

Report: Spanning USA

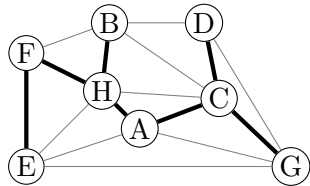
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1 Results

The following table summarizes our result:

Input file	MST total weight
USA-highway-miles.txt	16598.0
tinyEWG-alpha.txt	181

The MST we found in tinyEWG-alpha.txt can be drawn like this:



The MST has the following edges (lengths in drawing are not correct):

A - H weight: 16.0

B - H weight: 19.0

A - C weight: 26.0

C - D weight: 17.0

F - H weight: 28.0

E - F weight: 35.0

G - C weight: 40.0

Total length of MST: 181.0

2 Implementation details

We implemented the algorithms from the book page:

LazyPrimMST.java using MinPQ.java. The total running time is $E \cdot \log(E)$ in worst case for Prim.

To this should be added the time to create the graph - not considering the time it takes to remove white space this takes $V + E$ (the number of lines in the file).