engDevTools Documentation

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Started: 05-24-2018

1 Architecture Overview

2 Base Modules

2.1 Modules

2.1.1 vectorOps

Status: In Development
Purpose: Handle vector operations
Capability:

1. Vector Arithmetic

    (a) Vector Addition
    (b) Vector Subtraction

2. Vector Operations

    (a) Cross Product
    (b) Dot Product
    (c) Unit Vector
    (d) Vector Magnitude

2.1.2 matrixOps

Status: In Development
Purpose: Handle 3x3 matrix operations
Capability:

1. Initialization/Freeing

    (a) Matrix Initialization

2. Set Matrix

    (a) Zeros Matrix
    (b) Ones Matrix
    (c) Identity Matrix

3. Matrix Arithmetic

    (a) Matrix Addition
    (b) Matrix Subtraction
    (c) Matrix Multiplication
    (d) Scalar * Matrix

4. Matrix Operations

(a) Matrix Trace

(b) Matrix Determinant

(c) Matrix Transpose

5. Matrix Checks

(a) Matrix isEqual

2.1.3   arrayOps

Status: In Development
Purpose: Handle nxn matrix operations
Capability:

1. Initialization/Freeing

(a) Array Initialization

(b) Array Free

2. Set Array

(a) Zeros Array

(b) Ones Array

(c) Identity Array

3. Array Arithmetic

(a) Array Addition

(b) Array Subtraction

(c) Array Multiplication

(d) Scalar * Array

4. Array Operations

(a) Array Transpose

5. Array Checks

(a) Array isEqual

6. Miscellaneous

(a) 2x2 Determinant

2.1.4 printOps

Status: In Development Purpose: Basic printing capability Capability:

1. Printing Variables

    (a) Print Boolean
    (b) Print Scalar
    (c) Print Vector
    (d) Print Matrix
    (e) Print Array

2.1.5 writeOps

Status: Not Started

2.1.6 readOps

Status: Not Started

3 Basic Simulation Modules

3.1 Modules

3.1.1 Astrodynamics

Status: Not Started

3.1.2 Electronics

Status: Not Started

3.1.3 Thermodynamics

Status: Not Started

3.1.4 Aerodynamics

Status: Not Started

3.1.5 Mass Properties

Status: Not Started

4 Advanced Simulation Modules

1. Hello!

5 User Interface

1. Hello!

6 Unit/Regression Testing

1. Hello!

7 Data Pre-processing

1. Hello!

8 Data Post-processing

1. Hello!

9 Support Functions/Scripts

1. Hello!