

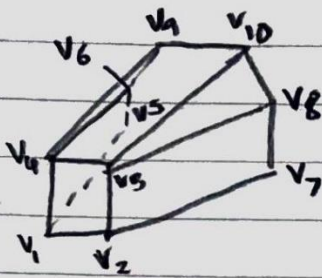
My Design Document

Harman Ryan Singh Uppal

Student ID: 159115729 Username: uppalhrs

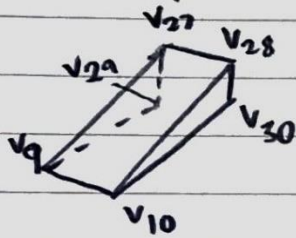
Object description: My custom object is a futuristic spaceship. I split the design into multiple parts as it is very complex to model in one diagram.

Nose



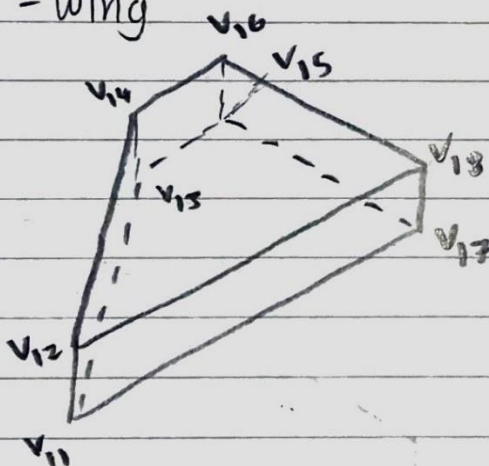
$$\begin{aligned} v_1 &= (-0.05, 0.125, 1.5) & v_6 &= (-0.5, 0.125, -0.5) \\ v_2 &= (0.125, -0.125, 1.5) & v_7 &= (0.5, -0.125, -0.5) \\ v_3 &= (0.125, 0.125, 1.5) & v_8 &= (0.5, 0.25, -0.5) \\ v_4 &= (-0.125, 0.125, 1.5) & v_9 &= (-0.25, 0.5, -0.5) \\ v_5 &= (-0.5, -0.125, -0.5) & v_{10} &= (0.25, 0.5, -0.5) \end{aligned}$$

Cockpit



$$\begin{aligned} v_{27} &= (-0.25, 1, -2) \\ v_{28} &= (0.25, 1, -2) \\ v_{29} &= (-0.25, 0.5, -2) \\ v_{30} &= (0.25, 0.5, -2) \end{aligned}$$

