

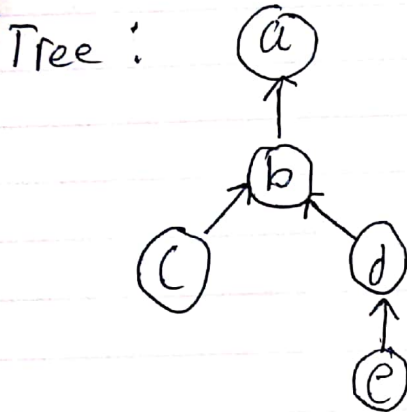
# Graphs & Huffman Lab

04/27/2020

Liam Brew

I pledge my honor that I have abided by the Stevens Honor System - ~~Liam Brew~~

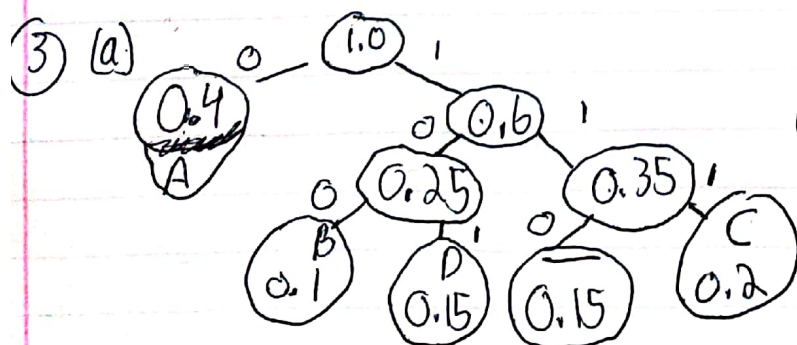
- (1) Edges in MST: BC 1, DE 2, BD 3, AB 5  
Weight of MST: 11



Tree Vertices	Remaining Vertices
AC, 0)	BCA, 1), CCA, 3), DC, INF), EC, INF), FCA, 10), G(-, INF)
B(A, 1)	C(B, 2), DCB, 8), E(B, 6), FCA, 10), G(B, 3)
CC(B, 2)	D(C, 8), EC, 5), FCA, 10), <del>G(B, 3)</del> G(B, 3)
G(B, 3)	D(B, 8), EC, 5), FCA, 10)
EC(C, 5)	D(E, 7), FE, 7)
DE(E, 7)	FE, 7)
FE(E, 7)	

Path: A → B → C → E → F

Distance: 7



(b) Encoding: 0100011101000101

(c) Decoding: BAD \_ ADA

(d) A = 0, B = 100, C = 11, D = 101, \_ = 110

Scanned with

$$\begin{aligned}\text{Encoded Bits} &= (.4)(1) + (.1)(3) + (.2)(3) + (.15)(3) + (.15)(3) \\ &= .4 + .3 + .6 + .45 + .45 \\ &= 2.2\end{aligned}$$

$$\text{Ratio} = \frac{3}{2.2} = 1.363 \text{ Compression Ratio}$$

$$\text{Compression gain} = 36.3 \%$$