

Program 1 Output Screenshots

```
1  run encryption program; original message =
2  I love Wads! It is awesome!
3  pt_no = 00000101
4  LFSR_ptrn = 0x69, LFSR_init = 0x20
5  i=      0, msg_pad=0x20, lfsr=0100000 msg_crypt w/ parity = 0x00
6  i=      1, msg_pad=0x20, lfsr=1000001 msg_crypt w/ parity = 0xe1
7  i=      2, msg_pad=0x20, lfsr=0000010 msg_crypt w/ parity = 0x22
8  i=      3, msg_pad=0x20, lfsr=0000100 msg_crypt w/ parity = 0x24
9  i=      4, msg_pad=0x20, lfsr=0001000 msg_crypt w/ parity = 0x28
10 i=      5, msg_pad=0x20, lfsr=0010001 msg_crypt w/ parity = 0xb1
11 i=      6, msg_pad=0x20, lfsr=0100011 msg_crypt w/ parity = 0x03
12 i=      7, msg_pad=0x20, lfsr=1000110 msg_crypt w/ parity = 0x66
13 i=      8, msg_pad=0x20, lfsr=0001101 msg_crypt w/ parity = 0x2d
14 i=      9, msg_pad=0x20, lfsr=0011010 msg_crypt w/ parity = 0x3a
15 i=     10, msg_pad=0x20, lfsr=0110101 msg_crypt w/ parity = 0x95
16 i=     11, msg_pad=0x20, lfsr=1101010 msg_crypt w/ parity = 0xca
17 i=     12, msg_pad=0x20, lfsr=1010101 msg_crypt w/ parity = 0xf5
18 i=     13, msg_pad=0x20, lfsr=0101010 msg_crypt w/ parity = 0x0a
19 i=     14, msg_pad=0x20, lfsr=1010100 msg_crypt w/ parity = 0x74
20 i=     15, msg_pad=0x49, lfsr=0101001 msg_crypt w/ parity = 0x60
21 i=     16, msg_pad=0x20, lfsr=1010011 msg_crypt w/ parity = 0xf3
22 i=     17, msg_pad=0x6c, lfsr=0100110 msg_crypt w/ parity = 0xca
23 i=     18, msg_pad=0x6f, lfsr=1001101 msg_crypt w/ parity = 0x22
24 i=     19, msg_pad=0x76, lfsr=0011011 msg_crypt w/ parity = 0xed
25 i=     20, msg_pad=0x65, lfsr=0110110 msg_crypt w/ parity = 0x53
26 i=     21, msg_pad=0x20, lfsr=1101101 msg_crypt w/ parity = 0x4d
27 i=     22, msg_pad=0x57, lfsr=1011010 msg_crypt w/ parity = 0x8d
28 i=     23, msg_pad=0x61, lfsr=0110100 msg_crypt w/ parity = 0x55
29 i=     24, msg_pad=0x64, lfsr=1101001 msg_crypt w/ parity = 0x8d
30 i=     25, msg_pad=0x73, lfsr=1010010 msg_crypt w/ parity = 0x21
31 i=     26, msg_pad=0x21, lfsr=0100101 msg_crypt w/ parity = 0x84
32 i=     27, msg_pad=0x20, lfsr=1001010 msg_crypt w/ parity = 0x6a
33 i=     28, msg_pad=0x49, lfsr=0010100 msg_crypt w/ parity = 0xdd
34 i=     29, msg_pad=0x74, lfsr=0101000 msg_crypt w/ parity = 0x5c
35 i=     30, msg_pad=0x20, lfsr=1010000 msg_crypt w/ parity = 0xf0
36 i=     31, msg_pad=0x69, lfsr=0100001 msg_crypt w/ parity = 0x48
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37 i=      32, msg_pad=0x73, lfsr=1000010 msg_crypt w/ parity = 0xb1
38 i=      33, msg_pad=0x20, lfsr=0000101 msg_crypt w/ parity = 0xa5
39 i=      34, msg_pad=0x61, lfsr=0001011 msg_crypt w/ parity = 0x6a
40 i=      35, msg_pad=0x77, lfsr=0010110 msg_crypt w/ parity = 0xe1
41 i=      36, msg_pad=0x65, lfsr=0101100 msg_crypt w/ parity = 0xc9
42 i=      37, msg_pad=0x73, lfsr=1011000 msg_crypt w/ parity = 0x2b
43 i=      38, msg_pad=0x6f, lfsr=0110000 msg_crypt w/ parity = 0x5f
44 i=      39, msg_pad=0x6d, lfsr=1100001 msg_crypt w/ parity = 0x0c
45 i=      40, msg_pad=0x65, lfsr=1000011 msg_crypt w/ parity = 0xa6
46 i=      41, msg_pad=0x21, lfsr=0000110 msg_crypt w/ parity = 0x27
47 i=      42, msg_pad=0x20, lfsr=0001100 msg_crypt w/ parity = 0xac
48 i=      43, msg_pad=0x20, lfsr=0011001 msg_crypt w/ parity = 0x39
49 i=      44, msg_pad=0x20, lfsr=0110010 msg_crypt w/ parity = 0x12
50 i=      45, msg_pad=0x20, lfsr=1100101 msg_crypt w/ parity = 0xc5
51 i=      46, msg_pad=0x20, lfsr=1001011 msg_crypt w/ parity = 0xeb
52 i=      47, msg_pad=0x20, lfsr=0010111 msg_crypt w/ parity = 0xb7
53 i=      48, msg_pad=0x20, lfsr=0101111 msg_crypt w/ parity = 0x0f
54 i=      49, msg_pad=0x20, lfsr=1011111 msg_crypt w/ parity = 0xff
55 i=      50, msg_pad=0x20, lfsr=0111111 msg_crypt w/ parity = 0x9f
56 i=      51, msg_pad=0x20, lfsr=1111111 msg_crypt w/ parity = 0x5f
57 i=      52, msg_pad=0x20, lfsr=1111110 msg_crypt w/ parity = 0xde
58 i=      53, msg_pad=0x20, lfsr=1111101 msg_crypt w/ parity = 0xdd
59 i=      54, msg_pad=0x20, lfsr=1111010 msg_crypt w/ parity = 0x5a
60 i=      55, msg_pad=0x20, lfsr=1110101 msg_crypt w/ parity = 0x55
61 i=      56, msg_pad=0x20, lfsr=1101011 msg_crypt w/ parity = 0x4b
62 i=      57, msg_pad=0x20, lfsr=1010110 msg_crypt w/ parity = 0xf6
63 i=      58, msg_pad=0x20, lfsr=0101101 msg_crypt w/ parity = 0x8d
64 i=      59, msg_pad=0x20, lfsr=1011011 msg_crypt w/ parity = 0x7b
65 i=      60, msg_pad=0x20, lfsr=0110111 msg_crypt w/ parity = 0x17
66 i=      61, msg_pad=0x20, lfsr=1101110 msg_crypt w/ parity = 0x4e
67 i=      62, msg_pad=0x20, lfsr=1011101 msg_crypt w/ parity = 0x7d
68 i=      63, msg_pad=0x20, lfsr=0111011 msg_crypt w/ parity = 0x1b
69 encrypted string =
70 0BDHQ#0MZ5j0*000jB0sm-u-A$0}|0hQE001K,FGLY2e0W/0?~}zuk0-07n0;

