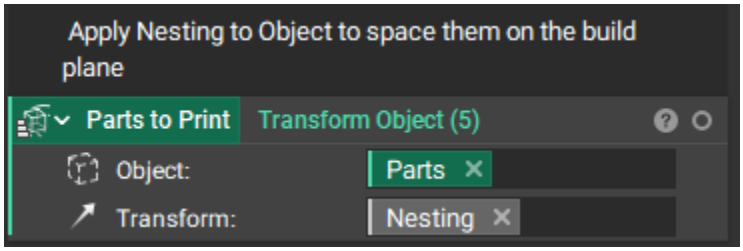
Follow Along: Slice and Export

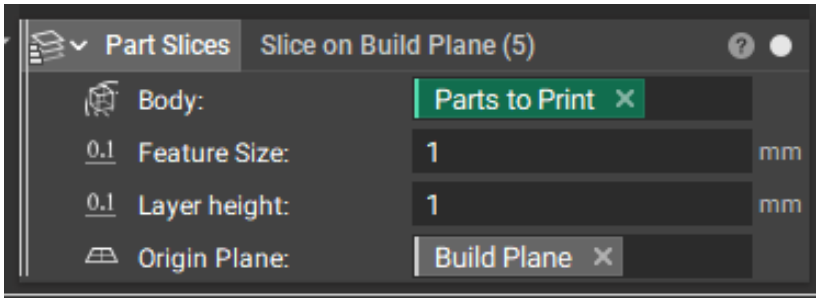
This lesson uses the Sequence block and custom blocks discussed in our Intro to Automation Course. If you are unfamiliar, I recommend returning to these lessons.

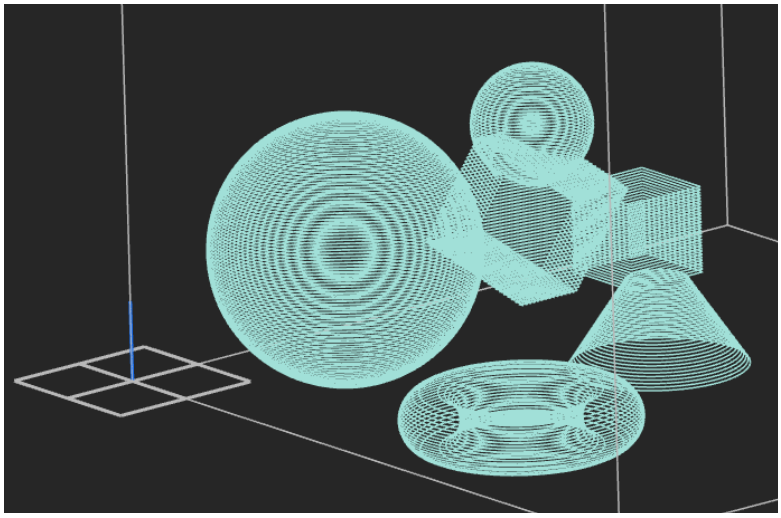
We will export the parts created in the "Follow Along: Print Preparation" lesson as slice data in this lesson. Please use that same file or download the nTop file below to follow along with the tutorial.

Step 1: Using the completed file from the last follow-along video in this course, make the previous **Transform Object** block with the Bounding Box 2D Nesting into a variable labeled Parts to Print.

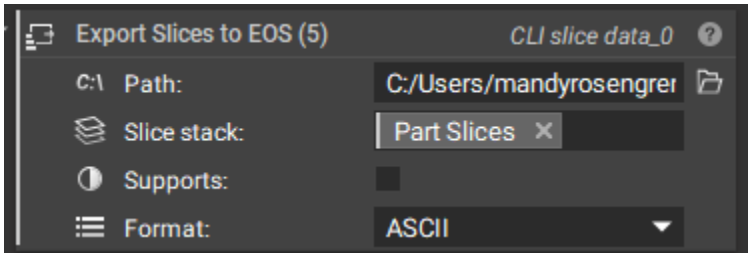


Step 2: Add a new section labeled “Slicing” and place the **Slice on Build Plane** block from the Additive Manufacturing tab in that section. For the body, use the Parts to Print variable, the feature size as 1mm, the layer height as 1mm, and the origin plane as the Build Plane. Make this a variable labeled “Part Slices.”

