**COLOR Quantization**

VS Code is used to develop the program

Libraries: skimage, KMeans from sklearn.cluster , Numpy, Path

Soure code: color

Outputs are stored in quantizedImages folder

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Image** | **Original File Size** | **Value of k used** | **Image Quality** | **Image Size** |
| Image 1 | 356KB | 5 | Hazy | 243KB |
| Image 2 | 537KB | 5 | Hazy | 263KB |
| Image 3 | 599KB | 5 | Hazy | 275KB |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Image** | **Original File Size** | **Value of k used** | **Image Quality** | **Image Size** |
| Image 1 | 356KB | 10 | Appears Blurred | 377KB |
| Image 2 | 537KB | 10 | Appears Blurred | 463KB |
| Image 3 | 599KB | 10 | Appears Blurred | 452KB |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Image** | **Original File Size** | **Value of k used** | **Image Quality** | **Image Size** |
| Image 1 | 356KB | 45 | Looks almost like original | 503KB |
| Image 2 | 537KB | 45 | Looks almost like original | 554KB |
| Image 3 | 599KB | 45 | Looks almost like original | 579KB |

**PCA**

VS Code is used to develop the program

Libraries: pca from sklearn.decomposition ,cv2 from opencv-python, Path

( Used skimage to read the data, but warning says Lossy conversion from float64 to uint8 )

Source code: pca.py

Outputs are stored in compressedImages folder

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| **Image** | **Original File Size** | **Value of principal components** | **Image Quality** | **Image Size** |
| Image 1 | 356KB | 2 | Hazy | 243KB |
| Image 2 | 537KB | 2 | Hazy | 263KB |
| Image 3 | 599KB | 2 | Hazy | 275KB |

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| --- | --- | --- | --- | --- |
| **Image** | **Original File Size** | **Value of principal components** | **Image Quality** | **Image Size** |
| Image 1 | 356KB | 20 | Appears Blurred | 377KB |
| Image 2 | 537KB | 20 | Appears Blurred | 463KB |
| Image 3 | 599KB | 20 | Appears Blurred | 452KB |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Image** | **Original File Size** | **Value of principal components** | **Image Quality** | **Image Size** |
| Image 1 | 356KB | 45 | Looks almost like original | 503KB |
| Image 2 | 537KB | 45 | Looks almost like original | 554KB |
| Image 3 | 599KB | 45 | Looks almost like original | 579KB |