```

```

73 program 1:
74 0 bench msg: 00 dut msg: 00
75 1 bench msg: 0 e1 dut msg: e1
76 2 bench msg: B 22 dut msg: 22
77 3 bench msg: D 24 dut msg: 24
78 4 bench msg: H 28 dut msg: 28
79 5 bench msg: Q b1 dut msg: b1
80 6 bench msg: # 03 dut msg: 03
81 7 bench msg: 0 66 dut msg: 66
82 8 bench msg: M 2d dut msg: 2d
83 9 bench msg: Z 3a dut msg: 3a
84 10 bench msg: 5 95 dut msg: 95
85 11 bench msg: j ca dut msg: ca
86 12 bench msg: 0 f5 dut msg: f5
87 13 bench msg: * 0a dut msg: 0a
88 14 bench msg: 0 74 dut msg: 74
89 15 bench msg: 0 60 dut msg: 60
90 16 bench msg: 0 f3 dut msg: f3
91 17 bench msg: j ca dut msg: ca
92 18 bench msg: B 22 dut msg: 22
93 19 bench msg: 0 ed dut msg: ed
94 20 bench msg: s 53 dut msg: 53
95 21 bench msg: m 4d dut msg: 4d
96 22 bench msg: - 8d dut msg: 8d
97 23 bench msg: u 55 dut msg: 55
98 24 bench msg: - 8d dut msg: 8d
99 25 bench msg: A 21 dut msg: 21
100 26 bench msg: $ 84 dut msg: 84
101 27 bench msg: 0 6a dut msg: 6a
102 28 bench msg: } dd dut msg: dd
103 29 bench msg: | 5c dut msg: 5c
104 30 bench msg: 0 f0 dut msg: f0

