

CNC ROUTER (BIG)

ASSIGNMENT 11

(DSL-732)

Introduction

The CNC router is used to fabricate a product using subtractive manufacturing. A computer numerical control (CNC) router is a computer-controlled cutting machine related to the hand-held router used for cutting various hard materials, such as wood, composites, aluminium, steel, plastics, glass, and foams. CNC routers can perform the tasks of many carpentry shop machines such as the panel saw, the spindle moulder, and the boring machine. They can also cut mortises and tenons. The software used to operate upon the CNC router is **Aspire 3D**



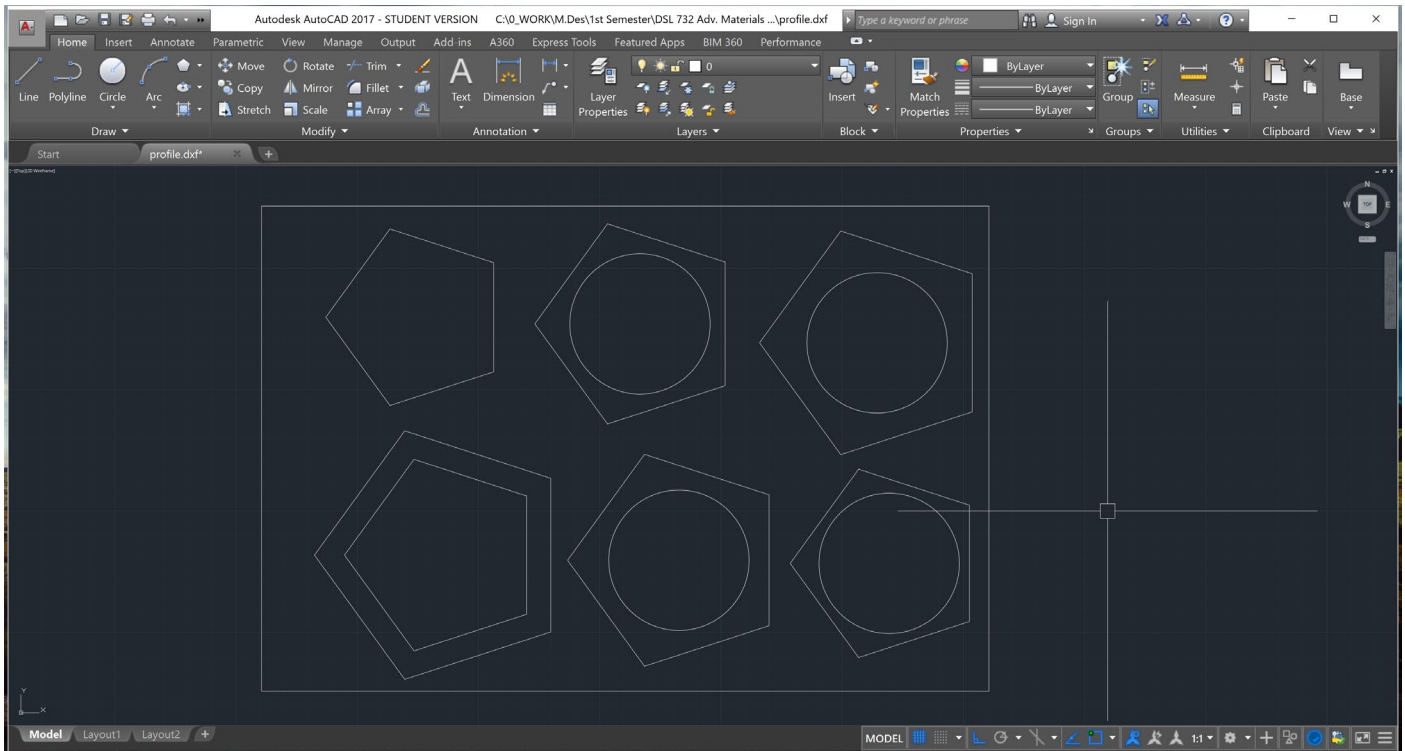
Aspire 3D

Aspire provides a powerful but intuitive software solution for creating and cutting parts on a CNC router. There are tools for 2D design and calculation of 2D toolpaths such as Profiling, Pocketing, and Drilling as well as 2.5D toolpaths including; V-Carving, Prism carving, Moulding Toolpaths, Fluting and even a decorative texturing strategy.

