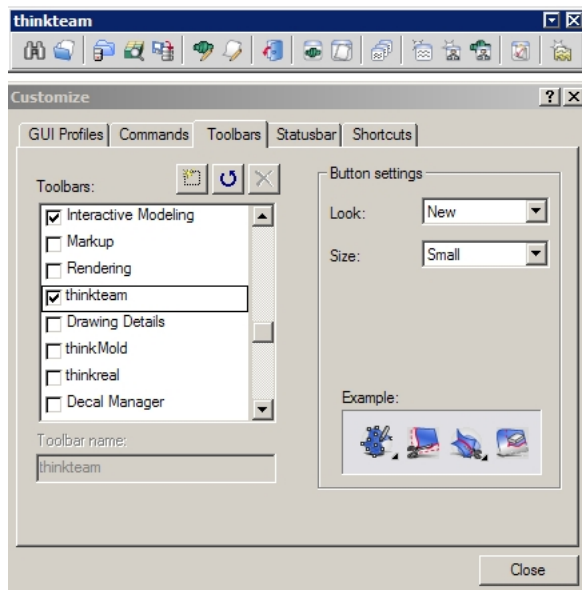
### thinkteam Menu.

Starting from ThinkDesign v 2008.1, there is a new thinkteam Menu item. All the thinkteam commands that were under Tools menu of ThinkDesign is now put under thinkteam Menu. Refer to the image the below...

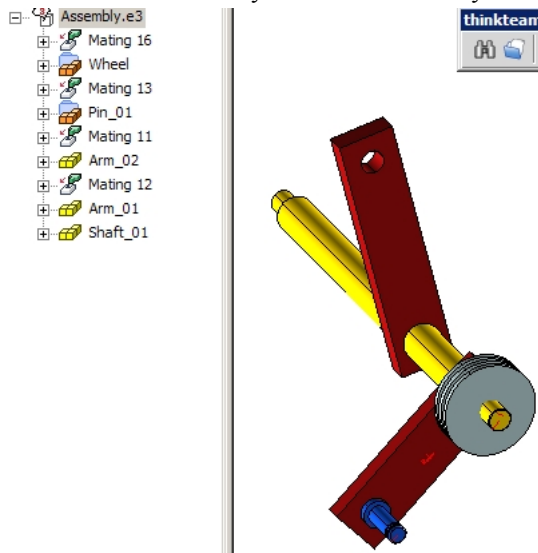


Before we proceed let's add thinkteam toolbar which is available by default.

- Use command **Tools** → **Customize**.
- Click on Toolbars Tab and select thinkteam.



Let's look at the History tree of the assembly file that is open.



There are 5 components. Wheel and Pin\_01 (highlighted with gray color) among these, are X \_ References. Arm\_01 and Arm\_02 are Local Components . Notice the color change and a small arrow in the icon for X - References. Let us create new X - References now.

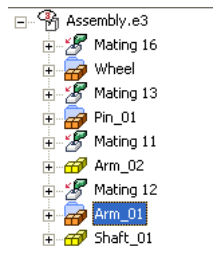
### HOW TO USE PART AND DOCUMENT DATA OPTIONS

We suggest you read this useful article on Part/Document data options.

How to use Part and Document Data Options.



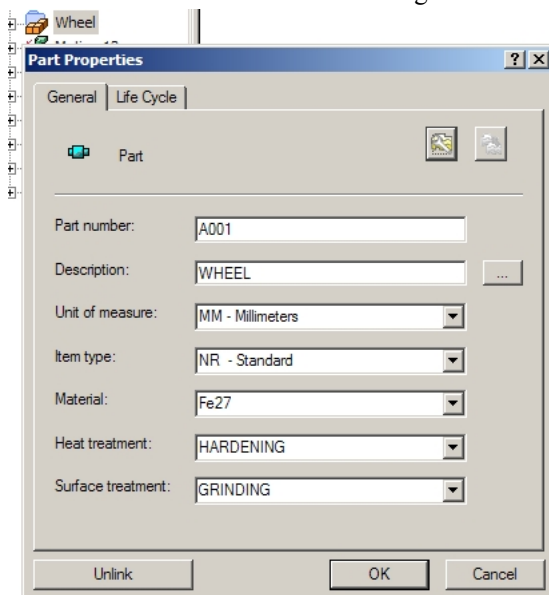
- Right click mouse button on Arm\_01 in history tree.
- Select **Make Component X-Reference**.
- In the Save File dialog box, accept the default name - Arm\_01.e3 and press OK.
- Notice that the icon for Arm\_01 Changes in the history tree.



