# Test

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# Contents

# Chapter 1

# J118

## 1.1 Purpose

TODO: Fill out this section

## 1.2 Installation

### 1.2.1 Step 1: Opening the box

etc...

# Chapter 2

# Todo List

**Class J118::ErrorHandling::Exception**

Implement into other classes (Ex. Matrix)

create constructors (Default and normal)

**Class J118::Math::Vector2D**

: add overloaded operators

: add cross product

# Chapter 3

# Hierarchical Index

## 3.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

# Chapter 4

# Class Index

## 4.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

# Chapter 5

# Class Documentation

## 5.1 J118::ErrorHandling::Exception Class Reference

`#include <Exception.h>`

### Protected Attributes

- int **error_id**
- std::string **name**
- std::string **desc**

### 5.1.1 Detailed Description

**Todo** Implement into other classes (Ex. Matrix)

create constructors (Default and normal)

Definition at line 21 of file Exception.h.

## 5.2 J118::Math::Matrix Class Reference

### Public Member Functions

- **Matrix** (uint32_t row_c, uint32_t col_c)
- double **getElement** (uint32_t r, uint32_t c)
- void **setElement** (uint32_t r, uint32_t c, double v)
- Matrix **multiply** (double scale)
- uint32_t **getRows** ()
- uint32_t **getCols** ()
- void **operator=** (const Matrix &d)

### Protected Attributes

- uint32_t **rows**
- uint32_t **cols**
- double ** **data**

### 5.2.1 Detailed Description

Definition at line 24 of file Matrix.h.

## 5.3 J118::Math::MatrixMultiplyInvalDems Class Reference

Inheritance diagram for J118::Math::MatrixMultiplyInvalDems:

## 5.4 J118::Math::MatrixNotInitialized Class Reference

Inheritance diagram for J118::Math::MatrixNotInitialized:

Collaboration diagram for J118::Math::MatrixNotInitialized:

### 5.4.1 Detailed Description

Definition at line 18 of file Matrix.cpp.

## 5.5 J118::Math::Vector2D Class Reference

`#include <Vector2D.h>`

### Public Member Functions

- Vector2D ()

  *Default Initializer.*
- Vector2D (double x, double y)

  *ComponentIinitializer.*
- double getX ()

  *Get the X component.*
- double getY ()

  *Get the Y component.*
- Vector2D add (Vector2D augend)

  *adds a vector to this one*
- Vector2D add (double x, double y)

  *Adds the given components to this vector and return the result.*
- Vector2D operator+ (Vector2D augend)

  *adds a vector to this one (Operator Version)*
- Vector2D operator- (Vector2D subtrahend)

  *subtracts a vector to this one (Operator Version)*
- double dotProduct (Vector2D multiplier)

  *Calculate the dot product of 2 Vector2D.*
- double operator∗ (Vector2D multiplier)

  *Calculate the dot product of 2 Vector2D (Operator Version)*

### Static Public Member Functions

- static Vector2D add (Vector2D augend_1, Vector2D augend_2)

  *Adds 2 Vector2D.*
- static double dotProduct (Vector2D multiplicand, Vector2D multiplier)

  *Calculate the dot product of 2 Vector2D.*

## 5.5.1 Detailed Description

**Todo** : add overloaded operators

: add cross product

Definition at line 21 of file Vector2D.h.

## 5.5.2 Constructor & Destructor Documentation

### 5.5.2.1 J118::Math::Vector2D::Vector2D ( )

Default Initializer.

Initializes the object to a default value of <0,0>

Definition at line 22 of file Vector2D.cpp.

### 5.5.2.2 J118::Math::Vector2D::Vector2D ( double *x*, double *y* )

ComponentIinitializer.

Initializes the object to a default value of <x,y>

**Parameters**

| | |
|---|---|
| *x* | The X component of the vector |
| *y* | The Y component of the vector |

Definition at line 36 of file Vector2D.cpp.

## 5.5.3 Member Function Documentation

### 5.5.3.1 Vector2D J118::Math::Vector2D::add ( Vector2D *augend_1*, Vector2D *augend_2* ) [static]

Adds 2 Vector2D.

Adds 2 Vector2D values

**Parameters**

| | |
|---|---|
| *augend_1* | The first vector |
| *augend_2* | The first vector |

**Returns**

The sum of the 2 augend Vector2D

Definition at line 71 of file Vector2D.cpp.

#### 5.5.3.2 Vector2D J118::Math::Vector2D::add ( Vector2D *augend* )

adds a vector to this one

Adds an Vector2D values with this vector and returns the sum

**Parameters**

| | |
|---|---|
| *augend* | The vector to add to this one |

**Returns**

The sum of this vector and the augend vector

Definition at line 84 of file Vector2D.cpp.

#### 5.5.3.3 Vector2D J118::Math::Vector2D::add ( double *x*, double *y* )

Adds the given components to this vector and return the result.

Adds the given components to this vector and return the result

**Parameters**

| | |
|---|---|
| *x* | The X component to add |
| *y* | The Y component to add |

**Returns**

The sum of of this vector and the given components

Definition at line 124 of file Vector2D.cpp.

#### 5.5.3.4 double J118::Math::Vector2D::dotProduct ( Vector2D *multiplicand*, Vector2D *multiplier* ) [static]

Calculate the dot product of 2 Vector2D.

Calculate the dot product of 2 Vector2D

**Parameters**

| | |
|---|---|
| *multiplicand* | The first vector of the dot product |
| *multiplier* | The second vector of the dot product |

**Returns**

The dot product of multiplicand and multiplier

Definition at line 138 of file Vector2D.cpp.

#### 5.5.3.5 double J118::Math::Vector2D::dotProduct ( Vector2D *multiplier* )

Calculate the dot product of 2 Vector2D.

Calculate the dot product of 2 Vector2D where this Vector2D is the multiplicand

**Parameters**

| | |
|---|---|
| *multiplier* | The second vector of the dot product |

**Returns**

The dot product of multiplicand and multiplier

Definition at line 151 of file Vector2D.cpp.

#### 5.5.3.6 double J118::Math::Vector2D::getX ( )

Get the X component.

**Returns**

the X component of the vector

Definition at line 47 of file Vector2D.cpp.

#### 5.5.3.7 double J118::Math::Vector2D::getY ( )

Get the Y component.

**Returns**

the Y component of the vector

Definition at line 57 of file Vector2D.cpp.

#### 5.5.3.8 double J118::Math::Vector2D::operator∗ ( Vector2D *multiplier* )

Calculate the dot product of 2 Vector2D (Operator Version)

Calculate the dot product of 2 Vector2D where this Vector2D is the multiplicand

**Parameters**

| | |
|---|---|
| *multiplier* | The second vector of the dot product |

**Returns**

The dot product of multiplicand and multiplier

Definition at line 164 of file Vector2D.cpp.

#### 5.5.3.9 Vector2D J118::Math::Vector2D::operator+ ( Vector2D *augend* )

adds a vector to this one (Operator Version)

Adds an Vector2D values with this vector and returns the sum

**Parameters**

| | |
|---|---|
| *augend* | The vector to add to this one |

**Returns**

The sum of this vector and the augend vector

Definition at line 97 of file Vector2D.cpp.

#### 5.5.3.10 Vector2D J118::Math::Vector2D::operator- ( Vector2D *subtrahend* )

subtracts a vector to this one (Operator Version)

Subtracts an Vector2D values with this vector and returns the difference

**Parameters**

| | |
|---|---|
| *subtrahend* | The vector to add to this one |

**Returns**

The difference of this vector and the subtrahend vector

Definition at line 110 of file Vector2D.cpp.

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