ASSIGNMENT 4  
DUE DATE: Tuesday 17 May, 2011  11:59 PM

The purpose of this assignment is to introduce you to data carving.

Description

In this assignment, you will write a Java program called ImageCarver.java that extracts (carves) JPEG images from a file representing the unallocated space found on a disk.

The program should perform a header–footer and/or header–‘maximum file size’ carving to carve out possible JPEG images from the test file (unalloc.img). Recall that JPEG files start with the header FF D8 FF and end with the footer FF D9.

Output

The overall idea is to look for the header, and once found, look for the footer. The bytes between these offsets (including the header and footer) are then possibly a JPEG image file. The method will not work perfectly if the file is fragmented, but you should still get some idea of the beginning few sectors of the image.

For every image you carve, the following outputs must be produced:

- A .jpg file of the image. You just need to dump the bytes from the start of the header to the end of the footer into a file. You may name the files using numbers – first file is 1.jpg, then 2.jpg, and so on.

- Print to the display:
  - the file name (the one assigned by you)
  - offset in unalloc.img where you found the image (i.e. offset of the first FF in the header)
  - offset in unalloc.img where the image data ends (i.e. offset of the D9 in the footer)

For example, unalloc.img has the following image starting at offset 0x281000 and ending at offset 0x288929 (both inclusive). This image has a size of 31018 bytes.
Submission

Follow file naming conventions and fully comment your code. Upload the ImageCarver.java file to Blackboard.

Grading

The assignment is worth 10 points. 5 of these points will be given based on the number of pictures your program is able to carve out and how close the size of carved images are to that of the real ones.

A program that does not compile is a program that you did not submit at all. Remember the GTA is not required to debug your program to give you partial points.

The late policy is available at http://cs.du.edu/2555/assignments.html. You must work alone on this assignment.