Tutorial -V

Shannon-Fano Coding

SSN

Problem No: 1

- Consider a DMS with seven possible symbols x_i, i=1,2,…
……,8 and the corresponding statistics as

Message	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8
Probability	0.25	0.25	0.125	0.125	0.0625	0.0625	0.0625	0.0625

- And also determine the following:
    i. Average codeword length
    ii. Entropy of the source
    iii. Coding efficiency
    iv. How much average codeword length exceeds entropy?
    v. Variance of the code.