In the same manner, make all Components as X - References.

Now let us add part data to components.

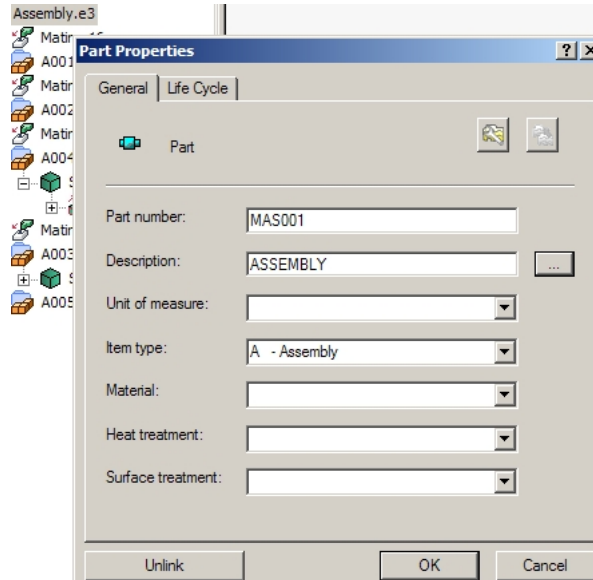
- Click Right Mouse button on Wheel in History tree.
- Select **Edit Part Data**.
- Enter the data as shown in the image Below.



- Press OK.

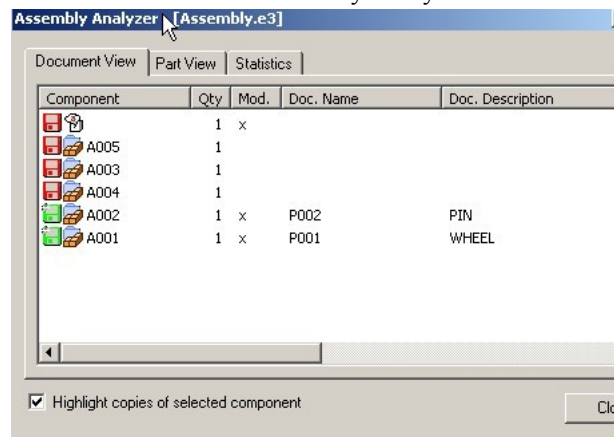
With same Procedure, add part data to all other parts as in table below:

Also Add Part Data to the complete Assembly. It is important that we add the Part Data at the Document Level (or Top Level).

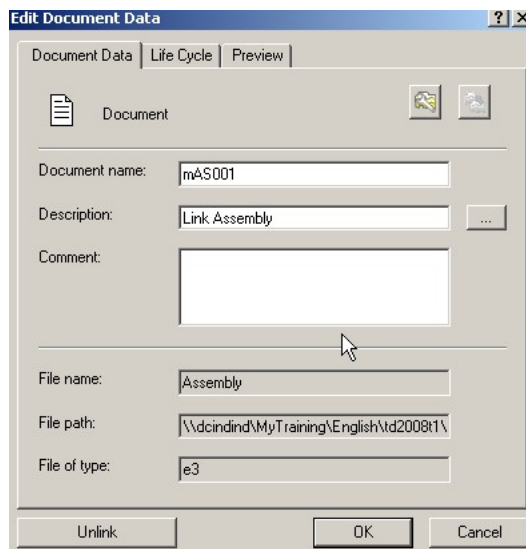


Now, Let us add some Document Data to these components Using Assembly Analyzer. Without Document Data, ThinkDesign does not allow you to Save the Assembly into our Archive.

- Select thinkteam > Assembly Analyzer.



- Right click mouse button on first member.
- Select Document Data.
- Note that data for this document has already been inserted, as shown in the above image (in fact the floppy disk icon is green)

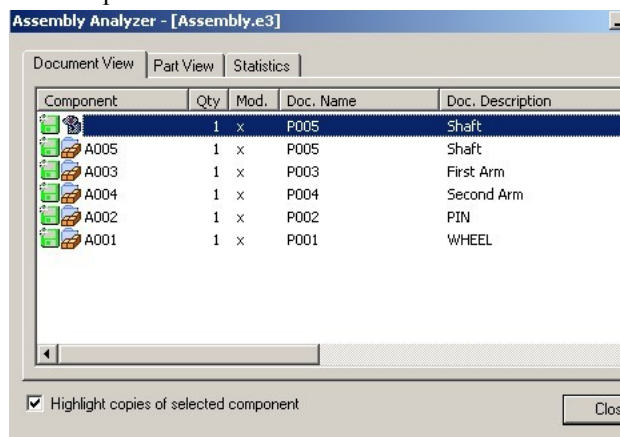


- Press OK.

