MECE 4606 DIGITAL MANUFACTURING

Lampshade Lattice

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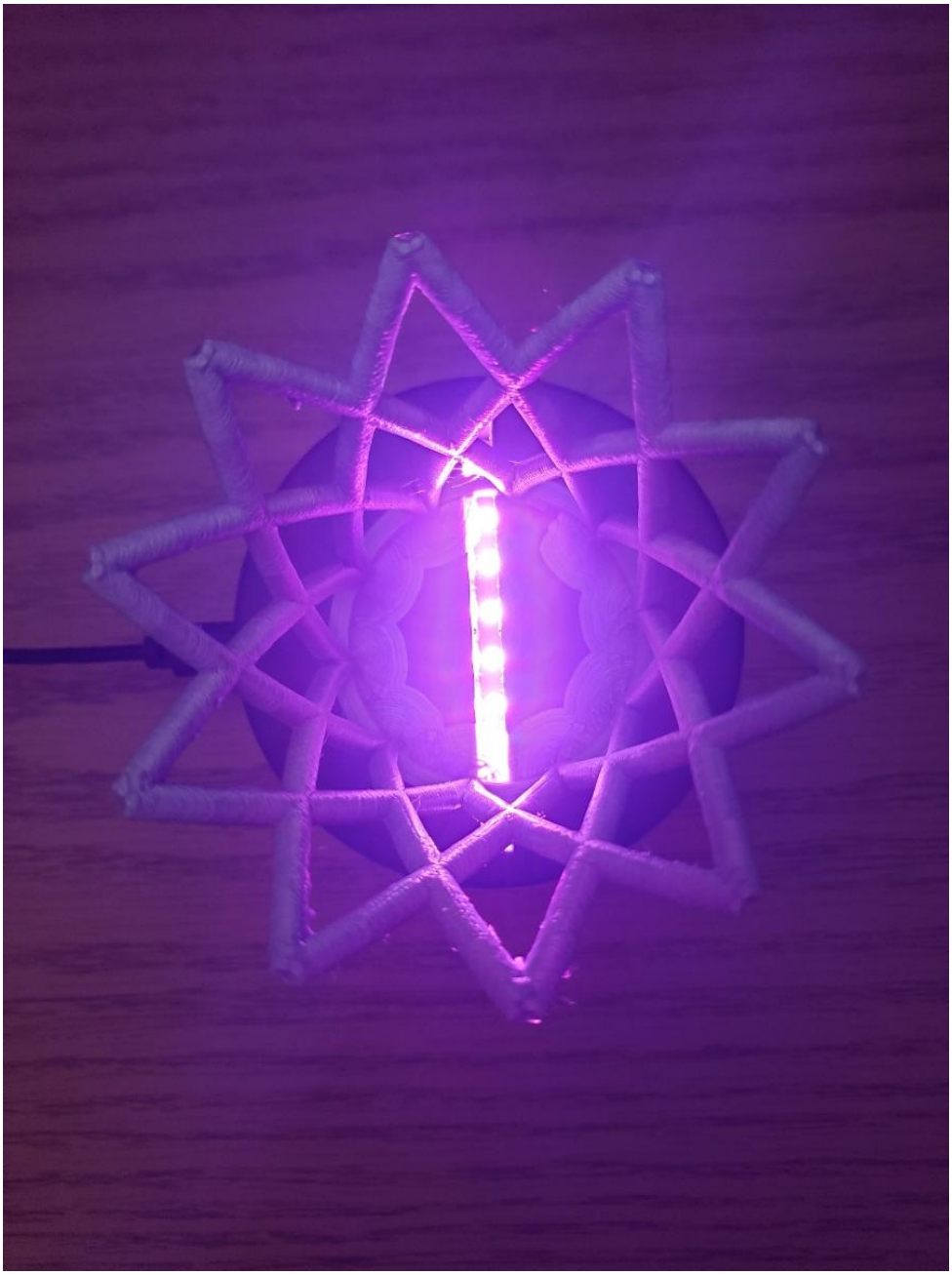
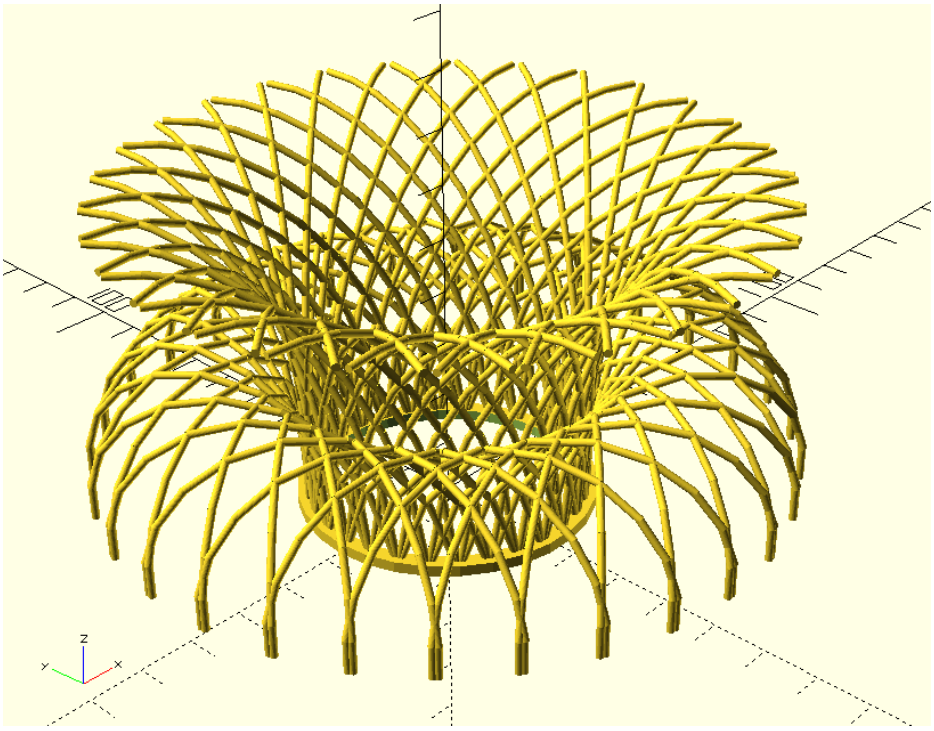
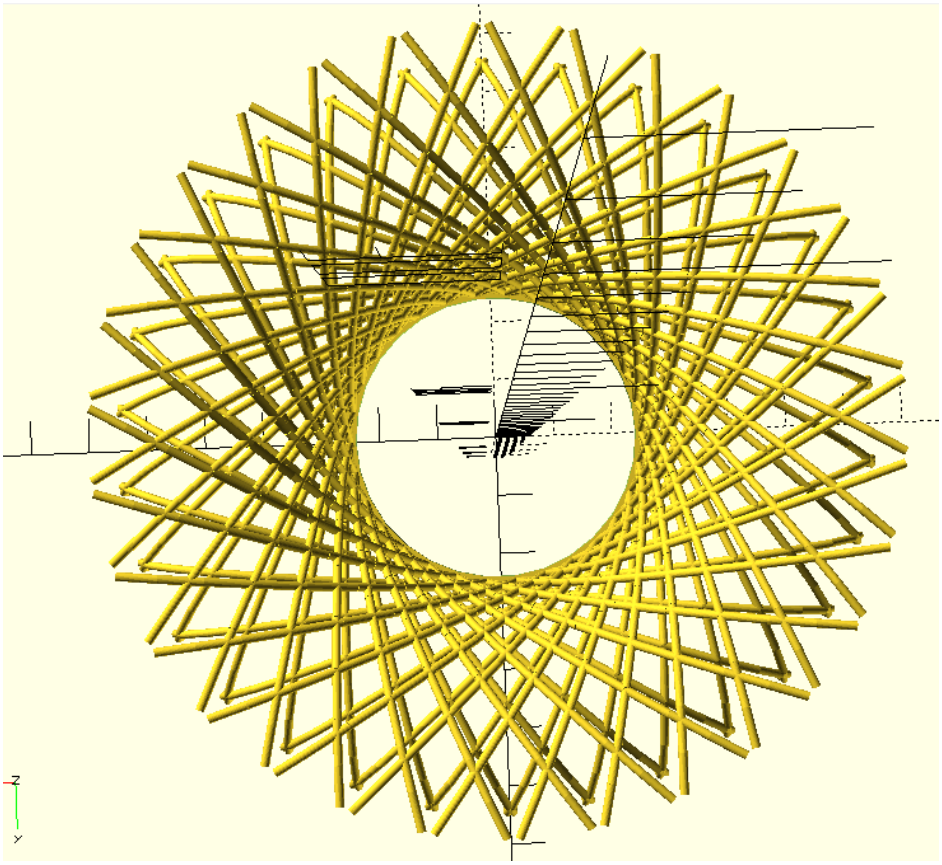
February 27th: 10 PM

