The header of the compressed file contains the width, height, maxGrayValue, and rule. The first three are required for the pgm image and for processing the data while the last one is used to decode the image.

The data of the compressed file consists of integer values [-255, 255]. Each integer corresponds to the prediction error between the predicted values and the actual values of the pixels of the original image.

|  |  |  |
| --- | --- | --- |
| Rule | Boats | Camera |
| 1 | src/output/stats/boats.1.png | src/output/stats/camera.1.png |
| 2 | src/output/stats/boats.2.png | src/output/stats/camera.2.png |
| 3 | src/output/stats/boats.3.png | src/output/stats/camera.3.png |
| 4 | src/output/stats/boats.4.png | src/output/stats/camera.4.png |

The shapes of the histograms indicate that there is a lower frequency for prediction errors of higher values. Meaning that the prediction errors tend to be small. The shapes also show which rules produce better results as rules with a steeper slops and lower frequencies for higher values are better.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Rule | Boats | | | | Camera | | | |
| **Average** | **Standard Deviation** | **Encoding Time** | **Decoding Time** | **Average** | **Standard Deviation** | **Encoding Time** | **Decoding Time** |
| 1 | 9.039 | 14.029 | 0m0.060s | 0m0.056s | 9.166 | 20.819 | 0m0.044s | 0m0.043s |
| 2 | 7.428 | 10.303 | 0m0.108s | 0m0.075s | 8.069 | 15.850 | 0m0.068s | 0m0.028s |
| 3 | 6.780 | 9.020 | 0m0.110s | 0m0.058s | 7.257 | 14.303 | 0m0.027s | 0m0.051s |
| 4 | 5.358 | 6.721 | 0m0.101s | 0m0.081s | 6.255 | 12.720 | 0m0.067s | 0m0.040s |

Boats: 4. The histogram shows a steeper slope and less high error frequencies than the other histograms. As a result, the average of prediction errors is lower.

Camera: 4. The histogram shows a steeper slope and less high error frequencies than the other histograms. 3 comes closest to 4 however the slop is not as steep. As a result, the average of prediction errors is lower.