RRT*

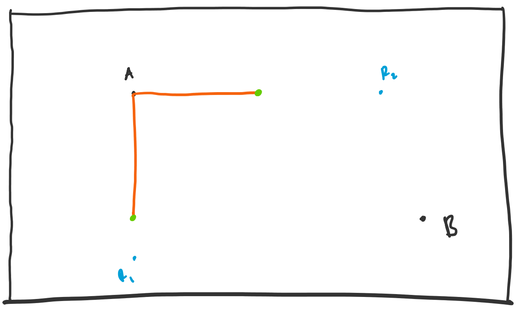
Wednesday, July 30, 2025 10:30 AM

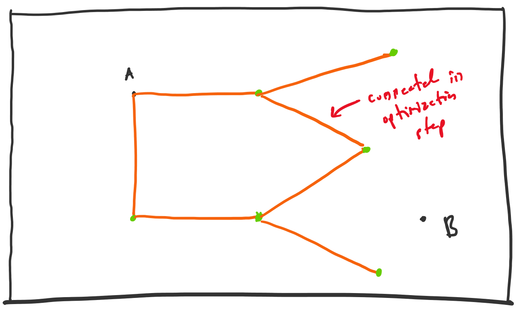
RRT:

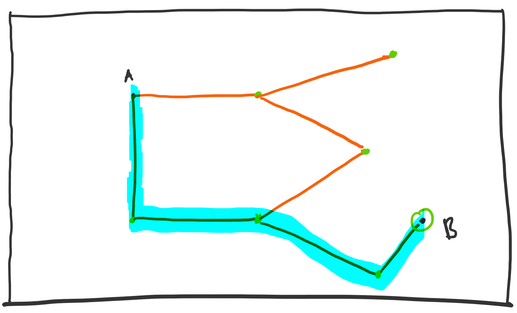
1. Sample random point
2. Find nearest neighbor in tree to that point
3. Extend towards the sample
4. Add new node to tree
5. Check if the goal is reached
6. Repeat

RRT*:

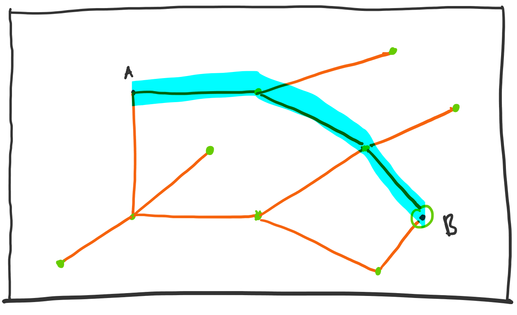
1. Sample random point
2. Find nearest neighbor in tree to that point
3. Extend towards the sample
4. **Find all neighbors in tree within radius r of sample**
5. **Choose best parent node (lowest cost)**
6. Add new node with best parent
7. **Rewire tree (improve nearby nodes)**
8. Check if goal reached



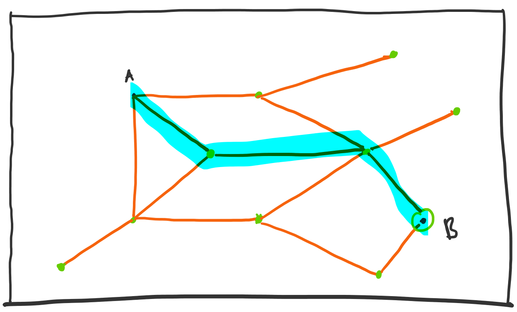




Path found



keep adding nodes to optimize



RRT* approaches the optimal solution as $n \to \infty$