ASSIGNMENT -5

Compression ratios of Koala.jpg with 10 iterations:

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| --- | --- | --- | --- |
| K Value | Size before compression (in KB) | Size after compression (in KB) | Ratio |
| 2 | 762.53 | 128.1 | 5.95 |
| 5 | 762.53 | 170.16 | 4.47 |
| 10 | 762.53 | 164.64 | 4.63 |
| 15 | 762.53 | 159.6 | 4.77 |
| 20 | 762.53 | 162.21 | 4.70 |

Compression ratios of Penguins.jpg with 10 iterations.

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| --- | --- | --- | --- |
| K Value | Size before compression (in KB) | Size after compression (in KB) | Ratio |
| 2 | 759.604 | 83.225 | 9.13 |
| 5 | 759.604 | 103.65 | 7.32 |
| 10 | 759.604 | 112.71 | 6.74 |
| 15 | 759.604 | 112.91 | 6.72 |
| 20 | 759.604 | 112.97 | 6.723 |

Question:

Q1: Is there a tradeoff between image quality and degree of compression? What would be a good value of K for each of the two images?

Ans: Yes, k represents the degree of compression. Large K value shows more colors and produces higher image quality due to its larger number of clusters whereas smaller K values shows lesser colors compare to the higher K value and due to this the quality of the image is compromised in smaller K values. For the first image, Koala.jpg for K = 10, compression ratio = 4.63 which is close to the higher K values. For the second image, Penguins.jpg, compression ratio=6.74 for K = 10 which is close the higher K values of that image.