CAD

Generated by Doxygen 1.8.11

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2.1 File List

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Class Documentation

3.1 point2D Struct Reference

Points with 2 coordinates.

`#include <Point.h>`

Public Attributes

- double **x**
- double **y**

3.1.1 Detailed Description

Points with 2 coordinates.

The documentation for this struct was generated from the following file:

- /home/mira/CLionProjects/CAD/Point.h

3.2 point3D Struct Reference

Points with 3 coordinates.

`#include <Point.h>`

Public Attributes

- double **x**
- double **y**
- double **z**

3.2.1 Detailed Description

Points with 3 coordinates.

The documentation for this struct was generated from the following file:

- /home/mira/CLionProjects/CAD/Point.h

Chapter 4

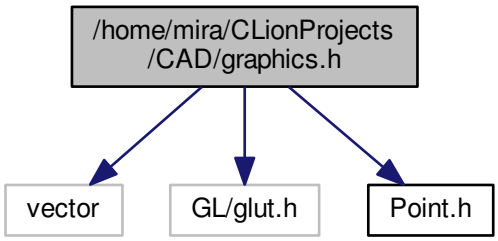
File Documentation

4.1 /home/mira/CLionProjects/CAD/graphics.h File Reference

Functions for displaying 2D projections and 3D Model.

```
#include <vector>
#include <GL/glut.h>
#include "Point.h"
```

Include dependency graph for graphics.h:



Functions

- void Display2DProj (vector< point2D > points, vector< vector< int >> adjList)

  Display 2D projection.
- void Display3D (vector< point3D > points, vector< vector< int >> adjList)

  Display 3D model.

4.1.1 Detailed Description

Functions for displaying 2D projections and 3D Model.

Author

Mira Kabra

Version

1.0

Date

04-03-2018

Note

The current proposed structure. Implementation yet to be started.

4.1.2 Function Documentation

4.1.2.1 void Display2DProj (vector< point2D > *points,* vector< vector< int >> *adjList*)

Display 2D projection.

Parameters

points	list of 2D points
adjList	Shows the connectivity in terms of point number

4.1.2.2 void Display3D (vector< point3D > *points,* vector< vector< int >> *adjList*)

Display 3D model.

Parameters

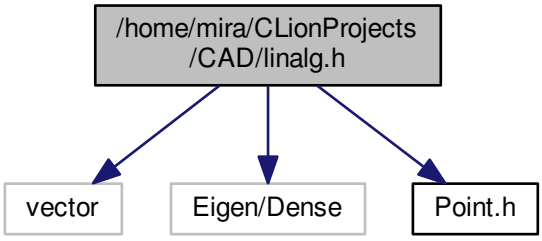
points	list of 3D points
adjList	Shows connectivity in terms of point number

4.2 /home/mira/CLionProjects/CAD/linalg.h File Reference

Linear Algebraic Transformations using Eigen3.

```
#include <vector>
#include <Eigen/Dense>
#include "Point.h"
```

Include dependency graph for linalg.h:



Functions

- vector< point2D > Projection (vector< point3D > points, point3D perpendicular)
- vector< point3D > Build3D (vector< point2D > projList1, vector< point2D > projList2, point2D Ori1[3], point2D Ori2[3])

4.2.1 Detailed Description

Linear Algebraic Transformations using Eigen3.

Author

Mira Kabra

Version

1.0

Date

04-03-2018

Note

The current proposed structure. Implementation yet to be started.

4.2.2 Function Documentation

4.2.2.1 vector<point3D> Build3D (vector< point2D > *projList1,* vector< point2D > *projList2,* point2D *Ori1[3],* point2D *Ori2[3]*)

For evaluating 3D points from the projected points on two different planes

Parameters

setOne	list of 2D projections of points on to the first plane
setTwo	list of 2D projections of points on to the second plane
Ori1	array containing projection of 3D points on the first plane
Ori2	array containing projection of 3D points on the second plane

Returns

will return the evaluated 3D points corresponding to the projected points

4.2.2.2 vector<point2D> Projection (vector< point3D > *points*, point3D *perpendicular*)

