

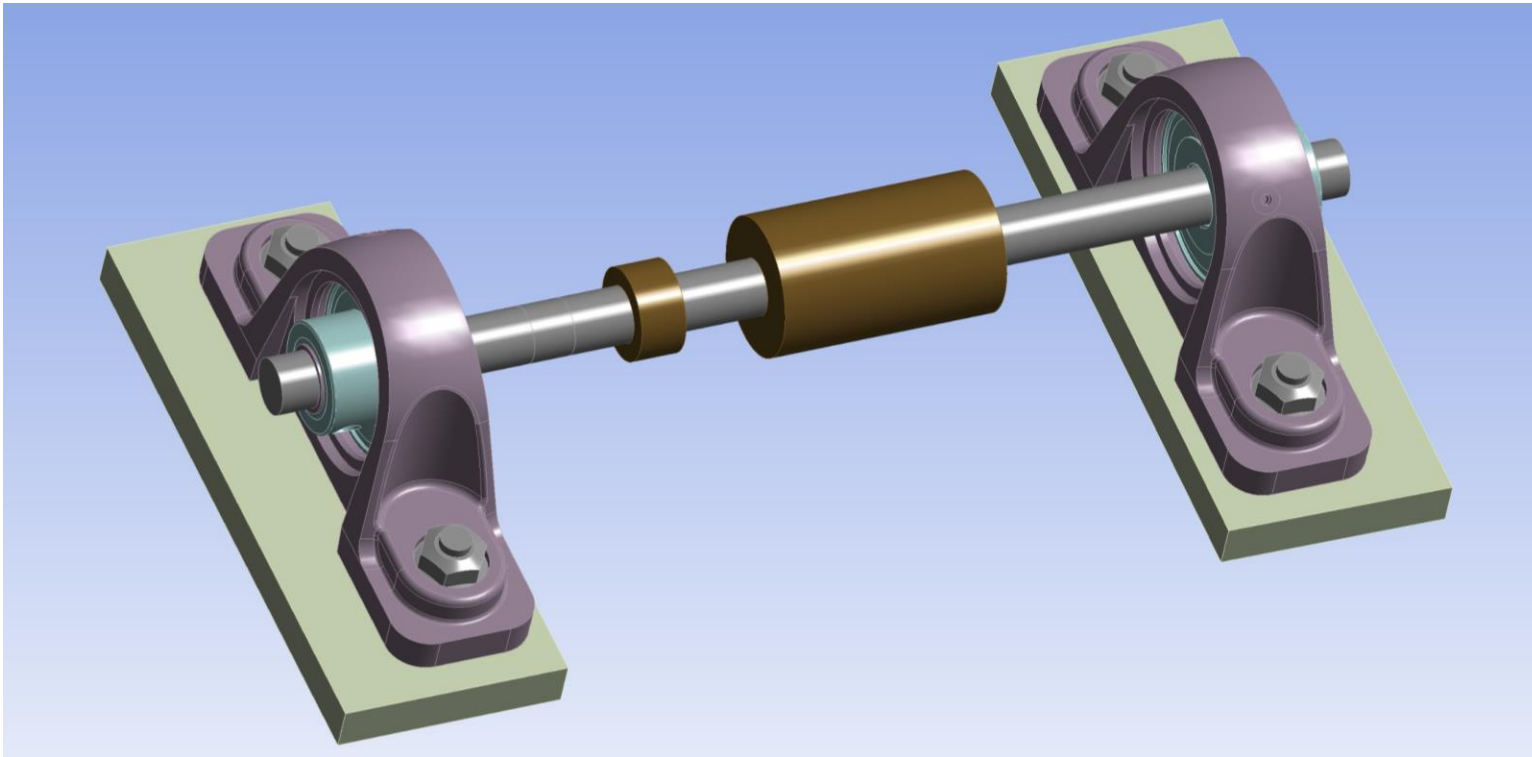
Ansys Mechanical Getting Started

Module 06 Student Workshop: Mesh

Release 2023 R1

