CS 4390: HW 3

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1 Data rate problem

It is desired to send a sequence of computer screen images over optical fiber. The screen is 3840 $\times$ 2160 pixels, each pixel being 24 bits. There are 60 screen images per second. What data rate is needed?

$$\text{Data Rate} = \frac{\text{Number of bits}}{\text{Bits per second}}$$

To find the bits per second quantity, we must first calculate the number of bits in a screen image. In this case, there are 24 bits $\cdot$ (3840 $\times$ 2160) = 199065600 bits per image.

Therefore, the data rate needed is $(24bits) \cdot (3840 \times 2160pixels)/$

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