Shri Ramdeobaba College of Engineering and Management, Nagpur
Department of Computer Science and Engineering
V Sem BE 2020-21
Course: Design and Analysis of Algorithm Lab (CSP352)
Practical 4

Problem Statement:

There are two business people who communicate daily to discuss their daily tasks and strategies. Assume during communication persons A and B are passing the message of variable length. Write a data compression algorithm to lower their cost of communication.

Method1: ASCII

Method2: Huffman coding

Input

Message 1 (>100 words): In computer science, a **Huffman code** is a particular type of optimal prefix **code** that is commonly used for lossless data compression. The process of finding or using such a **code** proceeds by means of **Huffman coding**, an algorithm developed by David A. Huffman while he was a Sc.D. student at MIT, and published **code** in the 1952 paper "A Method **code** for the Construction of Minimum-Redundancy Codes.

Message2: Voice to text conversion than compression.
*P1: Hi how r u?: cost
P2: Yaa I am fi9: cost
*P1: today is holiday?
P2: I m having work
Complete transmission cost of P1 and P2. (P1+P2)

Message 3(>100 words: 20 times):

Input: abcdefghijklmnopqrstuvwxyz

Output:

Input Message	Method1-cost	Method1-time	Method2-Cost	Method2-Time
Message1				
Message2				
Message 3				

RESULTS:

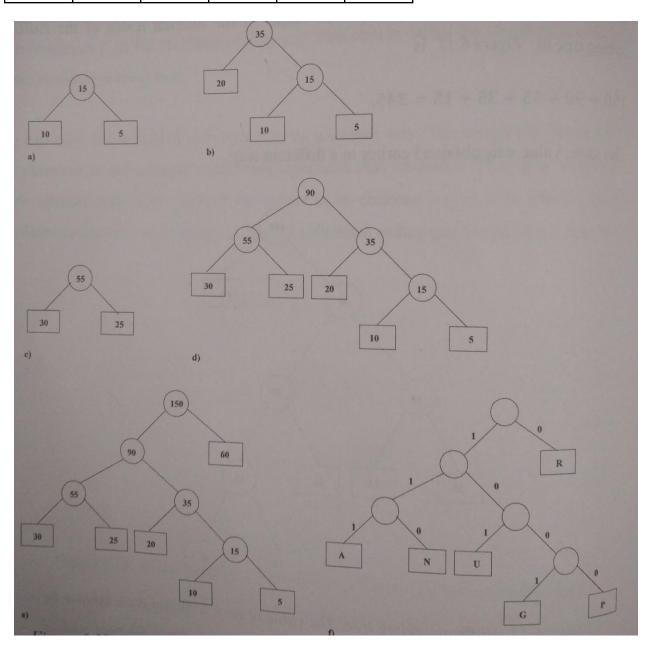| Input Message	Cost by Method1	Time by Method1 (x10**-6)s	Cost by Method2	Time by Method2 (x10**-6)s
Message 1	2681	9.298	1149	6.437
Message 2	406	0.284	174	0.248
Message 3	4802	6.675	2058	6.437

Graph:

Analysis: One paragraph
NNNNAAAANNNNNGGGGAAAAA

Step1: 30,10,20,5,25,60

Step2: 30,15,20,25,60
III: 30,35,25,60
IV: 55,35,60

N	A	G	P	U	R
25	30	10	5	20	60

a)

b)

c)

d)

e)

Character	Code
A	111
G	1001
N	110
P	1000
U	101
R	0