For evaluating the projection of 3D points on specified plane

Parameters

points	list of 3D points
perpendicular	perpendicular to the plane

Returns

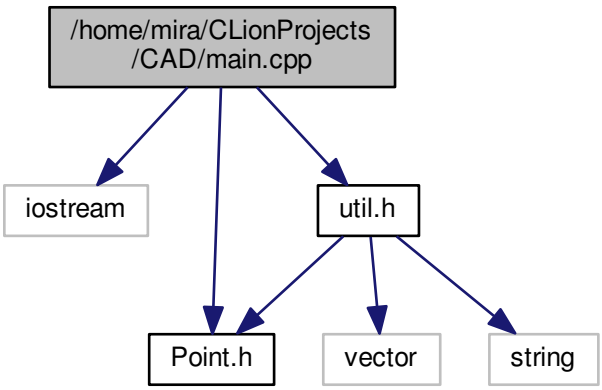
list of 2D projections of points on to the plane

4.3 /home/mira/CLionProjects/CAD/main.cpp File Reference

Top-level driver code.

```
#include <iostream>
#include "Point.h"
#include "util.h"
```

Include dependency graph for main.cpp:



Functions

- int main ()

4.3.1 Detailed Description

Top-level driver code.

Author

Mira Kabra

Version

1.0

Date

04-03-2018

Note

The current proposed structure. Implementation yet to be started.

4.3.2 Function Documentation

4.3.2.1 int main ( )

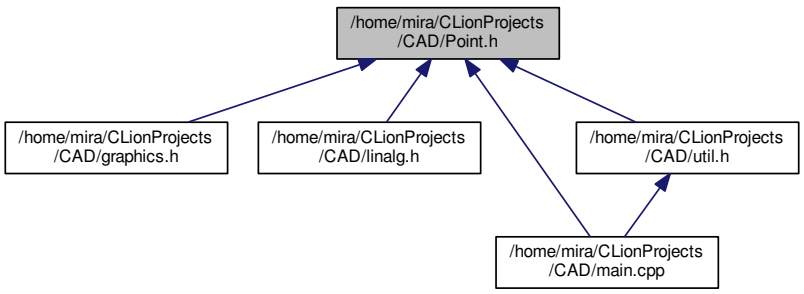
Takes the mode information which specifies what function it needs to serve Takes the input files One with the coordinates and one with the edge information The edge input will be taken in the form of adjacency matrix whose data type will be point3D or point2D

Returns

4.4 /home/mira/CLionProjects/CAD/Point.h File Reference

Definitions of Point classes.

This graph shows which files directly or indirectly include this file:



Classes

- struct point3D

  Points with 3 coordinates.
- struct point2D

  Points with 2 coordinates.

4.4.1 Detailed Description

Definitions of Point classes.

Author

Mira Kabra

Version

1.0

Date

04-03-2018

Note

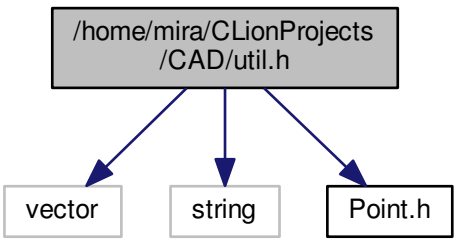
The current proposed structure. Implementation yet to be started.

4.5 /home/mira/CLionProjects/CAD/util.h File Reference

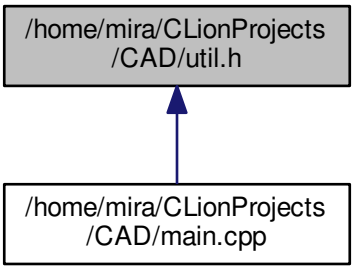
Utility Functions.

```
#include <vector>
#include <string>
#include "Point.h"
```

Include dependency graph for util.h:



This graph shows which files directly or indirectly include this file:



Functions

- vector< point2D > read2DProj (string projFilePath)
- vector< point3D > read3DModel (string modelFilePath)
- vector< vector< int > > readAdjacencyList (string adjFilePath)

4.5.1 Detailed Description

Utility Functions.

Author

Mira Kabra

Note

To be implemented.

4.5.2 Function Documentation

4.5.2.1 vector<point2D> read2DProj (string *projFilePath*)

Utility function for reading projection specification from given file.

Parameters

projFilePath	path to file containing projection specification

Returns

List of 2D coordinates of points

4.5.2.2 vector<point3D> read3DModel (string *modelFilePath*)

Utility function for reading 3D model specification from given file.

Parameters

modelFilePath	path to file containing projection specification

Returns

List of 3D coordinates of points

4.5.2.3 vector<vector<int> > readAdjacencyList (string *adjFilePath*)

Utility function for reading adjacency list from given file.

Parameters

adjFilePath	path to file containing projection specification

Returns

adjacency list

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