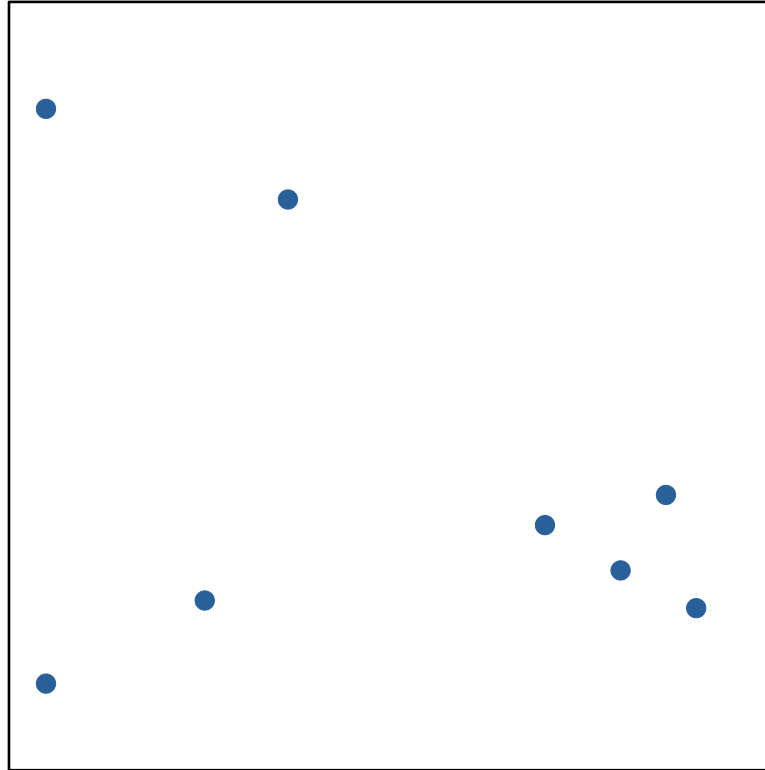# Illustration of the division of the data into subsets as given in Section 2.4

With the following configuration the division into four subsets leads to unbalanced number of points per subset:
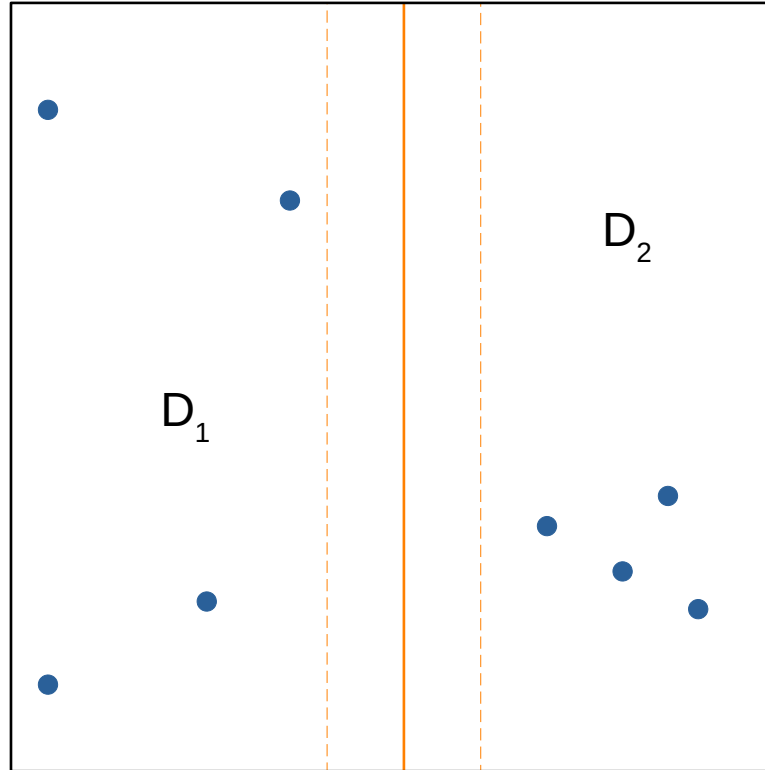- 8 points in the D = [0,1] x [0,1]
- Boundary width = 0.1

Recursion 1:

Split the domain into 2 subsets such that D_1 U ∂D_1 and D_2 U ∂D_2 contain the same number of points.

- D_1 U ∂D_1 and D_2 U ∂D_2 both contain 4 points
- No points are in the boundary regions

Recursion 2:

Split the 2 subsets from the previous recursion into 2 subsets each.

- $D'_1 \cup \partial D'_1$ and $D'_2 \cup \partial D'_2$ contain 2 points. No points are in the boundary regions.
- $D'_3 \cup \partial D'_3$ and $D'_4 \cup \partial D'_4$ contain 4 points. 2 points are in each boundary region.

→ Subsets have an unbalanced number of points.