Computer Science: An Overview
Edition 8 Activities
Chapter 1, Data Storage

CSCI 102T Lab 3: Image Compression

Lab Report

Name _____

Procedure
Start the ImageApplet and answer the questions below. When the ImageApplet is first started the image displayed should be "silver dollar – greyscale", the compression method should be "JPEG Compression" and the Compression Level should be 50%. The Original and Compressed Images should look the same.

Stage 1. Identifying compression artifacts with increasing compression
A. With the image "silver dollar – greyscale" and method "JPEG Compression", lower the compression level from 50 down to 0. What happens to the image as you do so? At what level of compression does the image first look degraded? What are the compression artifacts you see?

B. With the image "Caterpillar - color" and method "Reduced bits per pixel", lower the compression level from 8 down to 1. What happens to the image as you do so? At what number of bits does the image first look degraded? What are the compression artifacts?

Stage 2. Evaluating image compression size
C. Set the image compression method to "JPEG Compression" and for each of the images below, set the compression to the levels 5 to 50 in increments of 5 and record the compressed size of the image in bytes.

Compression Level	Silver dollar - color	Silver dollar - greyscale	Cat - color	Caterpillar - greyscale
5				
10				
15				
20				
25				
30				
35				
40				
45				
50				

D. Repeat the exercise in (C) but this time set the compression method to "Reduced bits per pixel".

Compression Level - bits	Silver dollar - color	Silver dollar - greyscale	Cat - color	Caterpillar - greyscale
1				
2				
3				
4				
5				
6				
7				
8				

E. For the Silver dollar case in (C) above, what is the compression ratio for each Compression Level setting? (The compression ratio is original size/compressed size).

Compression Level	Silver dollar color	Silver dollar greyscale
5		
10		
15		
20		
25		
30		
35		
40		
45		
50		

Stage 3. Evaluating image compression quality

F. Set the image compression method to "JPEG Compression" and for each of the images below, set the compression to the levels 5 to 50 in increments of 5 and record the quality of the image. Represent quality as a number from 1-5, where 1 is Poor and 5 is Excellent.

Compression Level	Silver dollar - color	Silver dollar - greyscale	Cat - color	Caterpillar - greyscale
5				
10				
15				
20				
25				
30				
35				
40				
45				
50				

G. Set the image compression method to "Reduced bits per pixel" and for each of the images below, set the compression to the levels 1 to 8 and record the quality of the image. Represent quality as a number from 1-5, where 1 is Poor and 5 is Excellent.

Compression Level	Silver dollar - color	Silver dollar - greyscale	Cat - color	Caterpillar - greyscale
1				
2				
3				
4				
5				
6				
7				
8				