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PID: smb4

1) Your overall object-oriented design.
There are 4 classes in the program from project 1.
City: To store the City data and coordinate
BtNode: The node class for the binary tree, which stores the city data, left and right node
BinaryTree: The BST(database) using the BtNode
bst: Handles the system.in and out.

Project2: added 9 more classes

PRQuadTreeNode: abstract class for PRQuadTreeNodeInternal and PRQuadTreeNodeLeaf
The node classes for the QuadTree.
PRQuadTreeNodeFlyWeight: which extends PRQuadTreeNodeLeaf to store no value
CityRecord: wrapper class for city and the coordinates, used to retrieve the coordinates from the node.
Geometry: which helps with the rfind functions.
QuadData: used to retrieve the calculated quadrant values after splitting internal into 4 different regions.

Quad: handles the system.in and out

2) How you made the find and rfind commands efficiently prune the search space.

Find: O(logn), it looks for which quadrant the coordinate is in recursively until it finds it or reaches a Flyweight.

rFind: O(logn), it checks which quadrant the range intersects and only checks those quadrant and then fetches the leaf if the coordinates are in the range.