k-d Tree for points in a plane

Abstract : k-d Tree or k-dimensional tree is a space partitioning data structure for organizing points in a k-dimensional space. This data structure is quite handy when it comes to queries like range searches and nearest neighbor searches. As a class project for CSE-555 I would like to implement a data structure library for k-d trees in C++ focusing on 2 dimensional k-d trees. The purpose of the project would be to come up with an implementation of k-d tree data structure in C++ and compare its speed to the speed of the queries if processed in the Brute force way.

Language to be used : C++

Proposed end results : A robust C++ library for k-d tree implementation and search which supports queries like existence and range search in 2-dimensional space.

Proposed extension (If time permits) : Extension of the same library to 3 or more dimensions.

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