# Documentation for Engineering Drawing Software Package

Ujjwal Gupta
2016CS10087

Chetan Mittal
2016CS10343

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# Contents

# Chapter 1

# Class Index

## 1.1 Class List

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

# Chapter 2

# Class Documentation

## 2.1 FileParser Class Reference

`#include <FileParser.h>`

### Public Member Functions

- ThreeDModel _3DModelInput (std::string filename)
  *function which takes a 3D model as input*
- TwoDModel _2DModelInput (std::string filename)
  *function which takes a 2D model as input*
- void **parseFile** (std::string filename, int choice)

### 2.1.1 Detailed Description

A class representing a file parser

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

- FileParser.h

## 2.2 Line Class Reference

`#include <geometry.h>`

### Public Member Functions

- Point getFirstPoint ()
  *Accessor function to get the first end point.*
- Point getSecondPoint ()
  *Accessor function to get the second end point.*
- Point * getArrayPoints ()
  *Accessor function to get the array of end points.*
- void setFirstPoint (Point p1)
  *Mutator function to set the first end point.*
- void setSecondPoint (Point p2)
  *Mutator function to set the second end point.*

### 2.2.1 Detailed Description

A class to represent a line in space

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

- geometry.h

## 2.3 LineList Class Reference

### Public Member Functions

- Line * getLines ()
  *Accessor function which gets an array of lines.*
- int getSize ()
  *Accessor function to get size of array.*
- void setLines (Line *lines)
  *Mutator function to set array of lines.*
- void setSize (int size)
  *Mutator function to set size of array.*
- void **remove** (Line l)

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

- Lists.h

## 2.4 Plane Class Reference

```
#include <geometry.h>
```

### Public Member Functions

- float getA ()
  *Accessor function to get a.*
- float getB ()
  *Accessor function to get b.*
- float getC ()
  *Accessor function to get c.*
- float getD ()
  *Accessor function to get d.*
- float * getArrayABCD ()
  *Accessor function to get array of lines.*
- void **setA** (float a)
- void **setB** (float b)
- void **setC** (float c)
- void **setD** (float d)

### 2.4.1 Detailed Description

A class to represent a plane in space

A class to represent a plane and the lines lying on it

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

- geometry.h

## 2.5 planeList Class Reference

### Public Member Functions

- Plane * getplanes ()
  *Accessor function which gets an array of planes.*
- int getSize ()
  *Accessor function to get size of array.*
- void setplanes (Plane *planes)
  *Mutator function to set array of planes.*
- void setSize (int size)
  *Mutator function to set size of array.*

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

- Lists.h

## 2.6 PlaneWithLines Class Reference

### Public Member Functions

- Plane getPlane ()
  *Accessor function to get plane.*
- Line * getArrayLines ()
  *Accessor function to get array of lines.*
- int getNumLines ()
  *Accessor function to get number of lines.*
- LineList **getLines** ()
- void **setPlane** (Plane p)
- void **addLine** (Line l)

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

- Lists.h

## 2.7 planeWithLinesList Class Reference

### Public Member Functions

- PlaneWithLines * getPlaneWithLines ()
  *Accessor function which gets an array of planeWithLines.*
- int getSize ()
  *Accessor function to get size of array.*
- void setPlaneWithLines (PlaneWithLines *p)
  *Mutator function to set array of planeWithLines.*
- void setSize (int size)
  *Mutator function to set size of array.*

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

- Lists.h

## 2.8 Point Class Reference

```
#include <geometry.h>
```

### Public Member Functions

- float getX ()
  *Accessor function to get the x coordinate of point.*
- float getY ()
  *Accessor function to get the y coordinate of point.*
- float getZ ()
  *Accessor function to get the z coordinate of point.*
- void setX (float x)
  *Mutator function to get the x coordinate of point.*
- void setY (float y)
  *Mutator function to get the y coordinate of point.*
- void setZ (float z)
  *Mutator function to get the z coordinate of point.*
- float * getArrayCoors ()
  *Accessor function to get the array of coordinates of point.*

### 2.8.1 Detailed Description

A class to represent a point in space

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

- geometry.h

## 2.9 PointList Class Reference

`#include <Lists.h>`

### Public Member Functions

- Point * getPoints ()