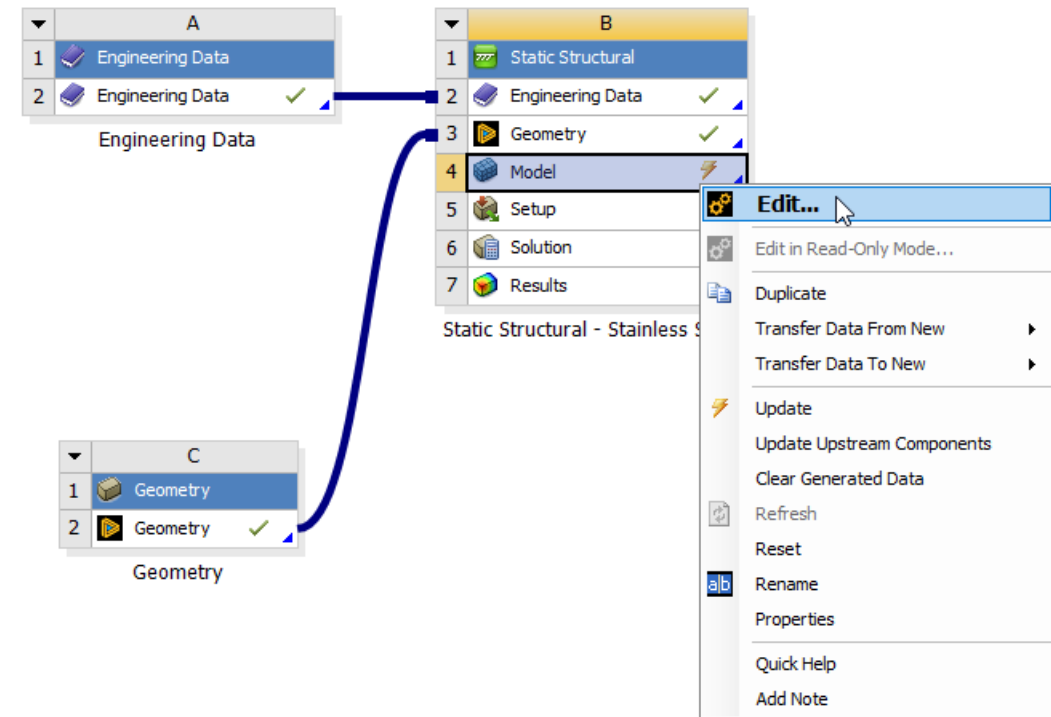
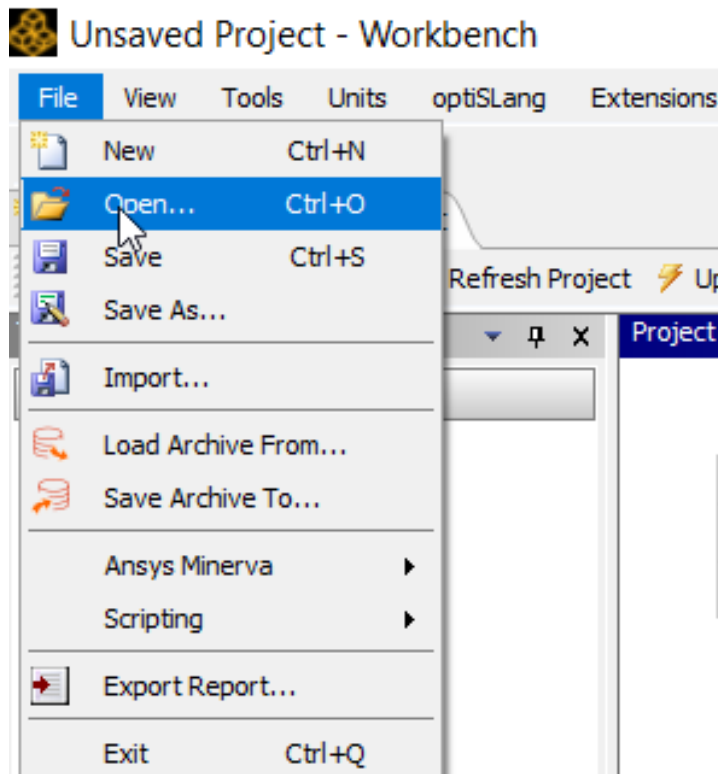
Workshop 06: Mesh

- Use this guide to work on the Journal Bearing model.



