Report:

Images of compressed pic for each k-value can be found in the folder "ProccessedPic".
Took 4 reading for each k value for each image. Found its Compression ratio. Please see below for the details:

Formula Used to calculate Mean and Variance:

- Compression ratio = Image's original size / Compressed K-value Image Size

- Mean = (Sum of all ratio)/4.

- Variance = (Summation of (Ratio-Mean)^2)/4.

K means Compression for Koala.jpg (Original size= 781 KB)

K-Values	Ratio-1	Ratio-2	Ratio-3	Ratio-4	Mean	Variance
2	5.0064	5.2411	5.0465	5.0762	5.0925	0.00797
5	3.9246	4.6766	4.3149	4.4562	4.343	0.07498
10	3.9644	3.8855	4.7943	4.4628	4.2767	0.13827
15	3.8472	3.9379	4.1485	4.2684	4.0505	0.02777
20	4.7914	4.8453	4.4675	4.3972	4.6253	0.03822

K means Compression for Penguine.jpg (Original size= 778 KB)

K-Values	Ratio-1	Ratio-2	Ratio-3	Ratio-4	Mean	Variance
2	7.1376	6.0781	6.9676	6.8865	6.7674	0.16661
5	6.0781	6.3567	5.0876	5.9845	5.8767	0.22631
10	3.5203	4.2387	4.3365	4.4628	4.1395	0.13414
15	3.2148	3.6379	3.1395	3.6683	3.4151	0.05745
20	3.2827	3.4356	4.4675	4.3972	3.8957	0.29147

Conclusions from K values:

From above; it is clear that increase in k value decreases the compression but increases quality. As the K value increases the size of the image increases (sometimes it decreases) on running it multiple times. The value k=10 looks good tradeoff for quality and compression. (Ideally) it is best when you know the exact number of distinct colors and with proper initialization.