



Computational Aircraft Prototype Syntheses

AIM Programming

Input, Execution and Output

For ESP Rev 1.28

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Build an AIM (`theAIM`) for the simple analysis: `tankCalc`

- Review the input requirements for the analysis (next page)
- Determine what outputs you wish to expose and how they need to be retrieved
- Map out which AIM functions will be responsible for declaring the variables and filling them
- Code it up!
- *Make* and other ancillary files provided
- Hints:

Look at the following utility functions (*lectures/session08.pdf*):

- `aim_file`
- `aim_system`
- `aim_fopen`

The simple analysis: `tankCalc`

Computes a fuel tank's mass given densities and a triangulation

- Input file format – ASCII
 - An Integer – 0
 - 2 doubles – wall density ($\frac{\text{mass}}{\text{area}}$) and fuel density ($\frac{\text{mass}}{\text{volume}}$)
 - 9 floating point numbers – 3 coordinates for 3 points for a triangle
There may be as many triangles as necessary, which should represent a closed volume
See `tankCalc.in` for an example
- Output file format – ASCII
 - 3 floating point numbers on a single line
 - These represent the area, volume and mass of the fuel tank
See `tankCalc.out` for an example
- Command-line execution: `tankCalc inFile outFile`