```

```

73 program 1:
74     0 bench msg: 00 dut msg: 00
75     1 bench msg: 0 e1 dut msg: e1
76     2 bench msg: B 22 dut msg: 22
77     3 bench msg: D 24 dut msg: 24
78     4 bench msg: H 28 dut msg: 28
79     5 bench msg: Q b1 dut msg: b1
80     6 bench msg: # 03 dut msg: 03
81     7 bench msg: 0 66 dut msg: 66
82     8 bench msg: M 2d dut msg: 2d
83     9 bench msg: Z 3a dut msg: 3a
84    10 bench msg: 5 95 dut msg: 95
85    11 bench msg: j ca dut msg: ca
86    12 bench msg: 0 f5 dut msg: f5
87    13 bench msg: * 0a dut msg: 0a
88    14 bench msg: 0 74 dut msg: 74
89    15 bench msg: 0 60 dut msg: 60
90    16 bench msg: 0 f3 dut msg: f3
91    17 bench msg: j ca dut msg: ca
92    18 bench msg: B 22 dut msg: 22
93    19 bench msg: 0 ed dut msg: ed
94    20 bench msg: s 53 dut msg: 53
95    21 bench msg: m 4d dut msg: 4d
96    22 bench msg: - 8d dut msg: 8d
97    23 bench msg: u 55 dut msg: 55
98    24 bench msg: - 8d dut msg: 8d
99    25 bench msg: A 21 dut msg: 21
100    26 bench msg: $ 84 dut msg: 84
101    27 bench msg: 0 6a dut msg: 6a
102    28 bench msg: } dd dut msg: dd
103    29 bench msg: | 5c dut msg: 5c
104    30 bench msg: 0 f0 dut msg: f0

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105    31 bench msg: h 48 dut msg: 48
106    32 bench msg: Q b1 dut msg: b1
107    33 bench msg: E a5 dut msg: a5
108    34 bench msg: 0 6a dut msg: 6a
109    35 bench msg: 0 e1 dut msg: e1
110    36 bench msg: i c9 dut msg: c9
111    37 bench msg: K 2b dut msg: 2b
112    38 bench msg: 5f dut msg: 5f
113    39 bench msg: , 0c dut msg: 0c
114    40 bench msg: F a6 dut msg: a6
115    41 bench msg: G 27 dut msg: 27
116    42 bench msg: L ac dut msg: ac
117    43 bench msg: Y 39 dut msg: 39
118    44 bench msg: 2 12 dut msg: 12
119    45 bench msg: e c5 dut msg: c5
120    46 bench msg: 0 eb dut msg: eb
121    47 bench msg: W b7 dut msg: b7
122    48 bench msg: / 0f dut msg: 0f
123    49 bench msg: 0 ff dut msg: ff
124    50 bench msg: ? 9f dut msg: 9f
125    51 bench msg: 5f dut msg: 5f
126    52 bench msg: ~ de dut msg: de
127    53 bench msg: } dd dut msg: dd
128    54 bench msg: z 5a dut msg: 5a
129    55 bench msg: u 55 dut msg: 55
130    56 bench msg: k 4b dut msg: 4b
131    57 bench msg: 0 f6 dut msg: f6
132    58 bench msg: - 8d dut msg: 8d
133    59 bench msg: 0 7b dut msg: 7b
134    60 bench msg: 7 17 dut msg: 17
135    61 bench msg: n 4e dut msg: 4e
136    62 bench msg: 0 7d dut msg: 7d
137    63 bench msg: ; 1b dut msg: 1b
138 score = 64/64

