PA1 Report

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The algorithm for buildDataStructure() is as follows: it makes a new HashTable of 1.5 * number of points, then cycles through all the points and adds them to the table using Math.floor(point).

The algorithm for npHashNearestPoints(float p) is as follows: get all the points in the table that was made with buildDataStructure() that are near hash(Math.floor(p)), and then go through those points and check if they are close to p. Add the points that are close to an ArrayList and return the list.

The methods were ran 10 times each, and then I found the average of the run times. They are as follows:
Naive: 23.956400000000002 sec
Hash: 0.1585 sec

There's also a Main.java attached with an implementation of Nearest-Points.