Similarly add Document Data to all the parts as shown in the table below.

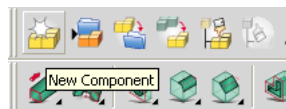
Press Close.

The completed data looks as below:



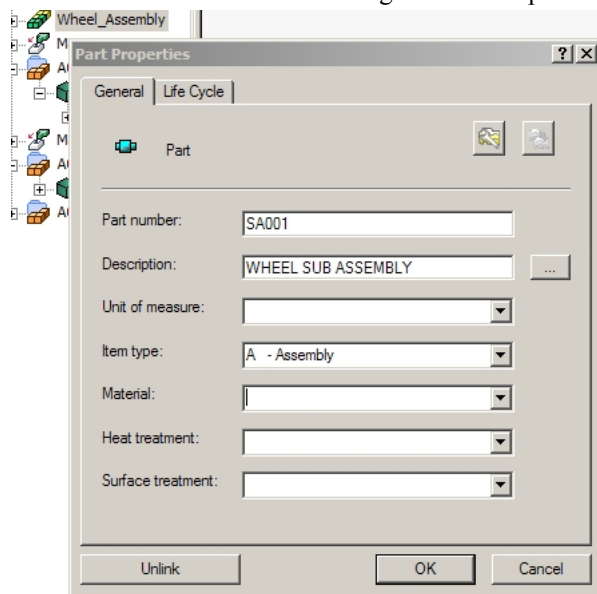
Let us create a Subassembly and add part data to it.

- Use command **New Component**.



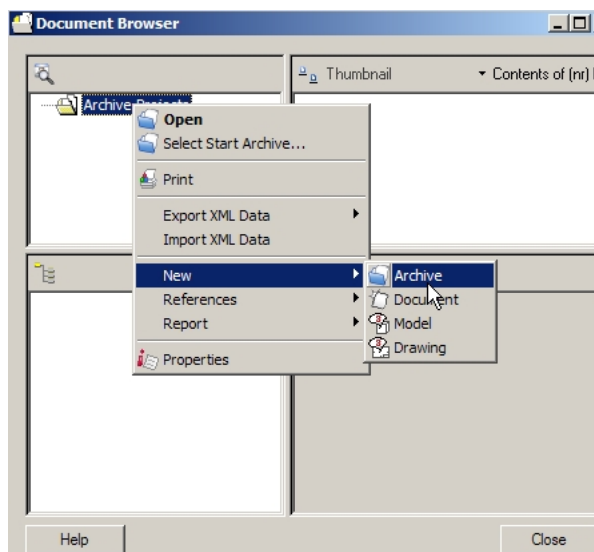
- Select Wheel and Pin\_01.
- Click right mouse button and select End of Selection.
- Enter name as Wheel\_Assembly. Hit Ok to All for the References message.
- Click right mouse button on Wheel\_Assembly in history tree and Select **Edit Part Data**
- Press OK for Select Entity Type Dialog box.

- Enter data as shown in the Image below and press OK.

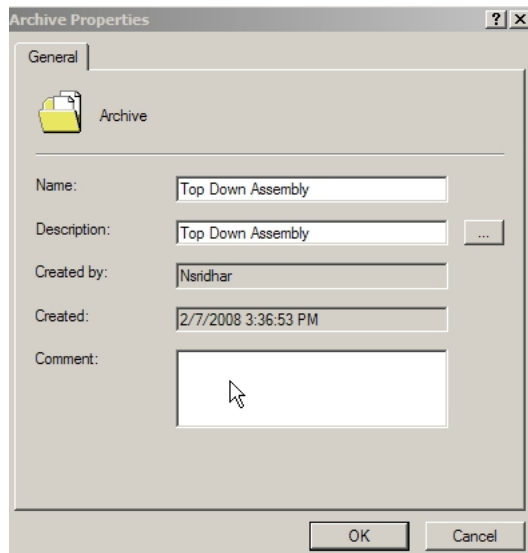


Let us save the assembly into a Project.

