SPANNING TREE
- Route that connects all pins and is a tree
- Minimum spanning tree is a spanning tree of minimum length

Finding min spanning tree is \( O(p^2) \) using classic algos

RECTILINEAR SPANNING TREE
- Route that connects all pins and is a tree
- Only uses pin to pin connections
- Only use "rectilinear" (Manhattan) routing

Finding min rect spanning tree is \( O(p^2) \) using classic algos

RECTILINEAR STEINER TREE
- Route that connects all pins and is a tree
- Uses pin-to-pin connections and Steiner points
- Introduction of Steiner points can reduce total wire length compared to the rectilinear minimal spanning tree

Finding min rect Steiner tree is NP-hard, need to use heuristic algorithms
Heuristic sequential Steiner tree algorithm

1. Find closest pin pair (in terms of rectilinear distance)
   Construct MBB₀

2. Find closest pin (not part of the tree) to a point on MBB₀. Call closest pin not in tree P, and closest on MBB₀, P₀.

3. Construct MBB₁ from P₀ and P₁.

4. Add L-shape in MBB₀ which includes P₀ to the tree
   (Delete other L-shape)

5. Set MBB₀ = MBB₁.


Steps: 1, 2, 3

Steps: 4, 5, 6, 2

Steps: 3, 4, 5, 6, 2

Steps: 7, 4, 5, 6, 2
seen: 3, 4, 5, 6.

solution: