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1501 Assignment 3

LZW Comparison Essay

For this project, we were assigned to modify the LZW.java file to attempt to make it better. We added the dictionary reset features which resets the dictionary when full any time during the algorithm. LZWmod and LZWmod with dictionary reset were comparable with their compression ratios in about half the files. For edit.exe and winnt256.bmp, LZW performed the worse and LZWmod (both versions) and compression were a lot more comparable in efficiency. Other than that, LZW was consistently worse, but only marginally. Overall, I think compression.exe had the best compression ratio.

The test files with the worst compression ratios were generally pictures. These were .gif, .jpg or .bmp files. I feel like this is because we don’t want to lose any information. These files may have more varying information, making LZW less effective. All other files, such as .tar, .txt and .class files were more similar with about compression rates in the 1 – 4 range. I thought this was interesting because of the outlier wacky.bmp that had a compression ratio in the 200’s. All file were able to be compressed in a timely manner with each of the four ways. See other page for table of compression ratios.

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