  *Accessor function which gets an array of points.*
- int getSize ()

  *Accessor function to get size of array.*
- void setPoints (Point *points)

  *Mutator function to set array of points.*
- void setSize (int size)

  *Mutator function to set size of array.*

### 2.9.1 Detailed Description

A class representing a list of points

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

- Lists.h

## 2.10 Rotator Class Reference

### Public Member Functions

- void setThreeDModel (ThreeDModel model)

  *Mutator function to set ThreeDModel.*
- ThreeDModel rotate (ThreeDModel model, std::string axis, float angle)

  *function to rotate the ThreeDModel*

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

- Rotator.h

## 2.11 ThreeDModel Class Reference

`#include <model.h>`

### Public Member Functions

- Point * getPoints ()
  *Accessor function to get the vertices.*
- Line * getLines ()
  *Accessor function to get the lines.*
- Plane * getPlanes ()
  *Accessor function to get the surfaces.*
- void **setPoints** (Point *p)
- void **setLines** (Line *l)
- void **setPlanes** (Plane *p)
- int **getPointSize** ()
- int **getLineSize** ()
- int **getPlaneSize** ()
- void **setPointSize** (int s)
- void **setLineSize** (int s)
- void **setPlaneSize** (int s)

#### 2.11.1 Detailed Description

A class representing a 3D model containing the vertices, edges and surfaces

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

- model.h

## 2.12 ThreeDModelGenerator Class Reference

### Public Member Functions

- ThreeDModelGenerator (TwoDModel model)
  *Input function to get the 2D model.*
- void PossibleVerticesConstructor ()
  *This function returns a list of possible vertices in a array of point objects.*
- void PossibleEdgesConstructor ()
  *This function returns a list of possible edges in a array of line objects.*
- planeWithLinesList PossibleSurfacesConstructor ()
  *This function returns a list of possible surfaces in a array of plane objects.*
- bool DuplicatePlaneChecker (Plane p1, Plane p2)
  *This function checks if two given planes are duplicate or not.*
- void PossibleClosedLoopFacesConstructor (planeWithLinesList possibleSurfaces)
  *This function returns a list of possible closed loops in a array of plane objects.*
- ThreeDModel * PossibleObjectsConstructor ()
  *This function returns a list of possible objects in a array of ThreeDModel objects.*
- ThreeDModel PossibleObjectsCombiner (ThreeDModel *)
  *This function returns a ThreeDModel object after combining possible subobjects.*
- ThreeDModel output ()
  *This function returns the final ThreeDModel object.*
- void **PossibleClosedLoopConstructor** (PlaneWithLines possiblePlane)

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

- ThreeDModelGenerator.h

## 2.13 TwoDModel Class Reference

`#include <model.h>`

### Public Member Functions

- TwoDView getFrontView ()
  *Accessor function to get the front view.*
- TwoDView getTopView ()
  *Accessor function to get the top view.*
- TwoDView getSideView ()
  *Accessor function to get the side view.*
- void **setFrontView** (TwoDView v)
- void **setTopView** (TwoDView v)
- void **setSideView** (TwoDView v)

### 2.13.1 Detailed Description

A class representing a 2D model containing the three views

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

- model.h

## 2.14 TwoDModelGenerator Class Reference

`#include <TwoDModelGenerator.h>`

### Public Member Functions

- TwoDModelGenerator (ThreeDModel model)
  *Input function to get the 3D model.*
- Point **_3Dto2DPoint** (Point p, string plane)
- Point * **_3Dto2DPoints** (Point *pointArray, string plane, int arraySize)
- Line * **_3Dto2DLine** (Line *lineArray, string plane, int arraySize)
- TwoDModel output ()
  *Output function returns a 2D model.*

### 2.14.1 Detailed Description

A class responsible for generating the 2D model

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

- TwoDModelGenerator.h

## 2.15 TwoDView Class Reference

### Public Member Functions

- Point * getPoints ()

  *Accessor function to get the array of points.*
- Line * getLines ()

  *Accessor function to get the array of lines.*
- void **setPoints** (Point *p)
- void **setLines** (Line *l)
- int **getPointSize** ()
- int **getLineSize** ()
- void **setPointSize** (int s)
- void **setLineSize** (int s)

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

- view.h

# Index