Data Structures and Algorithms Homework 9

Due Wednesday Oct 30; Joseph Sepich (jps6444)

1   Problem 1

Collaborators:

2 Problem 2

2.1 Part 1

2.2   Part 2

2.3 Part 3
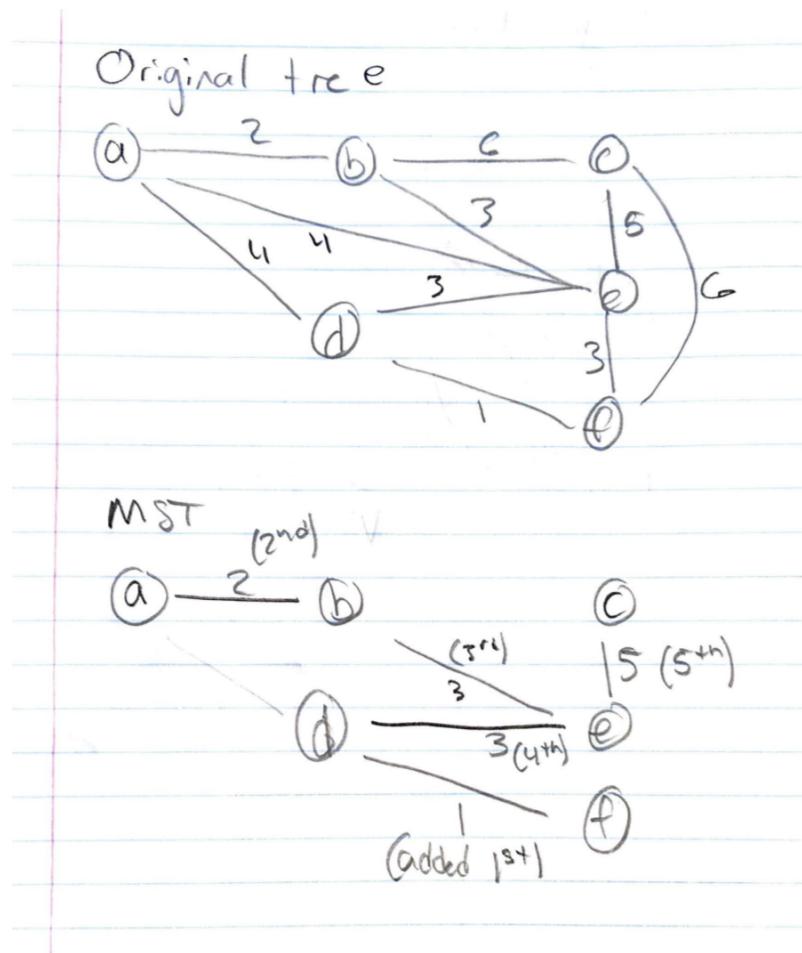
2.4   Part 4

3 Problem 3 Kruskal's Algorithm

Algorithm by iteration:

1. FD (Cut (S = {F}, V - S))
2. AB (Cut (S = {F, D, A}, V - S))
3. BE (Cut (S = {F, D, A, B}, V - S))
4. DE (Cut (S = {F, D}, V - S))
5. CE (Cut (S = {A, B, D, E, F}, {C}))

Final MST:

4 Problem 4 Prim's Algorithm

1) Add DF   D 0
                 F 0

2) DF   F 0
             E 3
             A 4

3) DF   E 3
             A 4
             C 6

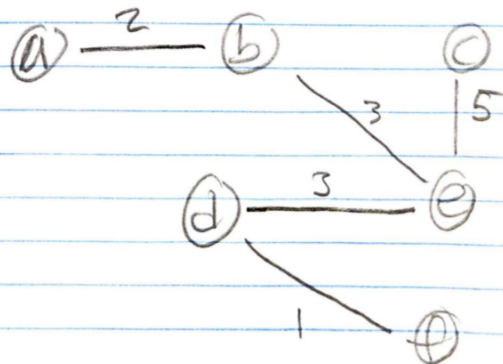4) DF DE B 3
   Add DE   A 4
             C 5

5) DF   A 2
   DE   C 5
   Add E B

6) DF   C 5
   OE
   EB
   Add BA

7) DF
   DE
   EB
   BA
   Add EC

Final MST

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          3
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      1 ⓕ

5 Problem 5