Background & Requirements

Sponsored by Northrop Grumman Corporation, the project goal is to create an aircraft modeling software that will be integrated into a comprehensive program that tests dynamic conditions of a user defined airplane.

- Utilize interpolated cubic spline curves to build aircraft geometry
- Parametrically define curves and surfaces
- Accessible user interface
- Use of user-defined aircraft constants to determine aircraft geometry

Project Goals

- Create modeling software in Blender using Python Code
- Allow user defined aircraft parameters
- Create all major structural profile out of cubic splines so that it can accurately output results in a computational fluid dynamic (CFD) program.
- Have capability to create full aircraft model and surface rendering

Current Progress

- Successful output of wing shape using cubic spline to form airfoil, with option to adjust sweep, dihedral, and taper
- Created a close approximation of a cubic spline fuselage in python

Future Steps

- Add code to make trailing edge have nonzero thickness
- Continue to develop code to output more complex shapes, such as propellers
- Combine separate structures into complete aircraft
- Further develop code that does output a cubic spline curves and not close approximations