CONSTRUCT HUFFMAN CODE AND DECODE AND CALCULATE THE EFFICIENCY USING AVERAGE LENGTH AND ENTROPY VALUE

clc;

clear all;

close all;

x=input('enter the number of symbols'); %Enter the number of symbols

for m=1:x

symbols(m)=input('enter the symbol no:'); %Enter the symbol number

p(m)=input('enter the probability of symbol :'); %Enter the probablity occurance

end

hx=0; %Initialization of Entropy

L=0; %Initialization of Efficiency

pkg load communications;

for m=1:x

dict=huffmandict(symbols,p); %Function to create dictionary

hcode=huffmanenco(m,dict); %encoding

dsig=huffmandeco(hcode,dict); %decoding

code\_length(m)=length(hcode); %to find length

hx=hx-(p(m)\*log2(p(m))); %formula for entropy

L=L+code\_length(m)\*p(m);

end

allencode=huffmanenco(symbols,dict); %ecoding code

decodeall=huffmandeco(allencode,dict); %Decoding code

display(hx); %Display efficiency value

Efficiency=(hx/L)\*100; %Formula for Efficiency \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

OUTPUT

