

Z-Ordering

笔记本: CS 562

创建时间: 2/15/2020 5:02 PM

更新时间: 2/15/2020 5:11 PM

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URL: https://en.wikipedia.org/wiki/Z-order_curve

Z-Ordering

Definition

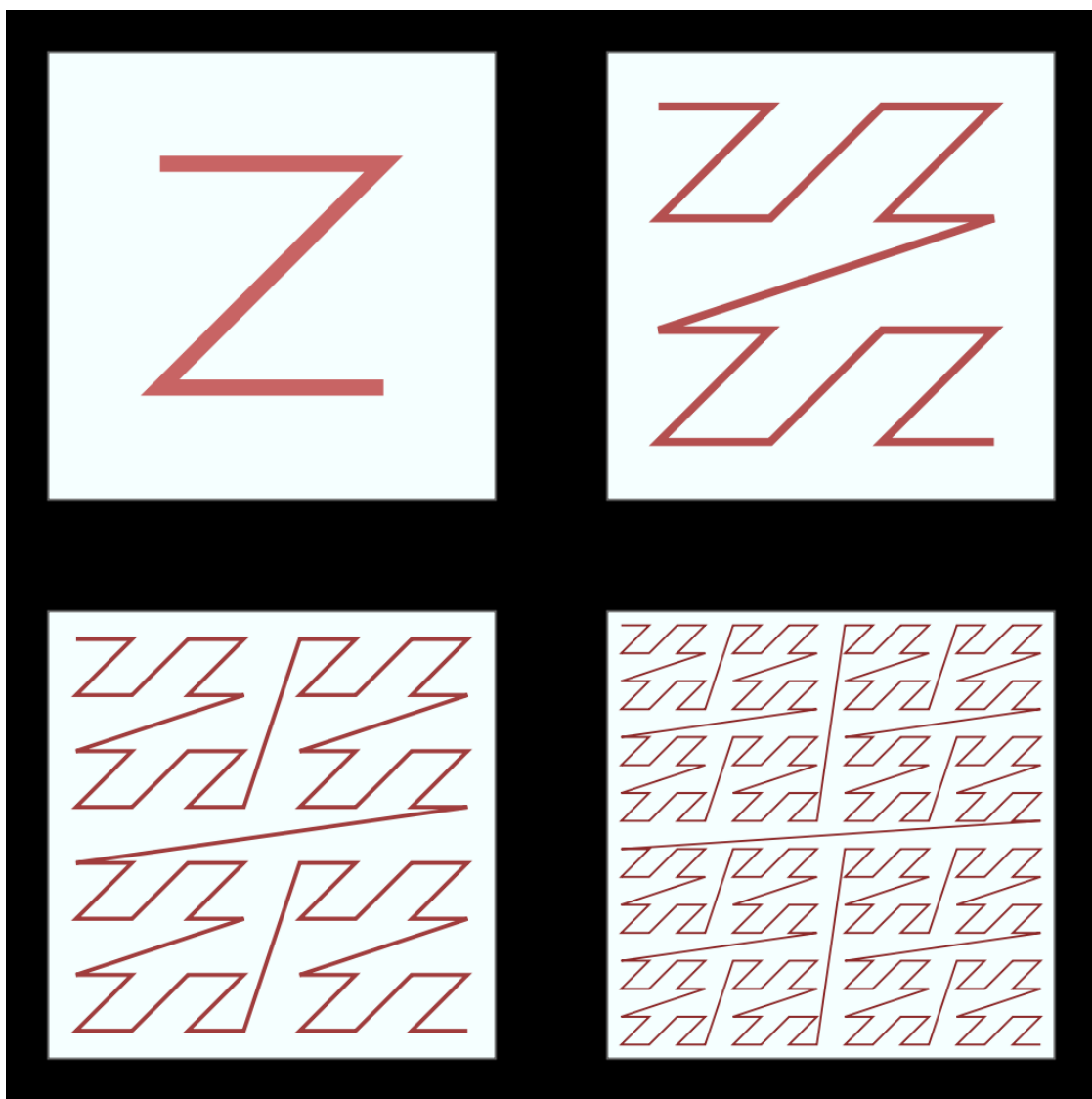
In mathematical analysis and computer science, **functions** which are Z-order, Lebesgue curve, Morton space filling curve, Morton order or Morton code **map multidimensional data to one dimension** while preserving locality of the data points.

Why do we need z-order?

Once the data are sorted into this ordering, any one-dimensional data structure can be used such as **binary search trees**, **B-trees**, **skip lists** or (with low significant bits truncated) **hash tables**. The resulting ordering can equivalently be described as the order one would get from a depth-first traversal of a **quadtree**.

Examples

A 2-dimension example



A 3-dimension example

