Write a run-length coding program for images and test it.

Input images

“baboon.ipt” and “face.ipt.” Both are in SADIE format, with 8 bits/pixel and a 512-byte header at the front of the file that contains ancillary information on image size, etc. You can simply skip that header by reading 512 bytes and then read the image.

Tasks

1. Run your program on both images.

2. Use at least 5 threshold values for each image and make plots similar to those in the notes p292. Determine the “intrinsic” runlength for each image.

3. Discuss/explain the differences in compression efficiency on the two images in terms of their content.

Software

You can write a program in C, Matlab, or IDL to do this assignment. You can’t do this homework with the tclSADIE software.

Report

Write a 2-page report (maximum for text, excluding pictures, graphs, etc.) describing your work and include hardcopies of the processed images, graphics and numerical analysis for the evaluation.

You may work with another student on this assignment and turn in one report. In that case, both of you will receive the same grade.