**Line2D – Function Definitions**

*Line2DImpl(std::vector<RGPHalfSegment2D> listOfSegments);*

The first constructor creates a Line2DImpl object based on a passed in vector of RGP half segments.

*Line2DImpl(std::string listOfLine2DString);*

The second constructor creates a Line2DImpl object based on a passed in string of segments.

*Line2DImpl(std::ifstream& file);*

The final constructor creates a Line2DImpl object based on a passed in file of segments.

*~Line2DImpl();*

The destructor clears any data that is stored in our vector of segments or our bounding box vector.

*std::string getLineString();*

Returns a string containing all of the line segments in our vector of segments.

*void printAllLines();*

Prints out every stored line in our vector of segments.

*bool isEmptyLine();*

Returns true if vector of segments is empty, false otherwise.

*bool isValidLine();*

Returns true if Line2D object is valid, false otherwise.

*int getNumberOfSegments();*

Returns the total number of segments stored in our vector.

*Line2DImpl getBoundingBox();*

Returns Line2DImpl object with bounding box as a vector attribute.

*iterator begin();*

Returns an iterator defining the starting position of vector of segments.

*iterator end();*

Returns an iterator defining the ending position of vector of segments.

*bool add(RGPHalfSegment2D rgpSeg2d);*

Returns true if our passed in RGP half segment is successfully added to our vector of segments.

*bool update(iterator it, RGPHalfSegment2D rgpSeg2d);*

Returns true if our passed in RGP half segment is successfully added to our vector of segments using an iterator as index, false otherwise.

*bool remove(iterator it);*

Returns true if successfully removed RGP half segment using iterator as index from vector of segments, false otherwise.

*bool operator==(const Line2DImpl &l2d);*

Returns true if two Line2Ds are equal, false otherwise.

*bool operator!=(const Line2DImpl &l2d);*

Returns true if two Line2Ds are not equal, false otherwise.

*Line2DImpl operator[](int index);*

Returns a specified RGP half segment at specified index.

*Line2DImpl operator=(const Line2DImpl &l2dImpl);*