Lab 5

Q1

A = 0.20

B = 0.15

C = 0.05

D = 0.15

E = 0.45

In order of frequency

C(0.05)

B(0.15)

D(0.15)  
A(0.20)

E(0.45)

(C+B)=0.05+0.15=0.20

(D+(C+B))=0.15+0.20=0.35

(A+(D+(C+B)))=0.35+0.20

(E+(A+(D+(C+B))))=0.45+0.55=1.00

L=∑P(x)×code length

L=(0.20×2)+(0.15×4)+(0.05×4)+(0.15×3)+(0.45×1)

L=0.40+0.60+0.20+0.45+0.45= 2.10 bits per symbol

Q2

BABAABAAA

A = 65

B = 66

66 = B

65 = A

66 = B

256 = BA

65 = A

65 = A

259 = AA

66 65 66 256 65 65 259

Q3

Delta compression reduces data size by storing only the difference between successive versions instead of the full data

Instead of storing full versions of files, Git stores changes between file versions, significantly reducing storage requirements