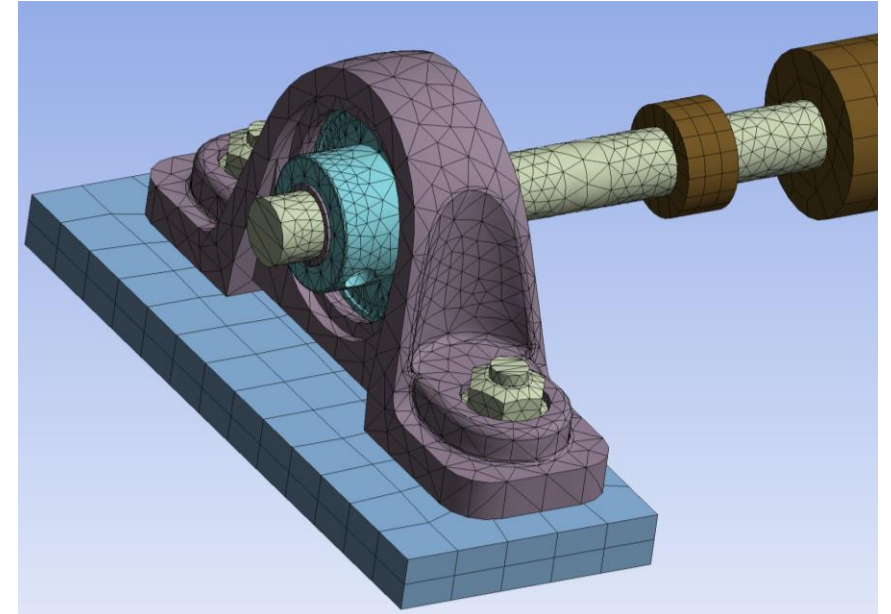
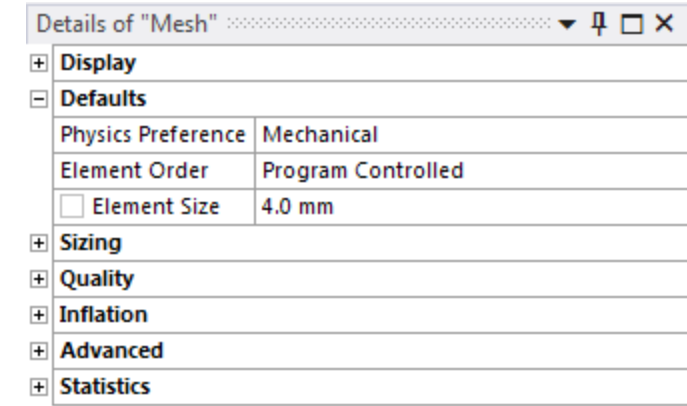
Workshop 06: Mesh

- Open archive file “Shaft_Bearings_WS06_Start.wbpz” or continue with the project as it was after Module 05 completion.
- Open Mechanical



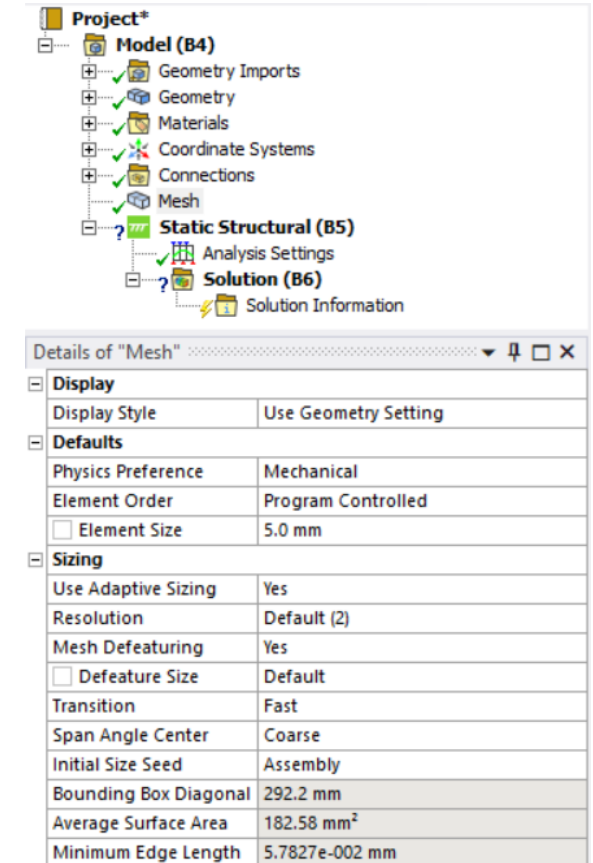
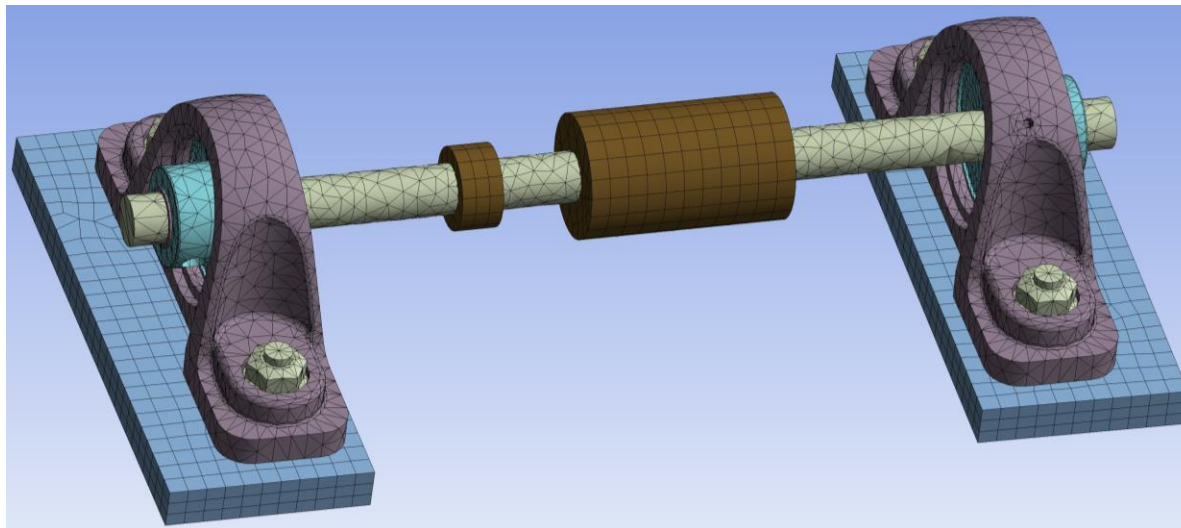
Workshop 06: Mesh