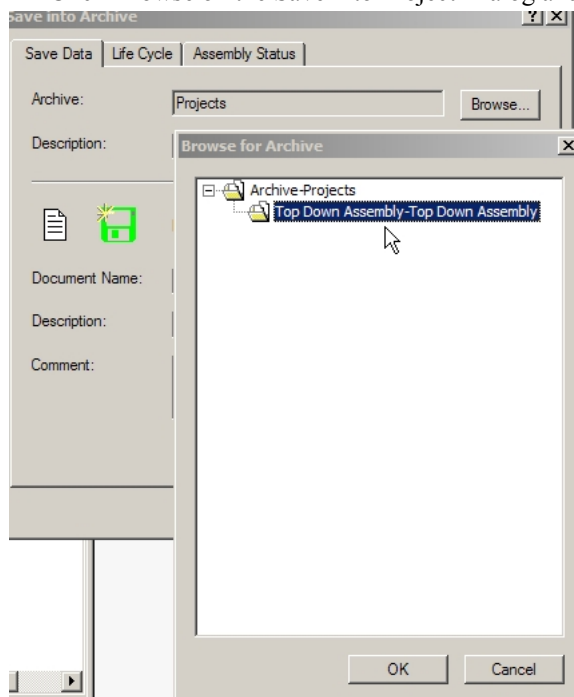
- Click on **Document Browser**.



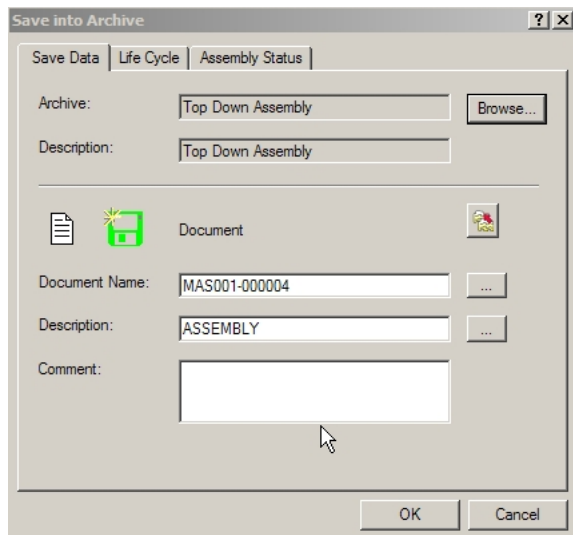
- Click right mouse button on Projects and select New - Archive.
- Enter data as shown in the Image below and press OK.



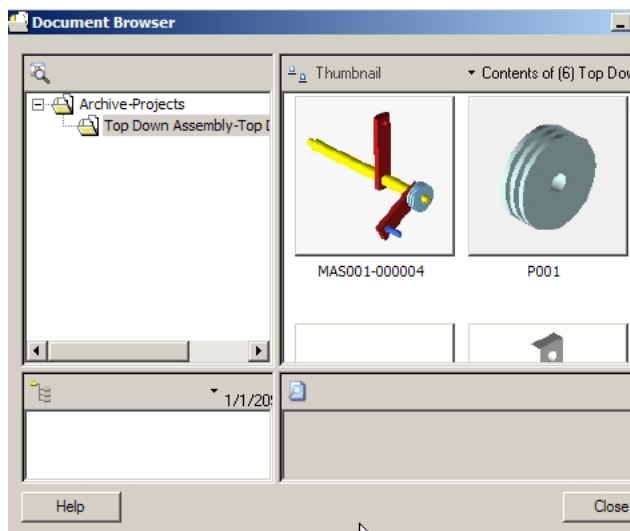
- Press Close on Document Browser window.
- Click on **Save into Archive**.
- Click Browse on the Save into Project Dialog and Select the Project you created Just now.



- Press OK.
- Please note that the data for this document has already been entered, and this fact is confirmed by the presence of the green floppy disk icon.



Now open the **Document Browser** and the assembly just saved is visible under Project - Top Down Assembly. It looks as Below:.

