Review of Jan 16 class

1. Correctness of Kruskal's Alg: it really produces a MCST.

2. Let T be the set of edges output by K.A. Easy to show:

   (a) (V, T) is connected

   (b) (V, T) is acyclic

   Therefore (V, T) is a tree.

3. But is it a Min Cost ST?

1. To show that $c(T)$ is as cheap as possible prove the loop invariant:

   T is *promising*.

2. By induction on the number of iterations through the loop of K.A.

3. **Basis Case:** easy.

4. **Induction Step:** assume that T is promising, and show that T continues to be promising after one more execution of the loop.

5. Loop invariant $\Longrightarrow$ T is a MCST.