Process

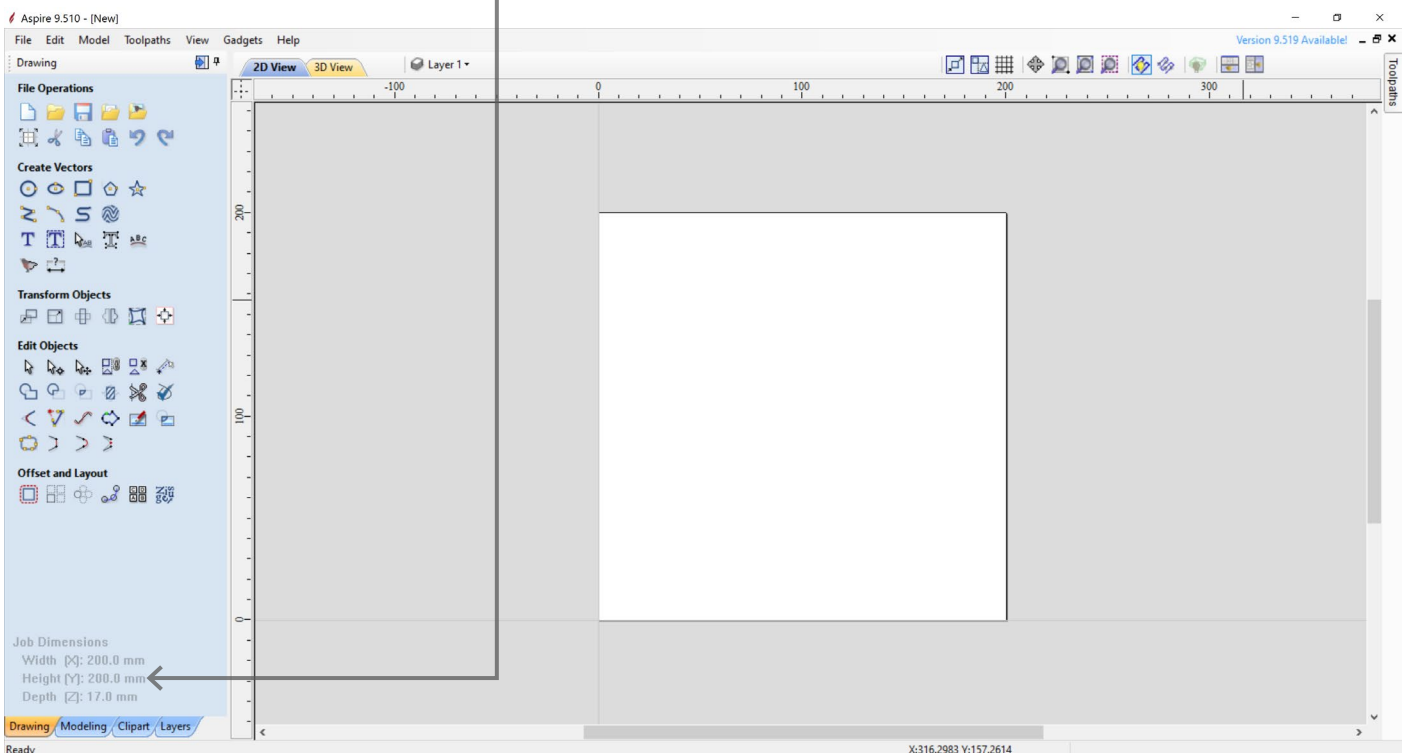
Step 1 : making CAD drawing

Creating a drawing in Autodesk AUTOCAD for the prototype-pen holder to be created. The units and dimensions are kept in consideration while creating the file and saving in .dxf format.