```

Program 2 Output Screenshots

```
1  run encryption program; original message =
2  Wads has worked once again
3  LFSR_ptrn = 0x7e, LFSR_init = 0x20
4  i=      0, msg_pad=0x20, lfsr=0100000 msg_crypt w/ parity = 0x00
5  i=      1, msg_pad=0x20, lfsr=1000001 msg_crypt w/ parity = 0xe1
6  i=      2, msg_pad=0x20, lfsr=0000011 msg_crypt w/ parity = 0xa3
7  i=      3, msg_pad=0x20, lfsr=0000111 msg_crypt w/ parity = 0x27
8  i=      4, msg_pad=0x20, lfsr=0001110 msg_crypt w/ parity = 0x2e
9  i=      5, msg_pad=0x20, lfsr=0011101 msg_crypt w/ parity = 0xbd
10 i=      6, msg_pad=0x20, lfsr=0111011 msg_crypt w/ parity = 0x1b
11 i=      7, msg_pad=0x20, lfsr=1110110 msg_crypt w/ parity = 0x56
12 i=      8, msg_pad=0x20, lfsr=1101101 msg_crypt w/ parity = 0x4d
13 i=      9, msg_pad=0x20, lfsr=1011010 msg_crypt w/ parity = 0xfa
14 i=     10, msg_pad=0x20, lfsr=0110100 msg_crypt w/ parity = 0x14
15 i=     11, msg_pad=0x20, lfsr=1101001 msg_crypt w/ parity = 0xc9
16 i=     12, msg_pad=0x20, lfsr=1010011 msg_crypt w/ parity = 0xf3
17 i=     13, msg_pad=0x57, lfsr=0100111 msg_crypt w/ parity = 0xf0
18 i=     14, msg_pad=0x61, lfsr=1001111 msg_crypt w/ parity = 0x2e
19 i=     15, msg_pad=0x64, lfsr=0011110 msg_crypt w/ parity = 0xfa
20 i=     16, msg_pad=0x73, lfsr=0111100 msg_crypt w/ parity = 0xcf
21 i=     17, msg_pad=0x20, lfsr=1111000 msg_crypt w/ parity = 0xd8
22 i=     18, msg_pad=0x68, lfsr=1110000 msg_crypt w/ parity = 0x18
23 i=     19, msg_pad=0x61, lfsr=1100001 msg_crypt w/ parity = 0x00
24 i=     20, msg_pad=0x73, lfsr=1000010 msg_crypt w/ parity = 0xb1
25 i=     21, msg_pad=0x20, lfsr=0000100 msg_crypt w/ parity = 0x24
26 i=     22, msg_pad=0x77, lfsr=0001001 msg_crypt w/ parity = 0x7e
27 i=     23, msg_pad=0x6f, lfsr=0010011 msg_crypt w/ parity = 0xfc
28 i=     24, msg_pad=0x72, lfsr=0100110 msg_crypt w/ parity = 0xd4
29 i=     25, msg_pad=0x6b, lfsr=1001101 msg_crypt w/ parity = 0xa6
30 i=     26, msg_pad=0x65, lfsr=0011011 msg_crypt w/ parity = 0x7e
31 i=     27, msg_pad=0x64, lfsr=0110111 msg_crypt w/ parity = 0x53
32 i=     28, msg_pad=0x20, lfsr=1101110 msg_crypt w/ parity = 0x4e
33 i=     29, msg_pad=0x6f, lfsr=1011101 msg_crypt w/ parity = 0xb2
34 i=     30, msg_pad=0x6e, lfsr=0111010 msg_crypt w/ parity = 0xd4
35 i=     31, msg_pad=0x63, lfsr=1110100 msg_crypt w/ parity = 0x17
36 i=     32, msg_pad=0x65, lfsr=1101000 msg_crypt w/ parity = 0x8d
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```

37 i= 33, msg_pad=0x20, lfsr=1010001 msg_crypt w/ parity = 0x71
38 i= 34, msg_pad=0x61, lfsr=0100010 msg_crypt w/ parity = 0xc3
39 i= 35, msg_pad=0x67, lfsr=1000100 msg_crypt w/ parity = 0xa3
40 i= 36, msg_pad=0x61, lfsr=0001000 msg_crypt w/ parity = 0x69
41 i= 37, msg_pad=0x69, lfsr=0010001 msg_crypt w/ parity = 0x78
42 i= 38, msg_pad=0x6e, lfsr=0100011 msg_crypt w/ parity = 0x4d
43 i= 39, msg_pad=0x20, lfsr=1000110 msg_crypt w/ parity = 0x66
44 i= 40, msg_pad=0x20, lfsr=0001101 msg_crypt w/ parity = 0x2d
45 i= 41, msg_pad=0x20, lfsr=0011010 msg_crypt w/ parity = 0x3a
46 i= 42, msg_pad=0x20, lfsr=0110101 msg_crypt w/ parity = 0x95
47 i= 43, msg_pad=0x20, lfsr=1101011 msg_crypt w/ parity = 0x4b
48 i= 44, msg_pad=0x20, lfsr=1010110 msg_crypt w/ parity = 0xf6
49 i= 45, msg_pad=0x20, lfsr=0101100 msg_crypt w/ parity = 0x0c
50 i= 46, msg_pad=0x20, lfsr=1011001 msg_crypt w/ parity = 0xf9
51 i= 47, msg_pad=0x20, lfsr=0110011 msg_crypt w/ parity = 0x93
52 i= 48, msg_pad=0x20, lfsr=1100111 msg_crypt w/ parity = 0x47
53 i= 49, msg_pad=0x20, lfsr=1001110 msg_crypt w/ parity = 0xee
54 i= 50, msg_pad=0x20, lfsr=0011100 msg_crypt w/ parity = 0x3c
55 i= 51, msg_pad=0x20, lfsr=0111001 msg_crypt w/ parity = 0x99
56 i= 52, msg_pad=0x20, lfsr=1110011 msg_crypt w/ parity = 0x53
57 i= 53, msg_pad=0x20, lfsr=1100110 msg_crypt w/ parity = 0xc6
58 i= 54, msg_pad=0x20, lfsr=1001100 msg_crypt w/ parity = 0x6c
59 i= 55, msg_pad=0x20, lfsr=0011001 msg_crypt w/ parity = 0x39
60 i= 56, msg_pad=0x20, lfsr=0110010 msg_crypt w/ parity = 0x12
61 i= 57, msg_pad=0x20, lfsr=1100101 msg_crypt w/ parity = 0xc5
62 i= 58, msg_pad=0x20, lfsr=1001011 msg_crypt w/ parity = 0xeb
63 i= 59, msg_pad=0x20, lfsr=0010111 msg_crypt w/ parity = 0xb7
64 i= 60, msg_pad=0x20, lfsr=0101111 msg_crypt w/ parity = 0x0f
65 i= 61, msg_pad=0x20, lfsr=1011110 msg_crypt w/ parity = 0x7e
66 i= 62, msg_pad=0x20, lfsr=0111101 msg_crypt w/ parity = 0x1d
67 i= 63, msg_pad=0x20, lfsr=1111010 msg_crypt w/ parity = 0x5a
68 encrypted string =
69 0CGN];vm04100N0x8 QD00tF0snRt7-0cC00m0MZ5k0,03g0\9sf0Y2e0W/0=z
70

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```

37 i= 33, msg_pad=0x20, lfsr=1010001 msg_crypt w/ parity = 0x71
38 i= 34, msg_pad=0x61, lfsr=0100010 msg_crypt w/ parity = 0xc3
39 i= 35, msg_pad=0x67, lfsr=1000100 msg_crypt w/ parity = 0xa3
40 i= 36, msg_pad=0x61, lfsr=0001000 msg_crypt w/ parity = 0x69
41 i= 37, msg_pad=0x69, lfsr=0010001 msg_crypt w/ parity = 0x78
42 i= 38, msg_pad=0x6e, lfsr=0100011 msg_crypt w/ parity = 0x4d
43 i= 39, msg_pad=0x20, lfsr=1000110 msg_crypt w/ parity = 0x66
44 i= 40, msg_pad=0x20, lfsr=0001101 msg_crypt w/ parity = 0x2d
45 i= 41, msg_pad=0x20, lfsr=0011010 msg_crypt w/ parity = 0x3a
46 i= 42, msg_pad=0x20, lfsr=0110101 msg_crypt w/ parity = 0x95
47 i= 43, msg_pad=0x20, lfsr=1101011 msg_crypt w/ parity = 0x4b
48 i= 44, msg_pad=0x20, lfsr=1010110 msg_crypt w/ parity = 0xf6
49 i= 45, msg_pad=0x20, lfsr=0101100 msg_crypt w/ parity = 0x0c
50 i= 46, msg_pad=0x20, lfsr=1011001 msg_crypt w/ parity = 0xf9
51 i= 47, msg_pad=0x20, lfsr=0110011 msg_crypt w/ parity = 0x93
52 i= 48, msg_pad=0x20, lfsr=1100111 msg_crypt w/ parity = 0x47
53 i= 49, msg_pad=0x20, lfsr=1001110 msg_crypt w/ parity = 0xee
54 i= 50, msg_pad=0x20, lfsr=0011100 msg_crypt w/ parity = 0x3c
55 i= 51, msg_pad=0x20, lfsr=0111001 msg_crypt w/ parity = 0x99
56 i= 52, msg_pad=0x20, lfsr=1110011 msg_crypt w/ parity = 0x53
57 i= 53, msg_pad=0x20, lfsr=1100110 msg_crypt w/ parity = 0xc6
58 i= 54, msg_pad=0x20, lfsr=1001100 msg_crypt w/ parity = 0x6c
59 i= 55, msg_pad=0x20, lfsr=0011001 msg_crypt w/ parity = 0x39
60 i= 56, msg_pad=0x20, lfsr=0110010 msg_crypt w/ parity = 0x12
61 i= 57, msg_pad=0x20, lfsr=1100101 msg_crypt w/ parity = 0xc5
62 i= 58, msg_pad=0x20, lfsr=1001011 msg_crypt w/ parity = 0xeb
63 i= 59, msg_pad=0x20, lfsr=0010111 msg_crypt w/ parity = 0xb7
64 i= 60, msg_pad=0x20, lfsr=0101111 msg_crypt w/ parity = 0x0f
65 i= 61, msg_pad=0x20, lfsr=1011110 msg_crypt w/ parity = 0x7e
66 i= 62, msg_pad=0x20, lfsr=0111101 msg_crypt w/ parity = 0x1d
67 i= 63, msg_pad=0x20, lfsr=1111010 msg_crypt w/ parity = 0x5a
68 encrypted string =
69 0CGN];vm04100N0x8 QD00tF0snRt7-0cC00m0MZ5k0,03g0\9sf0Y2e0W/0=z
70

