**Iteration 4**

**Requirement**

be able to determine the bearing between a specified point and the location and determine the locations that are at a specified bearing from a specified point.

**Objectives**

**Create a class to store a normalised range of bearings(0-360)**

The class should accept 2 bearings determine the range of the bearing, determine the centre point and normalise the bearing to between 0 and 360 degrees.

**Add a method to the BearingRange class to determine if a bearing is contained with the range**

The input bearing should be normalised and it should be possible to work with ranges greater than 180 degrees

**Add a method to the BearingRange class to determine if a BearingRange overlaps with another**

It should return true if all or part of either bearing range is contained with the other.

**Add methods to the MapCoordinate class to determine the bearing from and to the MapCoordinate from another MapCoordinate.**

The results should be normalised between 0-360.

**Add a method to the MapCoordinate class to determine another point at a specified distance and bearing from itself.**

The method should work worldwide and be able to cross the date line and poles.

**Add a methods to the Location trigger class and BoundingBox classes to calculate a BearingRange that represents the range the location is visible from.**

Methods 1 should determine the range based on a +-90 intersection of the location from a specified location and should only exceed 180 degrees in rare circumstances. Method 2 should determine the range based on each point. Method 3 should determine a range based on the points of a BoundingBox

Add a method to the LocationTriggerCollection class to create a list of locations within a specified range that

**Completion criteria**

1. The library is able to determine distances between locations across the world including over the poles and date line.
2. The library can create a list of locations within a fixed range from a point worldwide.
3. The library can get a sorted list of the nearest locations.