**Experiment 10-Huffman Coding**

clc;

clear all;

close all;

code\_length=0;

x=input('Enter number of symbols: ');

for m=1:x

symbols(m)=input('Enter the symbol number: ');

p(m)=input('Enter the probability: ');

end

Hx=0

for m=1:x

[dict,avglen]=huffmandict(symbols,p)

hcode=huffmanenco(m,dict)

dsig = huffmandeco(hcode,dict)

code\_length=length(hcode)

Hx=Hx+(p(m)\*(-log(p(m)))/(log(2)));

end

display(Hx);

Efficiency=(Hx/avglen)\*100

Disp(Efficiency)

**OUTPUT🡪**

Enter number of symbols: 6

Enter the symbol number: 1

Enter the probability: 0.3

Enter the symbol number: 2

Enter the probability: 0.25

Enter the symbol number: 3

Enter the probability: 0.2

Enter the symbol number: 4

Enter the probability: 0.12

Enter the symbol number: 5

Enter the probability: 0.05

Enter the symbol number: 6

Enter the probability: 0.08

p =

0.3000 0.2500 0.2000 0.1200 0.0800 0.0500

0.3000 0.2500 0.2000 0.1200 0.0800 0.0500

Hx =

0

dict =

6×2 cell array

{[1]} {[ 0 0]}

{[2]} {[ 0 1]}

{[3]} {[ 1 1]}

{[4]} {[ 1 0 1]}

{[5]} {[1 0 0 0]}

{[6]} {[1 0 0 1]}

avglen =

2.3800

Hx =

2.3601

Efficiency =

99.1659

Efficiency= 99.165859