```

```

72      program 2:
73          0 bench msg:  20 dut msg: 20
74          1 bench msg:  20 dut msg: 20
75          2 bench msg:  20 dut msg: 20
76          3 bench msg:  20 dut msg: 20
77          4 bench msg:  20 dut msg: 20
78          5 bench msg:  20 dut msg: 20
79          6 bench msg:  20 dut msg: 20
80          7 bench msg:  20 dut msg: 20
81          8 bench msg:  20 dut msg: 20
82          9 bench msg:  20 dut msg: 20
83         10 bench msg:  20 dut msg: 20
84         11 bench msg:  20 dut msg: 20
85         12 bench msg:  20 dut msg: 20
86         13 bench msg: W 57 dut msg: 57
87         14 bench msg: a 61 dut msg: 61
88         15 bench msg: d 64 dut msg: 64
89         16 bench msg: s 73 dut msg: 73
90         17 bench msg:  20 dut msg: 20
91         18 bench msg: h 68 dut msg: 68
92         19 bench msg: a 61 dut msg: 61
93         20 bench msg: s 73 dut msg: 73
94         21 bench msg:  20 dut msg: 20
95         22 bench msg: w 77 dut msg: 77
96         23 bench msg: o 6f dut msg: 6f
97         24 bench msg: r 72 dut msg: 72
98         25 bench msg: k 6b dut msg: 6b
99         26 bench msg: e 65 dut msg: 65
100        27 bench msg: d 64 dut msg: 64
101        28 bench msg:  20 dut msg: 20
102        29 bench msg: o 6f dut msg: 6f
103        30 bench msg: n 6e dut msg: 6e