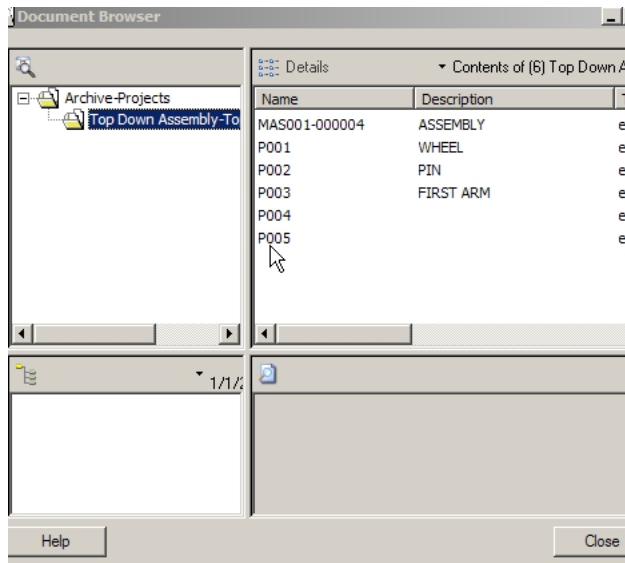


## 2. Bottom Up Approach

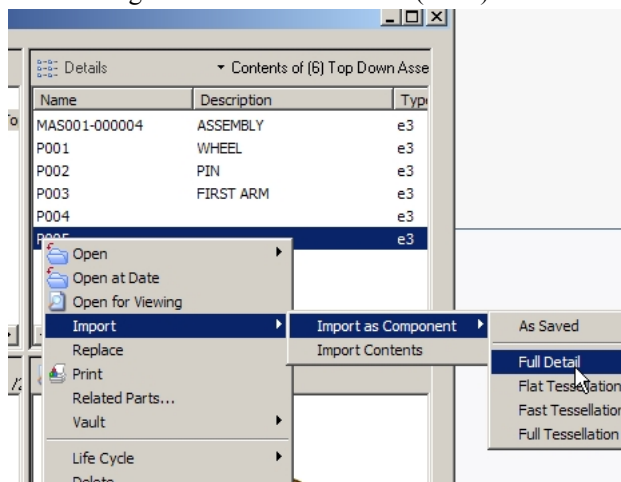
Let us now Start a new Model file, Create an assembly with Bottom - Up method.

- Use Command **File** → **New...** → **Model**.
- Click on **Document Browser**.
- Turn the project view to Details as in the image below:



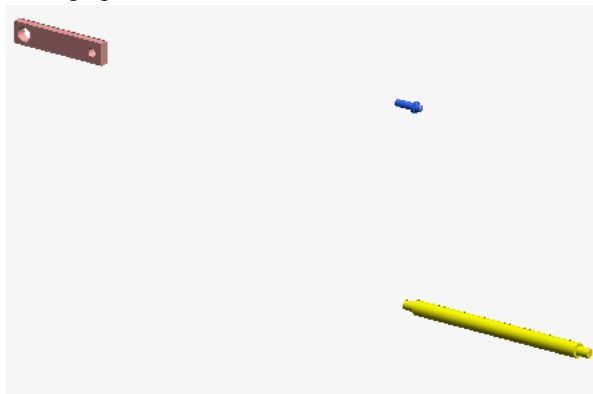


- Click right mouse button on P005 (Shaft) and select Import/Import as Component and set it to **Full Detail**.



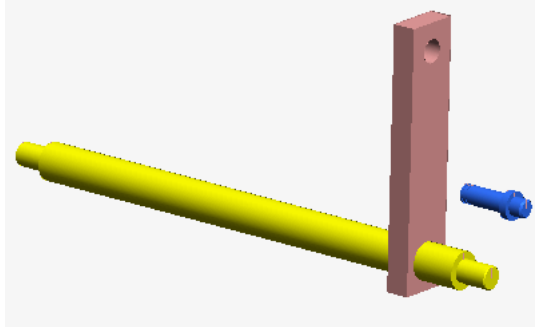
- Similarly, Import P004 (First Arm), P002 (Pin).
- Click Right Mouse Button on P005 (Shaft) and select Part Data/ Edit, Note that the Part Data Already exists.
- Use command **View** → **Modify** → **Fit View**.

