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**TITLE:IMPLEMENTATION OF ALGORITHM FOR GENERATION AND EVALUATION OF VARIABLE LENGTH SOURCE CODING USING HUFFMAN CODING.**

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**CODE:**

clear all;

clc;

n=5; % no. of inputs

disp('Probabilities of messages :');

p=[0.4 0.2 0.1 0.2 0.1];disp(p);

s=1:n;

[dict,avglen]=huffmandict(s,p);

disp('Huffman Dicitionary :');disp(dict);

disp('Huffman bit length :');disp(avglen);

temp = dict;

for i=1:length(temp)

temp{i,2}=num2str(temp{i,2});

end

disp(temp);

sig=[1 3 4 2];

disp('String of message:');disp(sig);

disp('Huffman codes for given messages:');

sc=huffmanenco(sig,dict);disp(sc);

disp('Received bit string:');

mr=[1 0 0 1 1 0 1 0 0 0];

mo=huffmandeco(mr,dict);

disp(mo);

err=isequal(sig,mo);

if err==1

disp('Message recovered correctly');

else

disp('Error in decoding');

end

**OUTPUT:**

Probabilities of messages : 0.4000 0.2000 0.1000 0.2000 0.1000

Huffman Dicitionary :

[1] [ 1]

[2] [1x3 double]

[3] [1x4 double]

[4] [1x2 double]

[5] [1x4 double]

Huffman bit length :

2.2000 [1] '1'

[2] '0 0 0'

[3] '0 0 1 1'

[4] '0 1'

[5] '0 0 1 0'

String of message:

1 3 4 2

Huffman codes for given messages:

1 0 0 1 1 0 1 0 0 0

Received bit string:

1 3 4 2

Message recovered correctly