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**Assignment Lesson 5**

1) Calculate total size of an video in 1h15mn? If we know:

Resolution of an image: 780x640 pixels

Number of frames per second: 45f/s

Number of bits: 24 bits color

2) Calculate entropy of following string:

Input string: adcabcdebaabeddccead

**Answer**

1). Calculate total size of an video in 1h15mn

Given: - resolution of an image: 780x640 pixels = 499,200 pixels

* number of frames per second: 45f/s
* number of bits: 24 bits color = 3 bits
* time: 1h15mn = 75 mn \* 60 = 4500
* vns = 499,200 \* 45 \* 3 \* 4500 = 303,264,000,000 bytes

2). Calculate entropy of following string:

Input string: adcabcdebaabeddccead

* Total number of string n = 19
* Probability of each symbol

. P(a) = 7/19 = 0.3684

. P(b) = 3/19 = 0.1578

. P(c) = 3/19 = 0.1578

. P(d) = 4/19 = 0.2105

. P(e) = 2/19 = 0.1052

* *H(X) = =*

Therefore, H(X) = 2.239