- Experiment with different global element size settings and note the effect on the mesh:
 - Details of Mesh → Defaults → Element Size → Set Element Size to 15 mm
 - Generate Mesh
 - Details of Mesh → Defaults → Element Size → Set Element Size to 4 mm
 - Generate Mesh



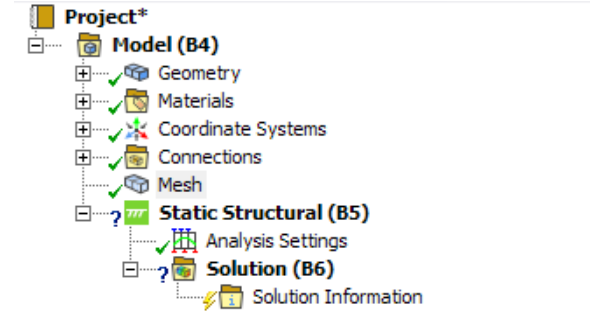
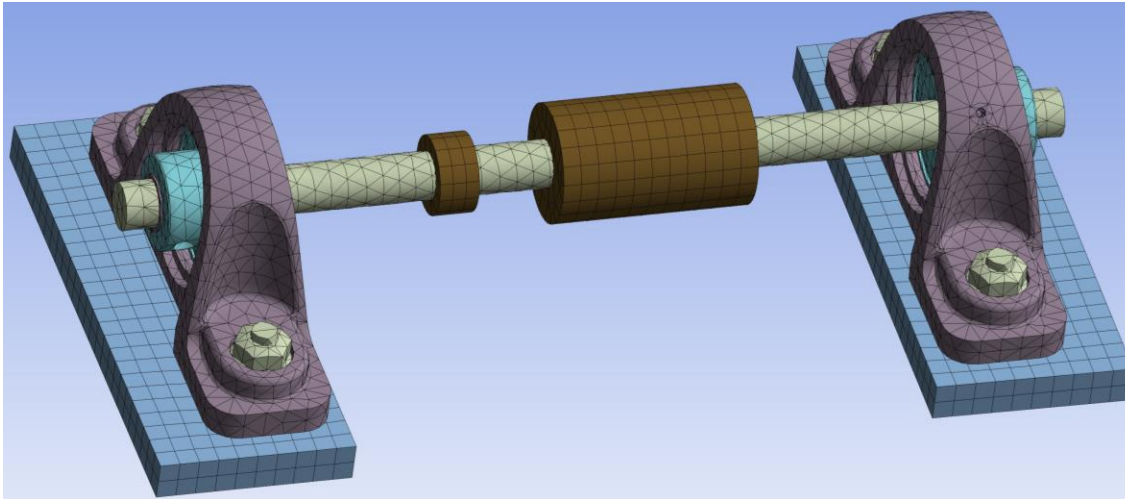
Workshop 06: Mesh

