Hausdorff Space

Definition

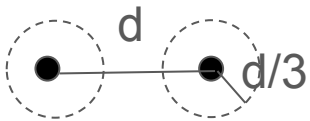
A Hausdorff space is a topological space where distinct points have disjoint neighbourhoods. (Wikipedia)

Definition in my own words

A Hausdorff space is a topological space where two points can be “housed off” by disjoint open sets.

Example

R^2 with the standard topology, because if two points are distance d apart, you can draw open balls of distance d/3 around them and they won’t intersect.



Non-example

R^n with the co-finite topology because any two nonempty open sets intersect.