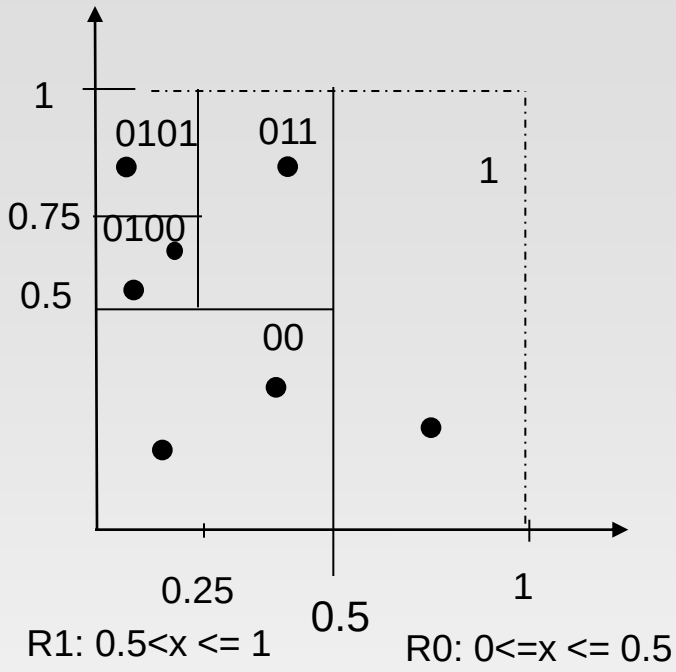
G-tree

Max number or records in a block: 2

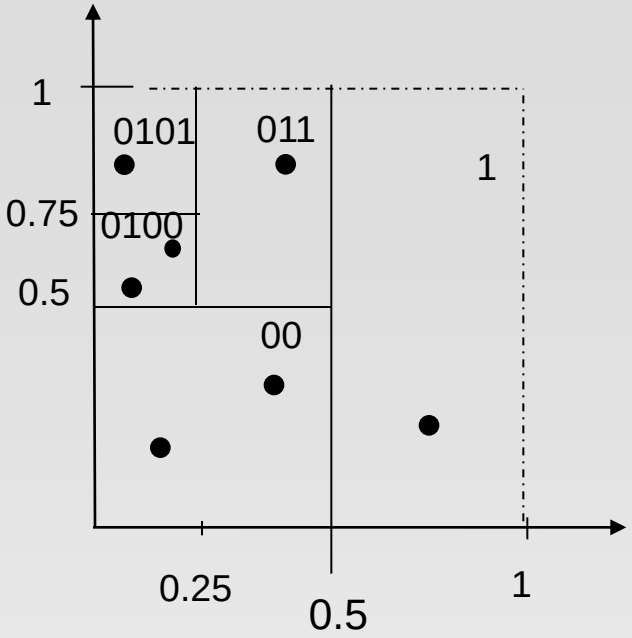


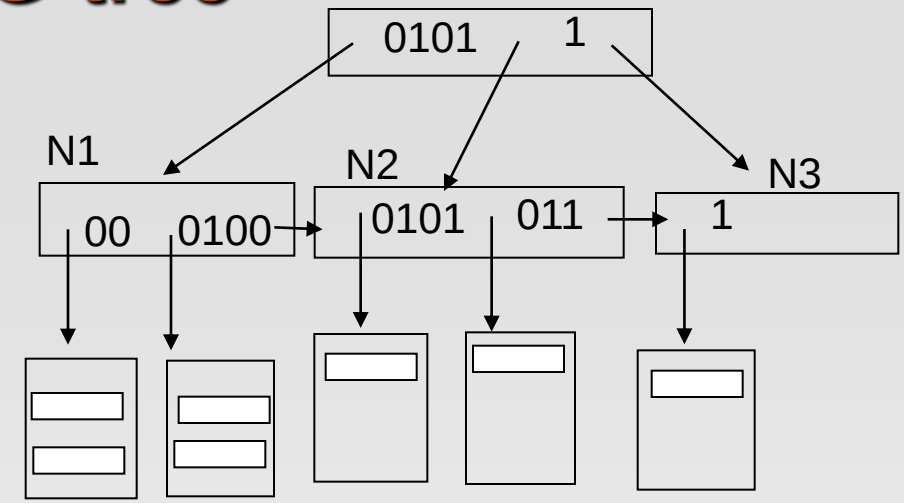
Half partitioning of a region

Region identifier: string of bits built as follows

- Initial region is identified by empty string
- Region R0: 0<=x <= 0.5 identified by 0
  Region R1: 0.5<x <= 1 identified by 1
- When a region is divided add 0 or 1 to its identifier
  (add 0 if the region has lower values and 1 if the region has greater values)

G-tree





RegionOf(S):
S=00 corresponds to the region {(0;0.5), (0;0.5)}
S=011 corresponds to the region {(0,25;0.5), (0,5;1)}

Strings are stored into a B+-tree (G-tree)
Use prefix as ordering relation
For each leaf (S,P), S is the code of a region whose objects are store into the block reachable by P

Search of an object P=(x1, y1) .
Let M the maximum length of strings of regions.
Find the string Sp of the region that contains P, using M bits.
Search Sp in the tree (as usual) from the root to the leaf.
Sp or a prefix of Sp is in the leaf