**Report – Assignment-3**

Image-1 (Koala.jpg)

Note: All the compressed images obtained for applying the algorithm on the image is stored in a separate folder called Resultant\_Image for all different values of K.

The compressed image size is computed using the formula : 24\* k + number of pixels\*log(k)

The compression Ratio is given by original Image Size/compressed Image size

|  |  |  |  |
| --- | --- | --- | --- |
| K value | Compression Ratio | Original Image Size | Compressed Image Size |
| 2 | 1.442568015393239 | 786432 | 545161.1235021189 |
| 5 | 0.621276032505321 | 786432 | 1265833.4763513743 |
| 10 | 0.4342369298089968 | 786432 | 1811066.5998534935 |
| 15 | 0.3692069630237951 | 786432 | 2130057.335753213 |
| 20 | 0.33374020434699864 | 786432 | 2356419.7233556123 |

Image-2 (Penguins.jpg)

|  |  |  |  |
| --- | --- | --- | --- |
| K value | Compression Ratio | Original Image Size | Compressed Image Size |
| 2 | 1.442568015393239 | 786432 | 545161.1235021189 |
| 5 | 0.621276032505321 | 786432 | 1265833.4763513743 |
| 10 | 0.4342369298089968 | 786432 | 1811066.5998534935 |
| 15 | 0.3692069630237951 | 786432 | 2130057.335753213 |
| 20 | 0.33374020434699864 | 786432 | 2356419.7233556123 |

Observation:

1. From the table we observe that as the value of k increases the quality of the compressed image increases and is almost same as that of original image. But for lower values of k many features of compressed image is lost.
2. Also as the value of k increases the compression ratio decreases and these two parameters are inversely related.
3. Thus higher value of K helps in getting better quality compressed image. Thus in our case k=20 is good
4. Thus to conclude we can say that lower values of k compresses the image to greater extent and more information is lost and thus quality of the image is not good.