Image Encryption and Compression

**[Sample Test Case]**

# FIRST: Testing Image Encryption [[Images Folder](SampleCases_Encryption)]

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Input Image Name | Initial Seed | Tap Position | Output Image Name | Extra Info | | |
| Size | Input number of colors | Output number of colors |
| Sample1 | 10001111 | 6 | Sample1Output | 200\*200 | 3 | 63 |
| Sample2 | 1110001011 | 8 | Sample2Output | 250\*250 | 395 | 7860 |
| Sample3 | 01101000010 | 2 | Sample3Output | 267\*267 | 6256 | 16277 |
| Sample4 | 011010000101001 | 10 | Sample4Output | 600\*600 | 733 | 129297 |
| Sample5 | 01101000010100010000 | 16 | Sample5Output | 600\*428 | 18673 | 253837 |
| Sample6 | 10011100 | 0 | Sample6Output | 622\*630 | 5 | 105 |

# SECOND: Testing Image Compression [[Images Folder](SampleCases_Compression)]

## CASE1:

|  |  |  |
| --- | --- | --- |
| 1 | Input Image | Sample1.bmp |
| Initial Seed | 1001 |
| Tap Position | 1 |
| Output of Encryption | Sample1\_1\_Enc.bmp |
| Color Frequencies | |  |  |  | | --- | --- | --- | | **Red** | **Green** | **Blue** | | * 24, 20299 * 231, 19701 | * 158, 30199 * 97, 9801 | * 121, 30100 * 134, 9900 | |
| Huffman Tree |  |
| Compression Output | 15000 bytes |
| Compression Ratio | 12.5% |

## CASE2:

|  |  |  |
| --- | --- | --- |
| 2 | Input Image | Sample6.bmp |
| Initial Seed | 101011 |
| Tap Position | 5 |
| Output of Encryption | Sample6\_Enc.bmp |
| Color Frequencies | |  |  |  | | --- | --- | --- | | **Red** | **Green** | **Blue** | | * 240, 271154 * 32, 110325 * 223, 10219 * 255, 162 | * 240, 271154 * 0, 68702 * 112, 41623 * 208, 10219 * 255, 162 | * 240, 271154 * 112, 68702 * 16, 41623 * 49, 10219 * 255, 162 | |
| Huffman Tree |  |
| Compression Output | 209106 bytes |
| Compression Ratio | 17.7% |

## CASE3:

|  |  |  |
| --- | --- | --- |
| 3 | Input Image | Sample1.bmp |
| Initial Seed | 00001 |
| Tap Position | 0 |
| Output of Encryption | Sample1\_2\_Enc.bmp |
| Color Frequencies | |  |  |  | | --- | --- | --- | | **Red** | **Green** | **Blue** | | * 10, 2900 * 239, 2900 * 86, 2901 * 120, 2900 * 179, 2899 * 193, 2900 * 157, 2899 * 76, 2815 * 98, 2815 * 245, 2815 * 16, 2814 * 169, 2814 * 135, 2814 * 62, 2814 | * 49, 4315 * 250, 4314 * 136, 4315 * 212, 4314 * 67, 4313 * 166, 4314 * 31, 4314 * 188, 1401 * 224, 1400 * 206, 1400 * 5, 1400 * 119, 1400 * 43, 1400 * 89, 1400 | * 15, 4300 * 152, 4300 * 125, 4301 * 196, 4300 * 234, 4300 * 33, 4300 * 83, 4299 * 172, 1415 * 240, 1415 * 103, 1414 * 130, 1414 * 59, 1414 * 21, 1414 * 222, 1414 | |
| Huffman Tree |  |
| Compression Output | 55980 bytes |
| Compression Ratio | 46.6% |