- Specify a global Element Size of 5 mm along with the default Use Adaptive Sizing:
 - Details of Mesh → Defaults → Element Size → Set Element Size to 5 mm
 - Details of Mesh → Sizing → Use Adaptive Sizing → Confirm that Use Adaptive Sizing is set to Yes
 - Generate Mesh



Workshop 06: Mesh

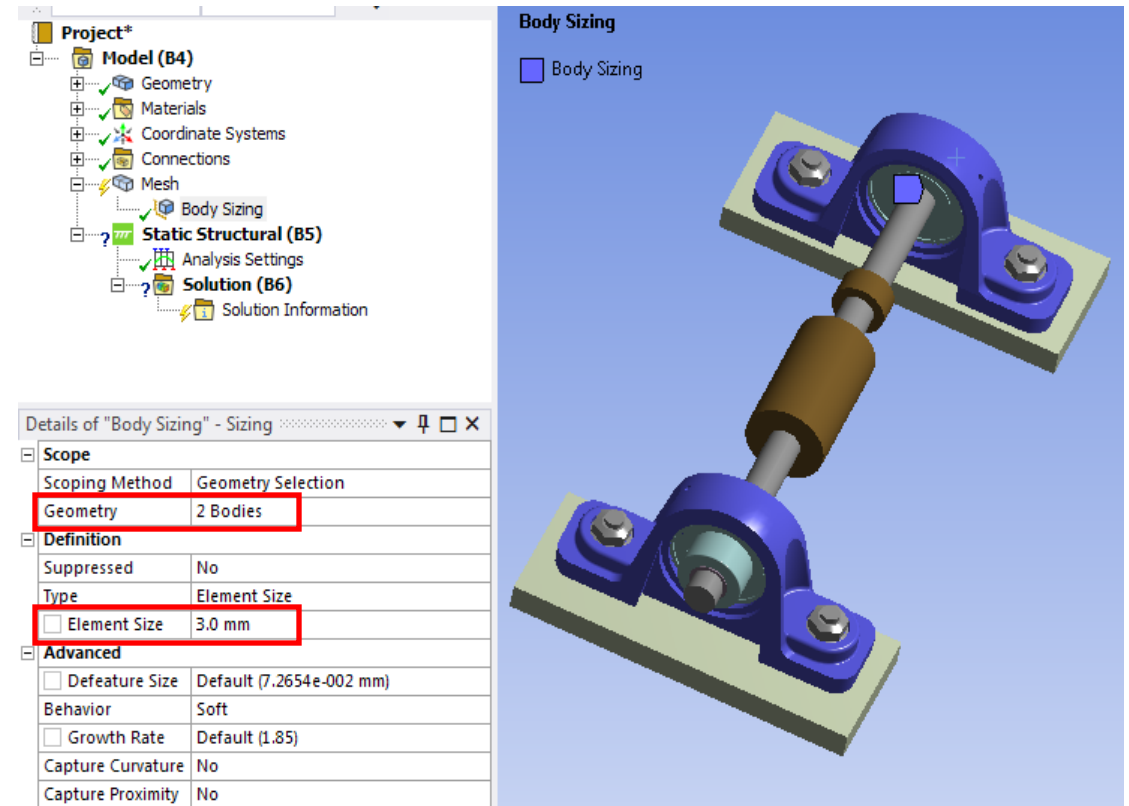
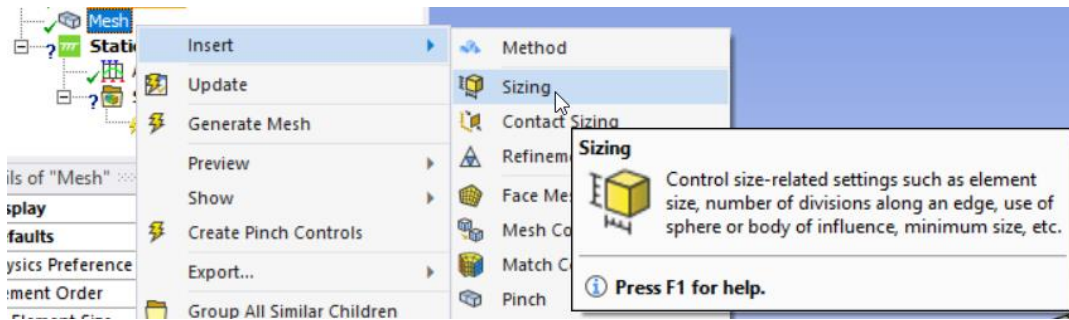
- Specify a global Element Size of 5 mm *without* Use Adaptive Sizing:
 - Details of Mesh → Sizing → Use Adaptive Sizing → Set Use Adaptive Sizing to No
 - Generate Mesh