Your graphics screen looks like this:

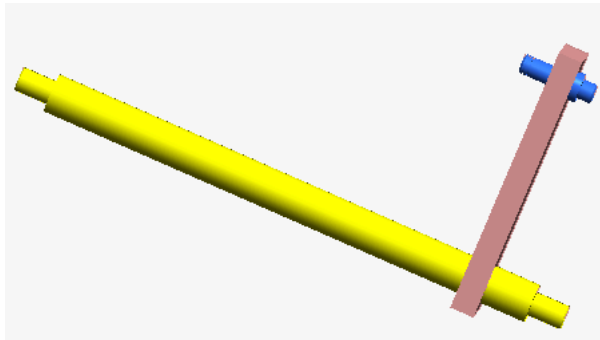


Let us complete the assembly and save it into the project.

- Click on Components and drag them near to each other.
- Use Command **Insert** ➤ **Solid** ➤ **Mating**.
- Pick on Inner Surface of Big Hole on Arm\_01 for Object to Be Positioned and Outer surface of Shaft for Reference Object.

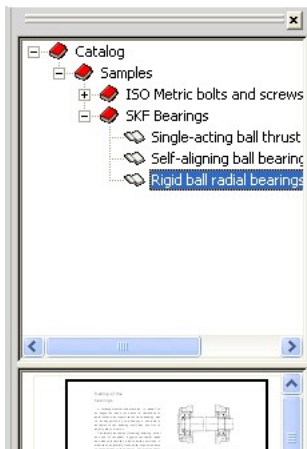


- Pick on Outer surface of Pin for Object to Be Positioned and Inner for Small hole on Arm\_01 for Reference Object.



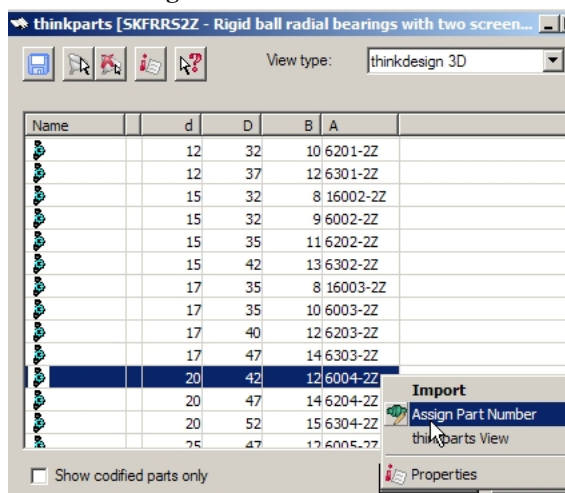
We Shall Insert a Standard Bearing now on to the Pin, selecting it from Parts Catalog.

- Use Command **Tools** ➤ **thinkparts** ➤ **Catalog Browser**.

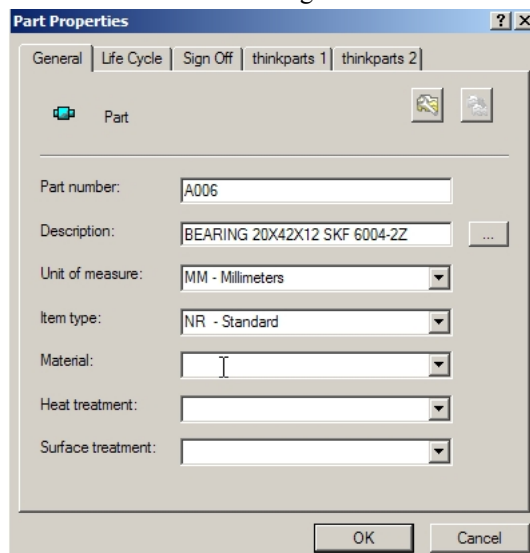


- Double Click on Rigid Ball Radial Bearings with two Screens 2Z .
- Click Right Mouse Button on the part Highlighted with gray color in the image above.

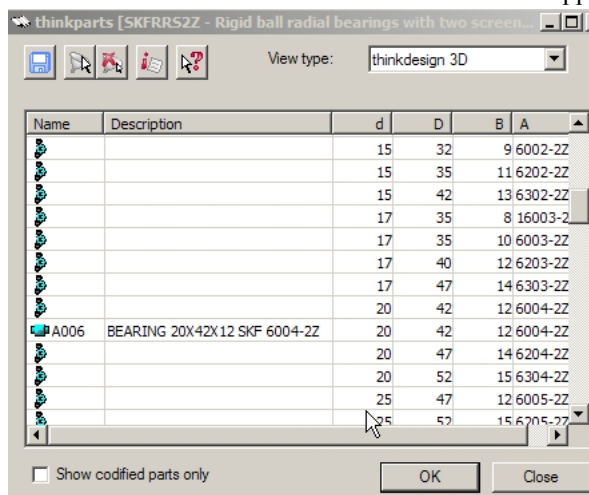
- Select **Assign Part Number**.





