

Homework 5

Due Wed, August 15th at 11:59pm

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Problem 1: Minimum Spanning Trees

Edge Weight	1	2	3	4	5	6	7
Edges	CF	FI, AB, DE	AD, BE, HI	GH	EC	BC, EH	DG

Edges in Sorted Order : CF, AB, DE, IF, AD, BE, HI, GH, EC, BC, EH, DG

ArrayDisjointSet

Call	A0	B1	C2	D3	E4	F5	G6	H7	I8
Initial State	-1	-1	-1	-1	-1	-1	-1	-1	-1
Union(C,F)	-1	-1	-2	-1	-1	2	-1	-1	-1
Union(A,B)	-2	0	-2	-1	-1	2	-1	-1	-1
Union(D,E)	-2	0	-2	-2	3	2	-1	-1	-1
Union(I,F)	-2	0	-3	-2	3	2	-1	-1	2
Union(A,D)	-4	0	-3	0	3	2	-1	-1	2
Union(B,E)	fails								
Union(H,I)	-4	0	-4	0	3	2	-1	2	2
Union(G,H)	-4	0	-5	0	3	2	2	2	2
Union(E,C)	2	0	-9	0	3	2	2	2	2

Done! Only 1 representative element remains!

Final ArrayDisjointSet:

2	0	-9	0	3	2	2	2	2
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Edges part of MST : CF, AB, DE, IF, AD, HI, GH, EC

**The Minimum Spanning Tree is drawn on the following page

