DS Project Topic

Project Title: *Deadbeat Huffman & the Lost Pixels*

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The topic we have chosen for the Data Structures project is topic # 6: <u>*Image Compression Algorithm*</u>

We will implement this algorithm by using the Huffman Coding Algorithm. What we have decided so far regarding the implementation is that we will process the image, either raster or vector, and extract the pixel colors of the image in the form of RGB (red green blue) values. We will then count the frequency of the occurence of each color and insert the frequencies inside an array and sort this array in ascending order using QuickSort. We will then form a Huffman Tree using a Binary Tree data structure of the frequencies of each associated color. After the Huffman Tree is created we will then traverse the tree and associate each "Edge" of the tree with a Bit Pattern. After doing so we will traverse the entire tree again and extract the new bit pattern of each color. This will lead to a decreased bit-pattern set of each color, and in turn, this will compress the image. We will take into consideration other implementation details that we might have missed at this initial stage.