- Enter data as in the Image Below and Press OK.

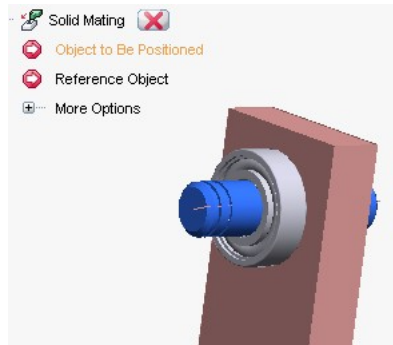


Notice that a new member with Part number A006 appears in the catalog.



- Click Right Mouse Button on the part A006.

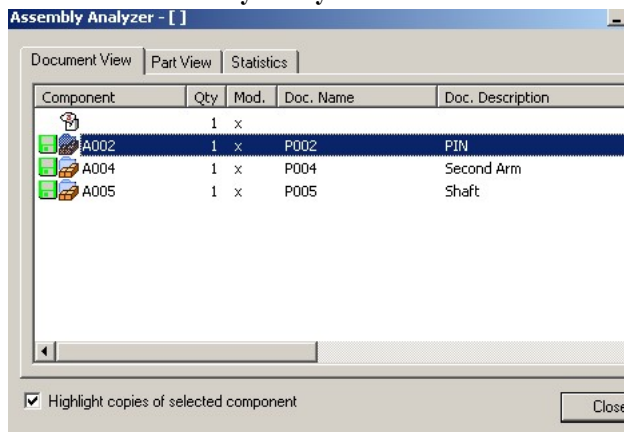
- Select Import and click somewhere on the graphics window.
- Use Command **Insert** → **Solid** → **Mating**.
- Pick on inner surface of bearing inner race for  Object to Be Positioned and Outer surface of Pin for  Reference Object.



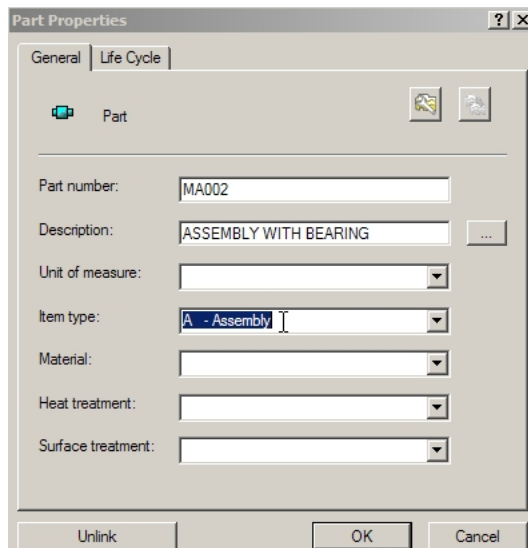
- Hit  Cancel.

Let us Add Part Data and Document Data for the Assembly we Created now and save it into the Archive.

- Click on **Assembly Analyzer**.



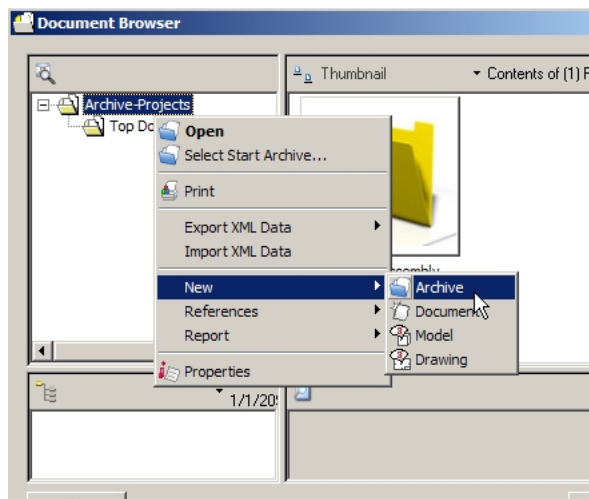
- Click on Part View tab.
- Right click on First member and select Part Data.
- Enter data as shown in Image below and press OK.



