Background

This document describes the requirements for developing an application for ACME Company that can quickly query objects within a selected area of a dataset.

Story Board

ACME Company needs an algorithm that can quickly return points that are located in a bounding box of a dataset. The dataset potentially has millions of records with x and y coordinates and a value. The values need to be retrieved for a given bounding box.

Project Deliveries

Below are the deliverables for this project. Please ensure to read them before starting the application.

Requirements for processing a bounding box query

- The goal of this project is to retrieve the data accurately and efficiently. The faster the better. Less than 25ms or less would be optimal if possible. Also keep in mind, that your library may be used for multiple queries. (

- The application must be able to run on a Dual Processor machine with 2GB of ram. (

- The application 1. Upper y 2. Lower y (3. Left x (4. Right x (

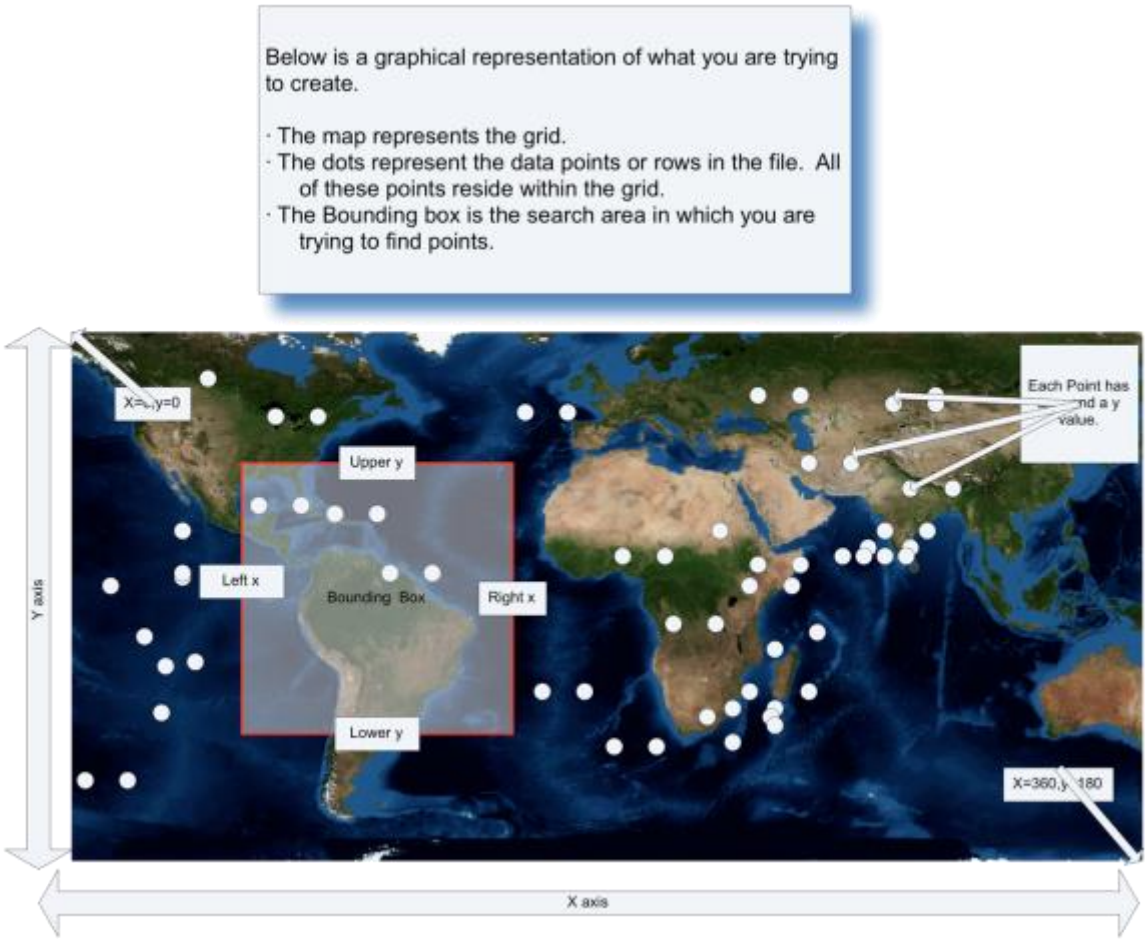
- The application sample_data.csv (

should take four arguments to perform a query

should read from the supplied file

- No external libraries such as Apache should be used. Please write this application from scratch.

Example Diagram



Data for ACME Company

Below is a sample of a dataset file for ACME. As you can see, the file is comma delimited with each entry on a new line.

x y value

12.36,104.95,45.38 51.34,123.9,24.53 300.28,50.12,92.93
248.62,105.48,1.02 342.38,133.93,22.48 8.05,56.77,51.26
346.71,160.22,86.27 261.38,68.69,76.26 173.73,29.79,37.92
355.91,67.91,0.64 282.67,101.58,83.64 253.09,52.96,59.42
343.35,21.24,18.48

19.6,29.81,96.32 224.82,3.86,96.62 93,41.44,18.51
239.17,78.59,95.11

Sample data has been provided in the file sample_data.csv

Output

- Provide an output file called query_results.txt that contains comma delimited results as show above.

Deliverables

- All source code should be placed into a jar file called acmeQueryBoxSrc.jar (
- All compile code should be placed into a jar file called acmeQueryBox.jar (
- Provide a main entry point to the application (HTML, Swing, Command Line) (
- Provide a main library interface to be reused within other code (
- Documentation should be provided on how to run your application in the README. (
- All source code should be checked into GitHub (