CS510 Intro to Multimedia Networking: Homework #4

Due on October 28, 2015 at 8:00am

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Problem 1

What are four main differences between GIF and PNG?
  1) Color Pallet. GIF uses only 256 colors pallet, when JPEG is full color (24 bit)
  2) Encoding. GIF uses rather simplistic encoding, like LZW, when creating JPEG images is fairly complicated.
  3) Purpose - GIF great for images that use small set of colors for example logo.
  4) Tunable compression rate. JPEG images quality can be adjusted, whereas GIF cannot.

Problem 2

Why is zig-zag reordering used in JPEG compression?

Problem 3

What are the entropy encoding techniques employed in JPEG

Problem 4

what is the main difference between how the macroblocks are encoded in h.261 versus MPEG-1

Problem 5

Suppose we have a set of frames (number 1 ... n) that we would like to compress into MPEG-1 with the following frame types:
I_0 B_1 B_2 I_3 P_4 B_5 P_6 I_7 B_8 B_9 I_{10} I_{11} B_{12} B_{13} P_{14} P_{15} P_{16} I_{17}
Assuming, they all fit into one group of pictures (GOP), what order do these frames appear in the compressed stream?