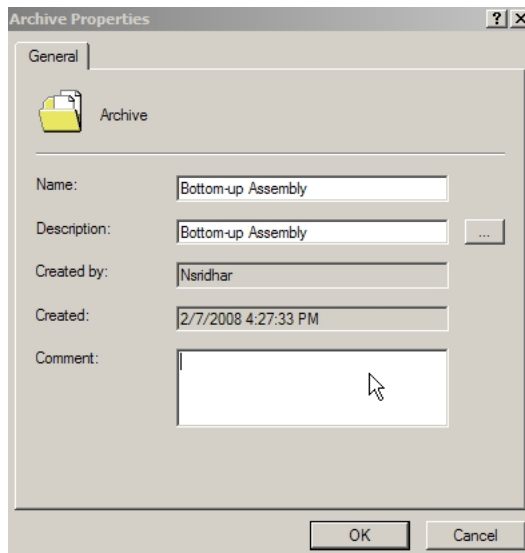
- Close Assembly analyzer.

Let us save the Assembly into a new Project.

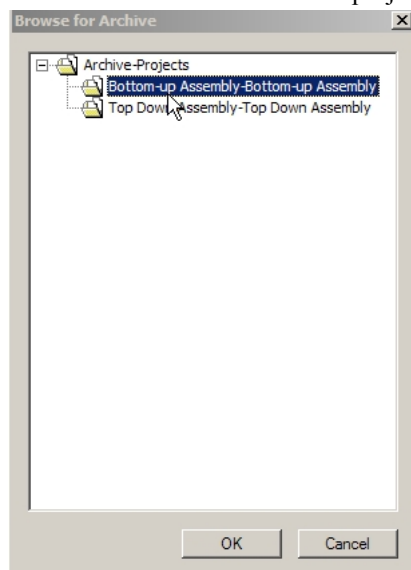
- Click on **Document Browser**.



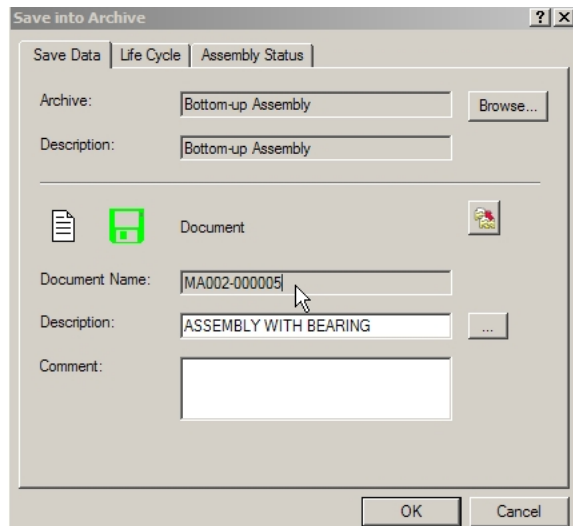
- Click right mouse button on Projects and select New - Project.
- Enter data as shown in the Image below and press OK.



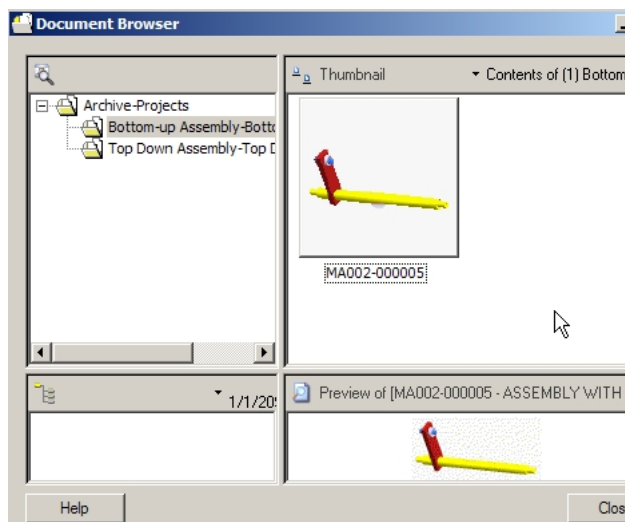
- Close Document Browser.
- Click on **Save into Archive**.
- Click Browse and select the project just created, press OK.



- Enter data as in the Image below and Press OK.



- Now Open Document Browser by clicking on **Document Browser** and you can see the assembly saved into archive now.



That's nice..You have familiarized yourself on how to work with Document Browser and learnt the basics of managing your project files with thinkteam.