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## 1 Package de.grogra.lignum.sky

**Still missing:**

- FirmamentWithMask
- MineSet

### 1.1 Firmament.class

**Includes:**

- Firmament/Firmament.cc
- Firmament/include/Firmament.h

**ToDo:**

- Further Testing
- add method getIncAz
- improve getSunPosition()
- Test getDirection(int n)
- Discuss formula in line 733
- Put R\_Epsilon into an interface

## 2 Package de.grogra.lignum.jadt

Reflects namespace cxxadt

**Still missing:**

Compare c++adt/

### 2.1 ParametricCurve.class

**Includes:**

- c++adt/src/ParametricCurve.cc
- c++adt/include/ParametricCurve.h

**ToDo:**

- Allow Comments in input file

## 2.2 PointL.class

PointL reflects the Point class used in Lignum

**Extends:**

javax.vecmath.Point3d

**Includes:**

- c++adt/src/Point.cc
- c++adt/include/Point.h

New functions will be added whenever they are needed.

**Already added:**

- Method "**distance(PointL)**": calculates the distance between two points.
- Method "**mul(double, PositionVector)**": multiplies a scalar with a PositionVector and sets the values of the PointL to the result.
- Method "**subtract(PositionVector,PositionVector)**" : Subtracts the second PosV from the first one and sets the calling PosV to the result.
- Method "**subtract(PointL,PointL)**" : Subtracts the second Point from the first one and sets the calling Point to the result.

## 2.3 PositionVector.class

**Extends:**

de.grogra.ray2.radiosity.Vector3d

**Includes:**

- c++adt/src/PositionVector.cc
- c++adt/include/PositionVector.h

New functions will be added whenever they are needed.

**Already added:**

- Method "**rotate(PointL, PositionVector,double)**" which reflects the according function in cLignum
- Method "**mul(double, PositionVector)**": multiplies a scalar with a PositionVector and sets the values of the calling PositionVector to the result.
- Method "**mul(double)**": multiplies a scalar with the calling PositionVector and sets the values of the calling PositionVector to the result.
- Method "**subtract(PositionVector,PositionVector)**" : Subtracts the second PosV from the first one and sets the calling PosV to the result.

## 2.4 Shape.class

Only an interface.

**Includes:**

- c++adt/include/Shape.h

## 2.5 Mathsymb.class

Interface

- c++adt/include/mathsym.h

**Status:**

- Const R\_EPSILON defined.
- New functions will be added whenever they are needed.

## 2.6 Ellipse.class

**Includes:**

- c++adt/src/Ellipse.cc
- c++adt/include/Ellipse.h

**ToDo:**

- Further Testing

## 3 Package de.grogra.lignum.stlLignum

Reflects the stl-Lignum folder and the Lignum namespace.

**Still missing:** Compare stl-lignum/

### 3.1 BeamShading.class

**Includes:**

- stl-lignum/TreeSegment/BeamShading.cc

**Status:**

- The method CylinderBeamShading has been added but needs testing. The testing will probably take some time.
- The method EllipseBeamShading is not yet added because the class BroadLeaf is still missing.

### 3.2 **Petiole.class**

**Includes:**

- stl-lignum/include/BroadLeaf.h (partly)
- stl-lignum/TreeSegment/BroadLeaf.cc

**Status:**

- Needs further testing.

### 3.3 **BroadLeafAttributes**

**Includes:**

- stl-lignum/include/BroadLeaf.h (partly)
- stl-lignum/include/BroadLeafI.h (partly)

**Status:**

- Needs further testing.
- Instead of templates like in cLignum the class is only available for Shape Ellipse at the moment. Using generics would be quite complicated. If only a few different shapes are needed then it would be much more convenient to create a single class for each shape.

### 3.4 **BroadLeaf**

**Includes:**

- stl-lignum/include/BroadLeaf.h (partly)
- stl-lignum/include/BroadLeafI.h (partly)

**Status:**

- Needs further testing.
- Instead of templates like in cLignum the class is only available for Shape Ellipse at the moment. Using generics would be quite complicated. If only a few different shapes are needed then it would be much more convenient to create a single class for each shape.

### 3.5 **LGMAD (Enum)**

**Includes:**

- stl-lignum/include/LGMSymbols.h (partly)

**Status:**

- Implements the LGMAD enum type

## 4 **de.grogra.lignum.stlVoxelspace**

### 4.1 **VoxelObject**

**Includes:**

- stl-voxelspace/include/VoxelObject.h (partly)

**Status:**

- Abstract Class
- Needs further testing

### 4.2 **CfCylinder**

**Includes:**

- stl-voxelspace/include/VoxelObject.h (partly)

**Status:**

- Needs further testing

### 4.3 **HwEllipse**

**Includes:**

- stl-voxelspace/include/VoxelObject.h (partly)

**Status:**

- Needs further testing