```

```

104        31 bench msg: c 63 dut msg: 63
105        32 bench msg: e 65 dut msg: 65
106        33 bench msg:  20 dut msg: 20
107        34 bench msg: a 61 dut msg: 61
108        35 bench msg: g 67 dut msg: 67
109        36 bench msg: a 61 dut msg: 61
110        37 bench msg: i 69 dut msg: 69
111        38 bench msg: n 6e dut msg: 6e
112        39 bench msg:  20 dut msg: 20
113        40 bench msg:  20 dut msg: 20
114        41 bench msg:  20 dut msg: 20
115        42 bench msg:  20 dut msg: 20
116        43 bench msg:  20 dut msg: 20
117        44 bench msg:  20 dut msg: 20
118        45 bench msg:  20 dut msg: 20
119        46 bench msg:  20 dut msg: 20
120        47 bench msg:  20 dut msg: 20
121        48 bench msg:  20 dut msg: 20
122        49 bench msg:  20 dut msg: 20
123        50 bench msg:  20 dut msg: 20
124        51 bench msg:  20 dut msg: 20
125        52 bench msg:  20 dut msg: 20
126        53 bench msg:  20 dut msg: 20
127        54 bench msg:  20 dut msg: 20
128        55 bench msg:  20 dut msg: 20
129        56 bench msg:  20 dut msg: 20
130        57 bench msg:  20 dut msg: 20
131        58 bench msg:  20 dut msg: 20
132        59 bench msg:  20 dut msg: 20
133        60 bench msg:  20 dut msg: 20
134        61 bench msg:  20 dut msg: 20
135        62 bench msg:  20 dut msg: 20
136        63 bench msg:  20 dut msg: 20
137      score =          64/64