Details of "Mesh"	
+	Display
-	Defaults
Physics Preference	Mechanical
Element Order	Program Controlled
<input type="checkbox"/> Element Size	5.0 mm
-	Sizing
Use Adaptive Sizing	No
<input type="checkbox"/> Growth Rate	Default (1.85)
<input type="checkbox"/> Max Size	Default (10.0 mm)
Mesh Defeaturing	Yes
<input type="checkbox"/> Defeature Size	Default (7.2654e-002 mm)
Capture Curvature	No
Capture Proximity	No
Size Formulation (Beta)	Program Controlled
Bounding Box Diagonal	292.2 mm
Average Surface Area	181.61 mm ²
Minimum Edge Length	5.7827e-002 mm
Enable Size Field (Beta)	No

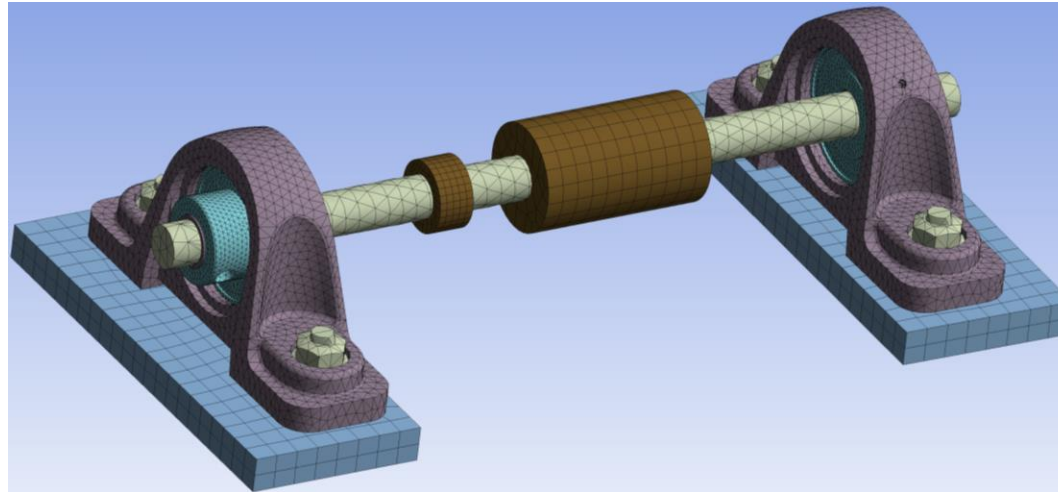
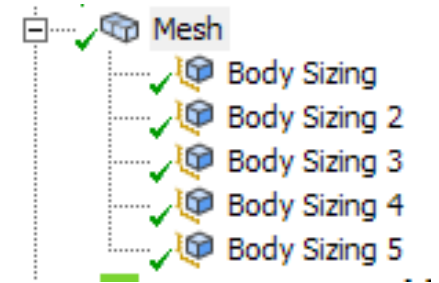
Workshop 06: Mesh

- Refine the mesh on the Housing parts only using a local body sizing control:
 - RMB – Mesh → Insert → Sizing → scope to housing bodies and Apply selection → Element Size = 3 mm



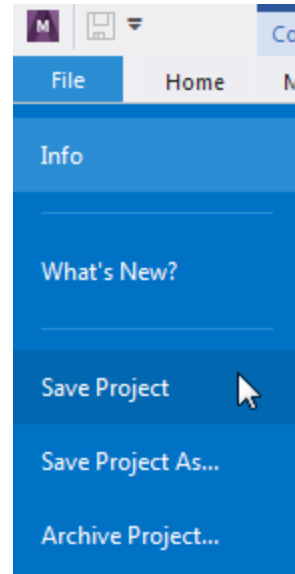
Workshop 06: Mesh

- Repeat the steps from previous slide to define the following mesh sizings:
 - Bearings: 1.5 mm
 - Grounds: 6 mm
 - Rings: 1 mm
 - Pulley 1 (the smallest one): 2 mm
- RMB—Mesh branch → Generate Mesh



Workshop 06: Mesh

- Save Project for later use if desired.



 **Ansys**