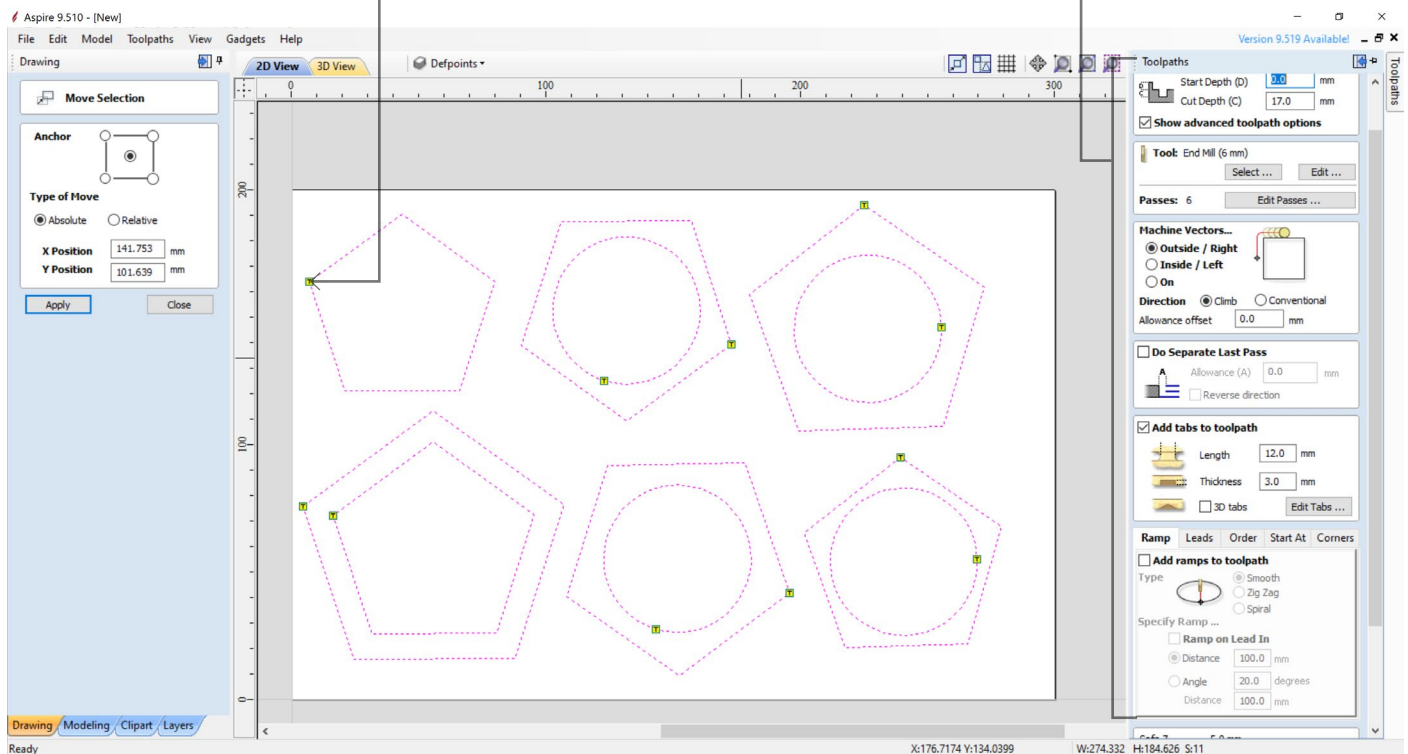
Step 2 : using ASPIRE 3D

Importing the file and creating sketch size according to the job dimensions.