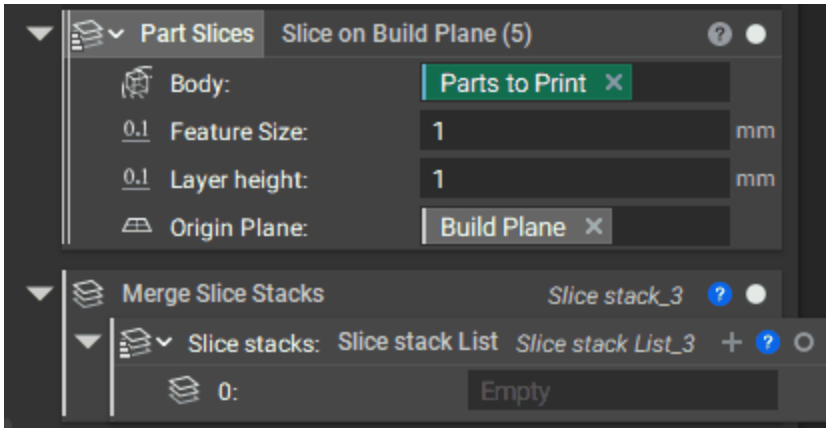




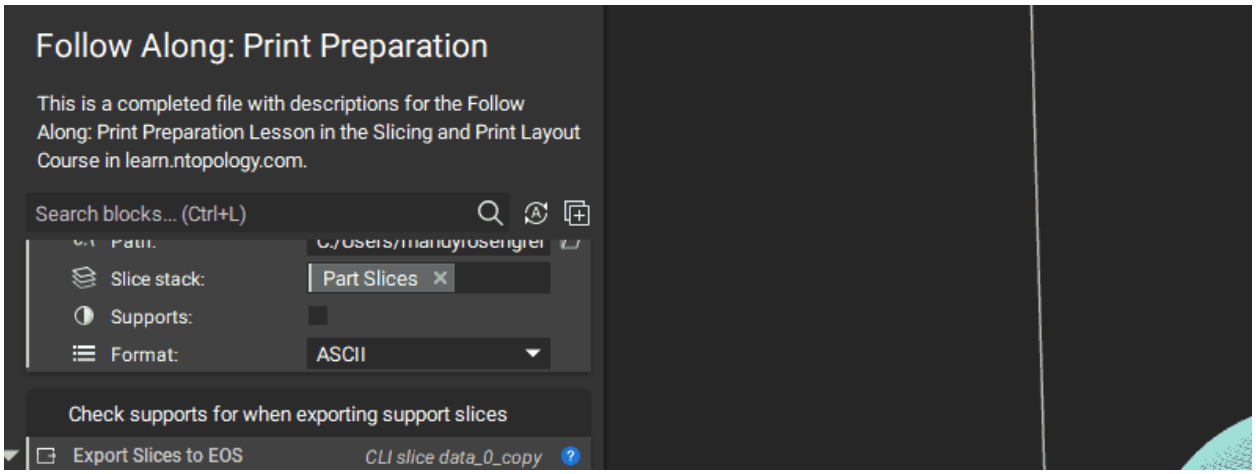
Step 3: Use the export **Slices to EOS** block and place the Part Slices variable into the slice stack input. Keep the supports unchecked and use the ASCII format.



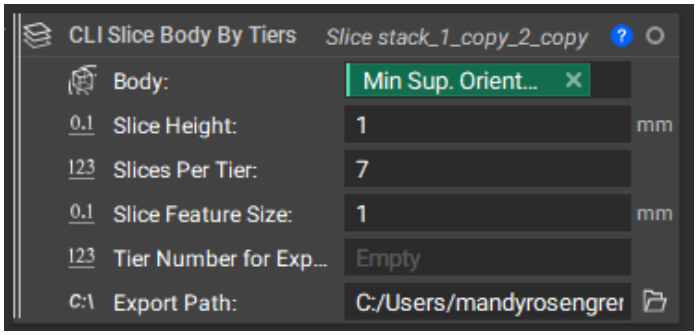
Step 4: You could also choose to merge these slices, so add a **Merge Slice Stack** block or **Slice Stack Boolean Union** block from the Manufacturing tab. For either of these options, remove the default **Slice Stack List** block since we already have our list, and place it in the slice stacks input.



Step 5: Add a new section called Custom Block Slicing, where we will walk through an example of a custom block sometimes used for slicing. Click on the view imported blocks, import block, and choose the CLI Slice Body by Tiers custom block that you can download in this lesson. If you are unfamiliar with custom blocks, please visit our Intro to Automation course linked in the description.



Step 6: For the body input of the CLI Slice Body by Tiers custom block, place the Min Sup. Orientations variable, located in the orienting parts section of the notebook. For the slice height, use 1mm, 7 for the slices per tier, and 1 for the slice feature size. For the tier number for export, we will use the **Sequence** block. If you are unfamiliar with the Sequence block, please visit our Intro to Automation course linked in the description.



Step 7: For the last step, add a **Sequence** block to the notebook and add a start input of 1, an increment of 1, and a total count of 13. This is a scalar list, but we need an integer, so go into the Block Details and place the Round option into the Tier Number for Export. You can then export this, and you will see the slices created.