

Minimum Spanning Tree

3/25/2009

Opening Discussion

- Optimization problems
 - Some problems were simple searches of a 1-D space.
 - Grocery trip where items can substitute or with combo coupons.
 - Call tree optimization.
 - Shortest path.
 - Most efficient task order waiting tables.
 - Efficient product production.

More Problems

- Optimal time allocation.
- Shipping networks.
- Best meal for lowest price.

Approach to Solution

- Our problem is connecting the buildings with the least amount of sidewalk.
- This is the minimum spanning tree problem and it has a greedy solution.
- We want to start at one node and say it is in our “set”. Then we repeatedly make the shortest sidewalk that connects something in the “set” to something outside it.

Code

- How are we going to go about coding this?
- There are two basic approaches to telling if a building is connected yet or not. Give it a boolean or keep two separate lists.
- Ideally we will write both of these.

Minute Essay

- What questions do you have about what we have done this week?
- Remember to send me your design today.