Lab 14

Jonelle Lawler
C00205084

Question One

No access to Linux

Question Two

One method of reducing bandwidth use is to compress the data being transmitted. Let A = {a/20, b/15, c/5, d/15, e/45} be the alphabet and its frequency distribution. Compute the optimal coding for each character. What is the average number of bits/symbol of the codes?

Answer

First we merge c and d
{a/20, b/15, c/5, n1/15, e/45}

Secondly, we merge n1 and n2
{n2/35, n1/20, e/45}

Then we merge n3 and e {n3/55, e/45}
a = 000, b = 001, c = 010, d = 011, e = 1

Question Four

One method of reducing bandwidth use is to compress the data being transmitted. Use the LZW algorithm to compress the string: BABAABAAA. Note that Uppercase A has ASCII value 65 in decimal. Draw diagrams to aid your explanation if appropriate.

	Output Code	Represents	Codeword	String
1.	66	B	256	BA
2.	65	B	257	AB
3.	256	A	258	BAA
4.	257	AB	259	ABA
5.	65	A	260	AA
6.	260	AA		