120 Grace Hours Before Submission, +2 Hours Gained, 122 Hours After Submission

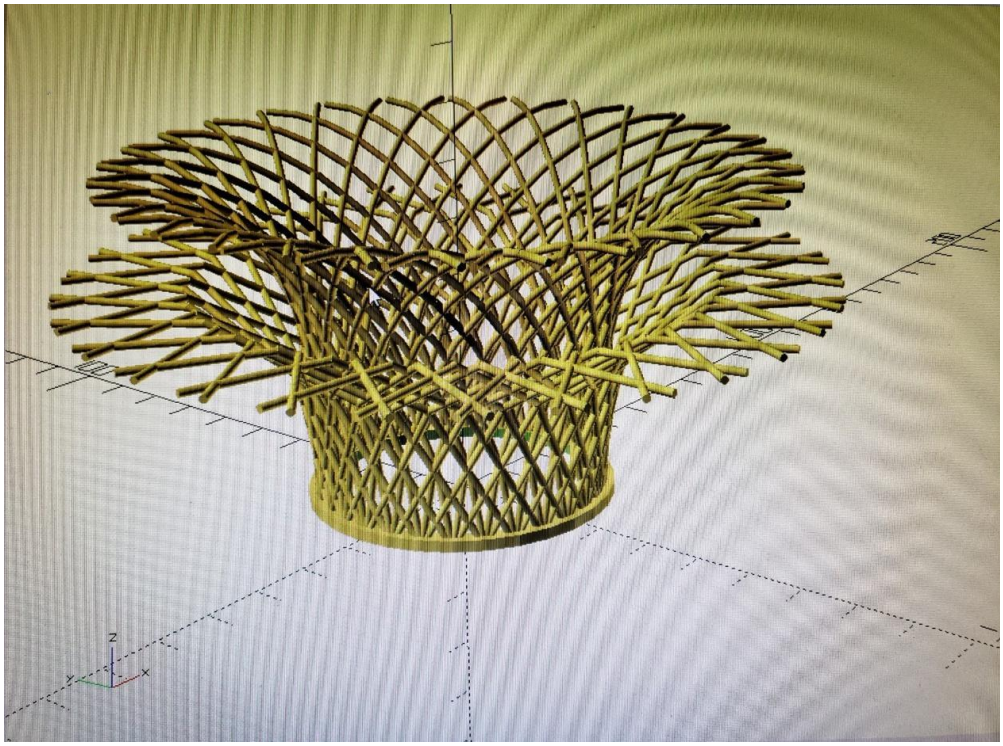


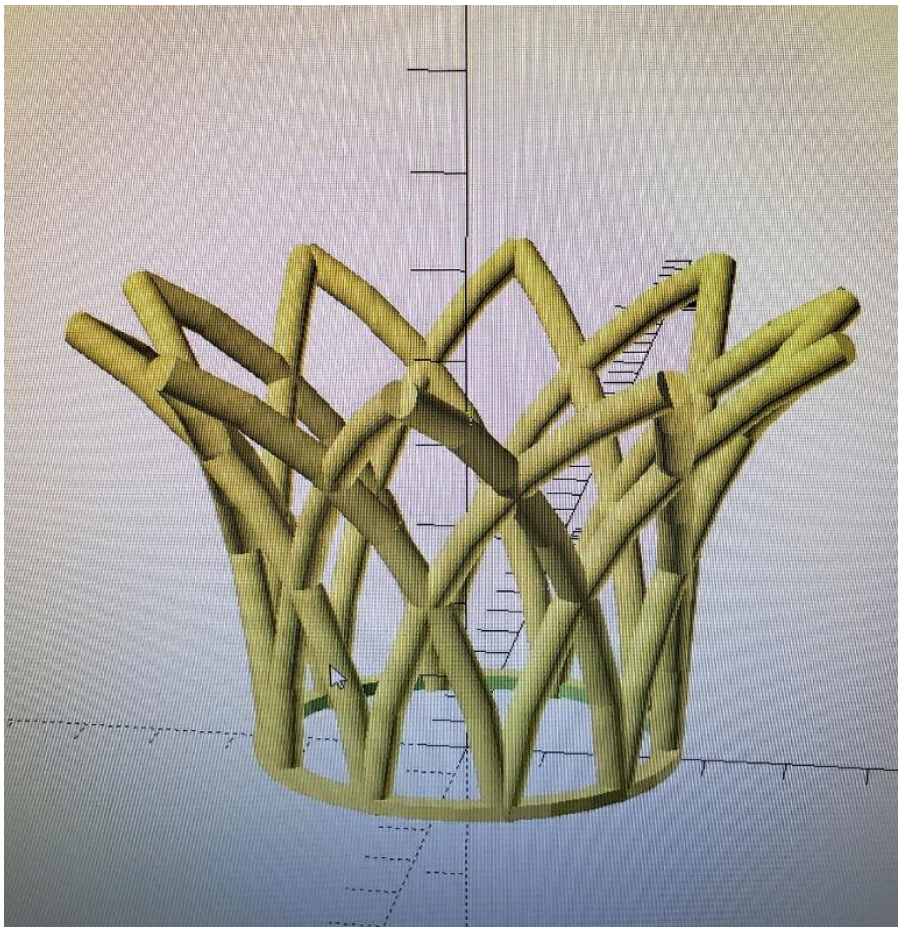
I. Design : CAD Rendering





Variant Designs

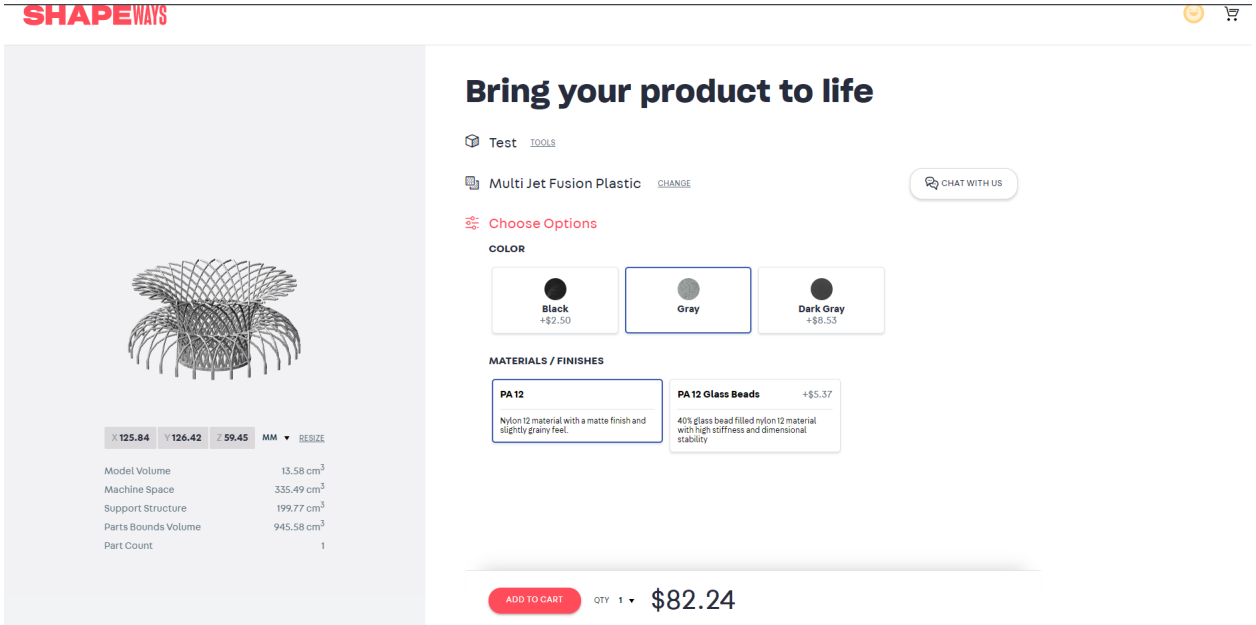




II. Algorithm Description

The algorithm works by calling various methods to construct different elements of the lampshade. It begins by creating a ring of inner radius, outer radius and height. It then calls a method that builds two ‘flowers’ which creates a lattice pattern with branches at a specified angle, branching in both the positive and negative direction of the angle. These branches recursively call themselves to a specified depth, which can be altered in order to produce different/alternative designs. Further description can be found in the code appendix at the end of the document.

III. Upload to Shapeways



IV. 3-D Physical Print Out

10. 30pts 3D Printed lampshade
11. 10pts Glamour photo of printed lampshade with light, in dark
12. 10pt lampshade rendering posted on Ed at least 24h day before the deadline (show screenshot):