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1 C:\Users\jacobmichaellarsen\PycharmProjects\pycrypt\
  venv\Scripts\python.exe C:\Users\jacobmichaellarsen\
  PycharmProjects\pycrypt\crypto2\utils\tests\
  randomness.py
2 *****
  *****
3
  Statistical
  Analysis of Bitmap
4   Located at C:\Users\jacobmichaellarsen\
  PycharmProjects\pycrypt\crypto2\ecc\bittest_6.bmp

5
6
7
  Frequency
  Tests
8   Frequency of 1s
9       49.946%
10  Percentage of 32-bit blocks with < 0.1 deviance
  from 50%
11       78.052%
12  Percentage of 64-bit blocks with < 0.1 deviance
  from 50%
13       90.015%
14  Percent difference of actual vs expected runs:
15       -25.121%
16  Percent difference of actual vs expected
  mismatches:
17       50.243%
18
19  Longest run: PASSED
20       Min Expected: -827.0924988699915
21       Max Expected: 845.0924988699915
22       Actual: 17
23
24
  Complexity
  Tests
25
26  Maurer Universal Statistics Test, size 16
  zlib: 1.84211      lzma: 1.21053      bz2: 1.39024
27
28  Maurer Universal Statistics Test, size 32

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28 zlib: 1.75000      lzma: 1.40000      bz2: 1.74419
29
30      Maurer Universal Statistics Test, size 64
   zlib: 1.48438      lzma: 1.76190      bz2: 1.73438
31
32      Maurer Universal Statistics Test, size 128
   zlib: 1.3671875    lzma: 1.8125      bz2: 1.484375
33
34      Linear Complexity
35          255
36      Serial Test (chi-squares, p-val)
37          (1607497.0703125, 0.0)
38      Approximate Entropy Test
39          0.6927085106998101
40      Cumulative Sums Test
41          0.0017547607421875
42      Random Excursions Test
43          (0, 1.0)
44      Random Excursions Variant Test
45          (131075.50003051758, 1.0)
46
                                     Matrix
   Tests
47      Binary Matrix Rank Test
48          512
49
50
```