```

Program 3 Output Screenshots

```
run encryption program; original message =
We just lost the summer to 141L
LFSR_ptrn = 0x6a, LFSR_init = 0x20, pre_length: 13
i=      0, msg_pad=0x20, lfsr=0100000 msg_crypt w/ parity = 0x00
i=      1, msg_pad=0x20, lfsr=1000001 msg_crypt w/ parity = 0xe1
i=      2, msg_pad=0x20, lfsr=0000011 msg_crypt w/ parity = 0xa3
i=      3, msg_pad=0x20, lfsr=0000111 msg_crypt w/ parity = 0x27
i=      4, msg_pad=0x20, lfsr=0001111 msg_crypt w/ parity = 0xaf
i=      5, msg_pad=0x20, lfsr=0011110 msg_crypt w/ parity = 0xbe
i=      6, msg_pad=0x20, lfsr=0111100 msg_crypt w/ parity = 0x9c
i=      7, msg_pad=0x20, lfsr=1111000 msg_crypt w/ parity = 0xd8
i=      8, msg_pad=0x20, lfsr=1110001 msg_crypt w/ parity = 0xd1
i=      9, msg_pad=0x20, lfsr=1100010 msg_crypt w/ parity = 0x42
i=     10, msg_pad=0x20, lfsr=1000101 msg_crypt w/ parity = 0x65
i=     11, msg_pad=0x20, lfsr=0001011 msg_crypt w/ parity = 0x2b
i=     12, msg_pad=0x20, lfsr=0010110 msg_crypt w/ parity = 0x36
i=     13, msg_pad=0x57, lfsr=0101101 msg_crypt w/ parity = 0xfa
i=     14, msg_pad=0x65, lfsr=1011010 msg_crypt w/ parity = 0x3f
i=     15, msg_pad=0x20, lfsr=0110101 msg_crypt w/ parity = 0x95
i=     16, msg_pad=0x6a, lfsr=1101011 msg_crypt w/ parity = 0x81
i=     17, msg_pad=0x75, lfsr=1010110 msg_crypt w/ parity = 0xa3
i=     18, msg_pad=0x73, lfsr=0101100 msg_crypt w/ parity = 0x5f
i=     19, msg_pad=0x74, lfsr=1011000 msg_crypt w/ parity = 0xac
i=     20, msg_pad=0x20, lfsr=0110000 msg_crypt w/ parity = 0x90
i=     21, msg_pad=0x6c, lfsr=1100001 msg_crypt w/ parity = 0x8d
i=     22, msg_pad=0x6f, lfsr=1000010 msg_crypt w/ parity = 0x2d
i=     23, msg_pad=0x73, lfsr=0000100 msg_crypt w/ parity = 0x77
i=     24, msg_pad=0x74, lfsr=0001000 msg_crypt w/ parity = 0xfc
i=     25, msg_pad=0x20, lfsr=0010001 msg_crypt w/ parity = 0xb1
i=     26, msg_pad=0x74, lfsr=0100010 msg_crypt w/ parity = 0x56
i=     27, msg_pad=0x68, lfsr=1000100 msg_crypt w/ parity = 0xac
i=     28, msg_pad=0x65, lfsr=0001001 msg_crypt w/ parity = 0x6c
i=     29, msg_pad=0x20, lfsr=0010011 msg_crypt w/ parity = 0x33
i=     30, msg_pad=0x73, lfsr=0100111 msg_crypt w/ parity = 0xd4
i=     31, msg_pad=0x75, lfsr=1001110 msg_crypt w/ parity = 0xbb
i=     32, msg_pad=0x6d, lfsr=0011101 msg_crypt w/ parity = 0xf0
```

```

i=      34, msg_pad=0x65, lfsr=11101111 msg_crypt w/ parity = 0x12
i=      35, msg_pad=0x72, lfsr=11011111 msg_crypt w/ parity = 0x1d
i=      36, msg_pad=0x20, lfsr=10111110 msg_crypt w/ parity = 0x7e
i=      37, msg_pad=0x74, lfsr=01111101 msg_crypt w/ parity = 0xc9
i=      38, msg_pad=0x6f, lfsr=11110101 msg_crypt w/ parity = 0x95
i=      39, msg_pad=0x20, lfsr=11101000 msg_crypt w/ parity = 0xd4
i=      40, msg_pad=0x31, lfsr=11010000 msg_crypt w/ parity = 0x59
i=      41, msg_pad=0x34, lfsr=10100001 msg_crypt w/ parity = 0x65
i=      42, msg_pad=0x31, lfsr=01000111 msg_crypt w/ parity = 0x12
i=      43, msg_pad=0x4c, lfsr=10001101 msg_crypt w/ parity = 0x0a
i=      44, msg_pad=0x20, lfsr=00011000 msg_crypt w/ parity = 0xac
i=      45, msg_pad=0x20, lfsr=00110001 msg_crypt w/ parity = 0x39
i=      46, msg_pad=0x20, lfsr=01100111 msg_crypt w/ parity = 0x93
i=      47, msg_pad=0x20, lfsr=11001101 msg_crypt w/ parity = 0xc6
i=      48, msg_pad=0x20, lfsr=10011011 msg_crypt w/ parity = 0xed
i=      49, msg_pad=0x20, lfsr=00110101 msg_crypt w/ parity = 0x3a
i=      50, msg_pad=0x20, lfsr=01101000 msg_crypt w/ parity = 0x14
i=      51, msg_pad=0x20, lfsr=11010001 msg_crypt w/ parity = 0xc9
i=      52, msg_pad=0x20, lfsr=10100111 msg_crypt w/ parity = 0xf3
i=      53, msg_pad=0x20, lfsr=01001101 msg_crypt w/ parity = 0x06
i=      54, msg_pad=0x20, lfsr=10011000 msg_crypt w/ parity = 0x6c
i=      55, msg_pad=0x20, lfsr=00110000 msg_crypt w/ parity = 0xb8
i=      56, msg_pad=0x20, lfsr=01100001 msg_crypt w/ parity = 0x11
i=      57, msg_pad=0x20, lfsr=11000111 msg_crypt w/ parity = 0xc3
i=      58, msg_pad=0x20, lfsr=10001111 msg_crypt w/ parity = 0xe7
i=      59, msg_pad=0x20, lfsr=00011101 msg_crypt w/ parity = 0x2e
i=      60, msg_pad=0x20, lfsr=00111000 msg_crypt w/ parity = 0x3c
i=      61, msg_pad=0x20, lfsr=01110001 msg_crypt w/ parity = 0x99
i=      62, msg_pad=0x20, lfsr=11100101 msg_crypt w/ parity = 0xd2
i=      63, msg_pad=0x20, lfsr=11001011 msg_crypt w/ parity = 0xc5
encrypted string =
a#'/> XQBe+6z? #_,
-w|1V,l3T;pV~I TYe
,9 Fm: Is l8 Cg.< RE