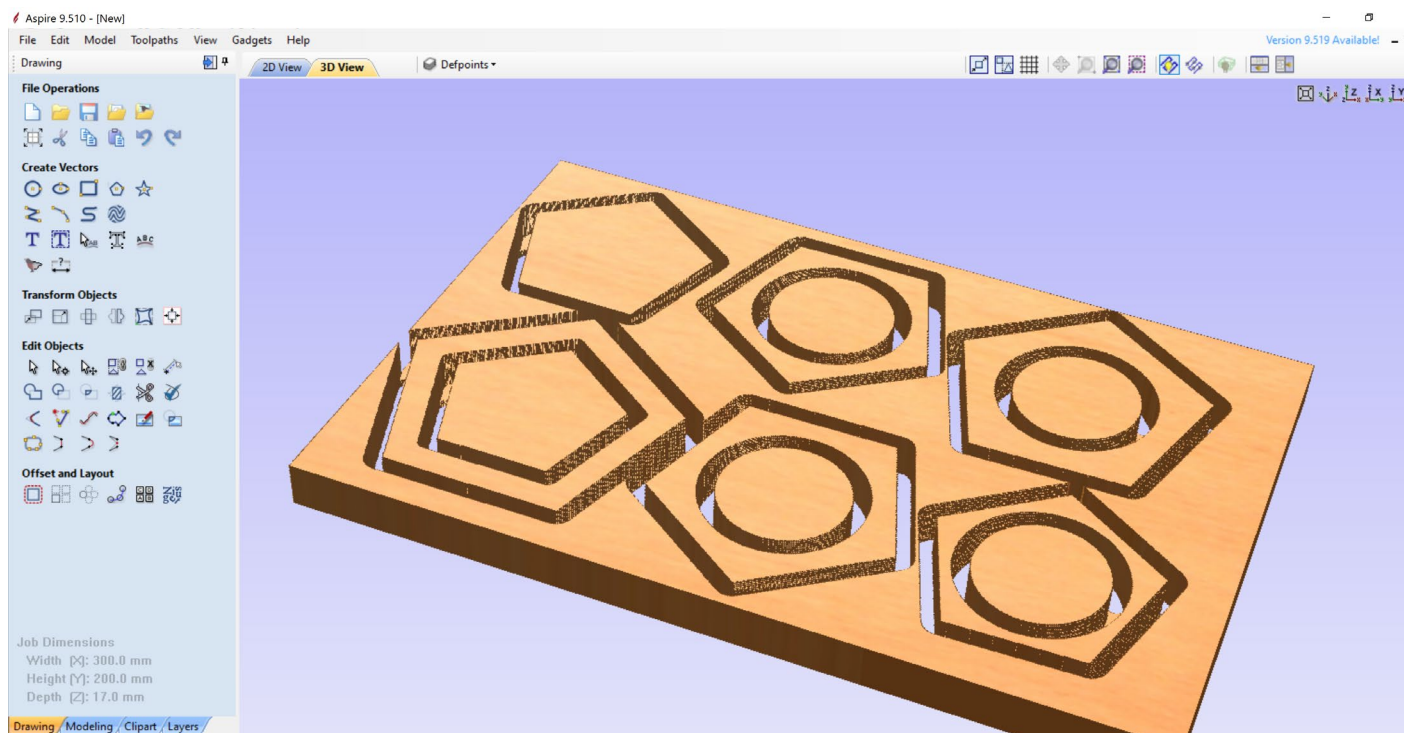


Step 3 : creating 2D profile toolpath

- i. adding cutting depth
- ii. selecting mill option
- iii. selecting machine vector to be **outside**
- iv. adding **tabs** to the toolpath



Step 4 : projecting toolpath onto 3D model



Step 5 : saving the profile toolpath

selecting CNC mill3 and saving as .tab file

Step 6 : setting then cutting tool(drill)



setting the coordinates(origin)

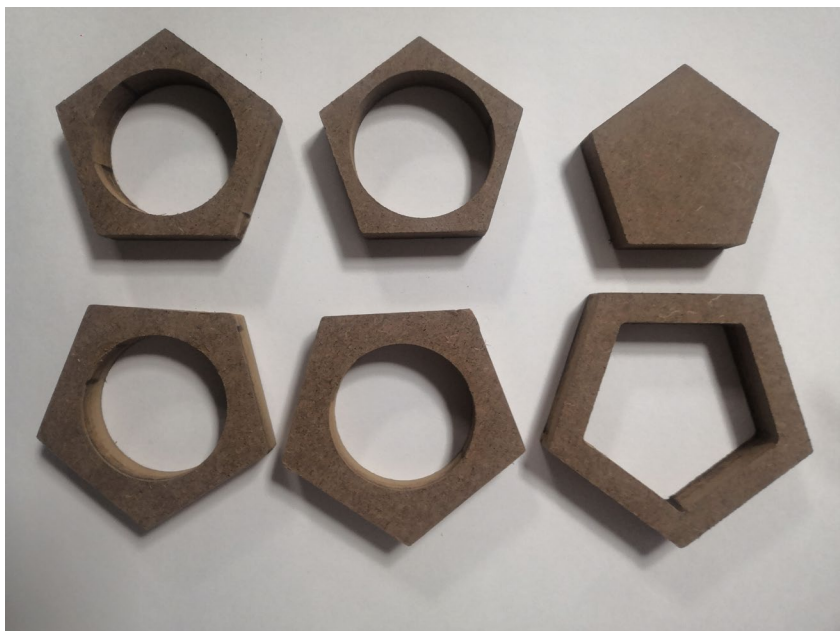
setting the datum



Step 7 : giving command to cut the profile



video link : <https://youtu.be/NPRSYE990q0>



Final Output



THANKYOU