Left-wing

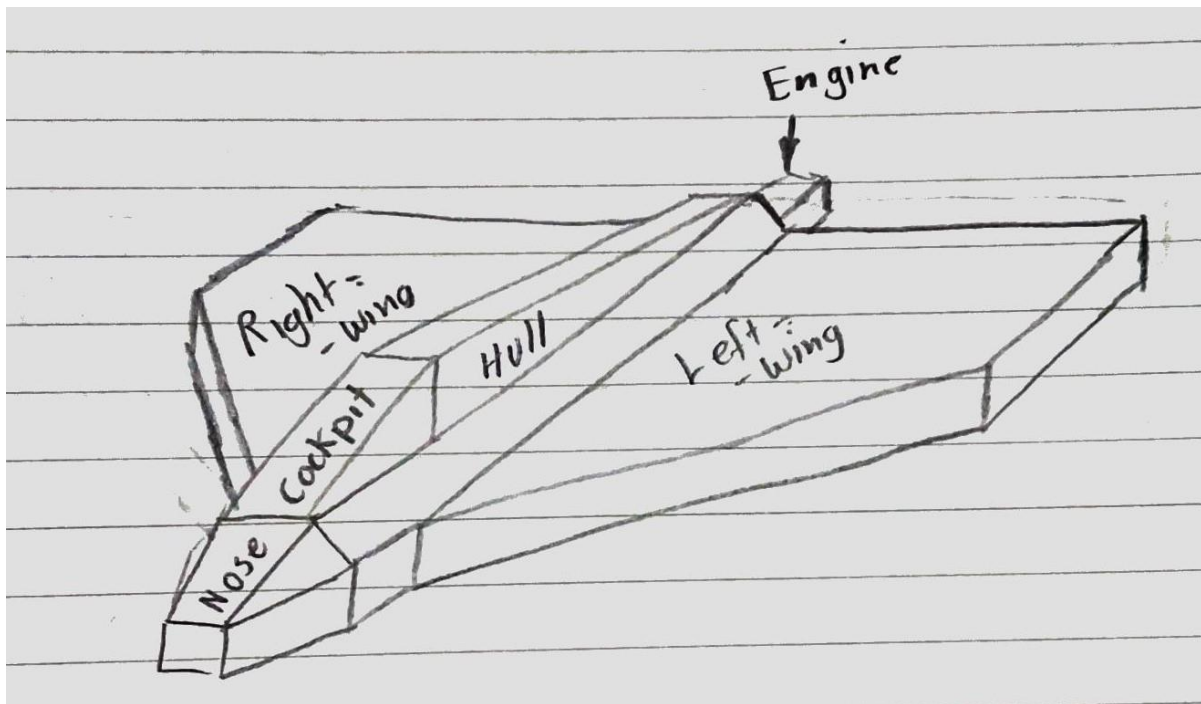


$$\begin{aligned} v_{11} &= (-0.5, -0.125, -1.5) \\ v_{12} &= (-0.5, 0.25, -1.5) \\ v_{13} &= (-7, -0.05, -5) \\ v_{14} &= (-7, 0.05, -5) \\ v_{15} &= (-7, -0.05, -6) \\ v_{16} &= (-7, 0.05, -6) \\ v_{17} &= (-0.5, -0.125, -6) \\ v_{18} &= (-0.5, 0.25, -6) \end{aligned}$$

$$\begin{aligned} V_{19} &= (0.5, -0.125, -1.5) \\ V_{20} &= (0.5, 0.25, -1.5) \\ V_{21} &= (7, -0.05, -5) \\ V_{22} &= (7, 0.05, -5) \\ V_{23} &= (7, -0.05, -6) \\ V_{24} &= (7, 0.05, -6) \\ V_{25} &= (0.5, -0.125, -6) \\ V_{26} &= (0.5, 0.25, -6) \end{aligned}$$

$$\begin{aligned} V_{31} &= (-0.25, 0.5, -6) \\ V_{32} &= (0.25, 0.5, -6) \end{aligned}$$

$$\begin{aligned} V_{36} &= \begin{Bmatrix} -0.25 & -0.25 & -6 \end{Bmatrix} \\ V_{35} &= \begin{Bmatrix} 0.25 & -0.25 & -6 \end{Bmatrix} \\ V_{34} &= \begin{Bmatrix} 0.25 & -0.125 & -6 \end{Bmatrix} \\ V_{33} &= \begin{Bmatrix} -0.25 & -0.125 & -6 \end{Bmatrix} \\ V_{37} &= \begin{Bmatrix} -0.125 & -0.125 & -7 \end{Bmatrix} \\ V_{38} &= \begin{Bmatrix} 0.125 & -0.125 & -7 \end{Bmatrix} \\ V_{39} &= \begin{Bmatrix} 0.125 & 0.125 & -7 \end{Bmatrix} \\ V_{40} &= \begin{Bmatrix} -0.125 & 0.125 & -7 \end{Bmatrix} \end{aligned}$$



Face	Vertices
Nose face	V1, v2, v3, v4
Nose left side	V5, v1, v4, v6
Nose right side	V2, v7, v8, v3
Nose top	V4, v3, v10, v9
Nose top left	V6, v4, v9
Nose top right	V3, v8, v10
Left wing front body	V11, v5, v6, v12
Left wing front	V13, v11, v12, v14
Left wing side	V15, v13, v14, v16
Left wing back	V17, v15, v16, v18
Left wing top	V18, v16, v14, v12
Right wing front body	V7, v19, v20, v8
Right wing front	V19, v21, v22, v20
Right wing side	V21, v23, v24, v22
Right wing back	V23, v25, v26, v24
Right wing top	V24, v26, v20, v22
Cockpit front to top	V9, v10, v28, v27
Cockpit left	V29, v9, v27
Cockpit right	V10, v30, v28
Rear guard top	V32, v31, v27, v28
Rear guard left	V31, v29, v27
Rear guard right	V30, v32, v28
Wing to body join left	V18, v6, v9, 31
Wing to body joint right	V8, v26, v32, v10
Engine top	V39, v40, v36, v35
Engine left	V37, v33, v36, v40
Engine right	V34, v38, v39, v35
Engine bottom	V34, v33, v37, v38
Engine back	V38, v37, v40, v39
Back	V25, v17, v18, v31, v32, v26
Bottom	V15, v17, v25, v23, v21, v19, v11, v13
Bottom nose	V11, v19, v7, v2, v1, v5