```

```

program 3:
0 bench msg: W 57 dut msg: 57
1 bench msg: e 65 dut msg: 65
2 bench msg: 20 dut msg: 20
3 bench msg: j 6a dut msg: 6a
4 bench msg: u 75 dut msg: 75
5 bench msg: s 73 dut msg: 73
6 bench msg: t 74 dut msg: 74
7 bench msg: 20 dut msg: 20
8 bench msg: l 6c dut msg: 6c
9 bench msg: o 6f dut msg: 6f
10 bench msg: s 73 dut msg: 73
11 bench msg: t 74 dut msg: 74
12 bench msg: 20 dut msg: 20
13 bench msg: t 74 dut msg: 74
14 bench msg: h 68 dut msg: 68
15 bench msg: e 65 dut msg: 65
16 bench msg: 20 dut msg: 20
error successfully flagged
18 bench msg: u 75 dut msg: 75
19 bench msg: m 6d dut msg: 6d
20 bench msg: m 6d dut msg: 6d
21 bench msg: e 65 dut msg: 65
22 bench msg: r 72 dut msg: 72
23 bench msg: 20 dut msg: 20
error successfully flagged
error successfully flagged
26 bench msg: 20 dut msg: 20
27 bench msg: 1 31 dut msg: 31
28 bench msg: 4 34 dut msg: 34
29 bench msg: 1 31 dut msg: 31
30 bench msg: L 4c dut msg: 4c
31 bench msg: 20 dut msg: 20

```


| | | | | |
|----|------------|----|----------|----|
| 37 | bench msg: | 20 | dut msg: | 20 |
| 38 | bench msg: | 20 | dut msg: | 20 |
| 39 | bench msg: | 20 | dut msg: | 20 |
| 40 | bench msg: | 20 | dut msg: | 20 |

error successfully flagged

| | | | | |
|----|------------|----|----------|----|
| 42 | bench msg: | 20 | dut msg: | 20 |
| 43 | bench msg: | 20 | dut msg: | 20 |
| 44 | bench msg: | 20 | dut msg: | 20 |
| 45 | bench msg: | 20 | dut msg: | 20 |
| 46 | bench msg: | 20 | dut msg: | 20 |
| 47 | bench msg: | 20 | dut msg: | 20 |
| 48 | bench msg: | 20 | dut msg: | 20 |
| 49 | bench msg: | 20 | dut msg: | 20 |
| 50 | bench msg: | 20 | dut msg: | 20 |
| 51 | bench msg: | 20 | dut msg: | 20 |
| 52 | bench msg: | 20 | dut msg: | 20 |
| 53 | bench msg: | 20 | dut msg: | 20 |
| 54 | bench msg: | 20 | dut msg: | 20 |
| 55 | bench msg: | 20 | dut msg: | 20 |
| 56 | bench msg: | 20 | dut msg: | 20 |
| 57 | bench msg: | 20 | dut msg: | 20 |
| 58 | bench msg: | 20 | dut msg: | 20 |
| 59 | bench msg: | 20 | dut msg: | 20 |
| 60 | bench msg: | 20 | dut msg: | 20 |
| 61 | bench msg: | 20 | dut msg: | 20 |
| 62 | bench msg: | 20 | dut msg: | 20 |
| 63 | bench msg: | 20 | dut msg: | 20 |

score = 64/64