```
1 C:\Users\haibo\dev\Study\AlgoImage\venv\Scripts\python.exe
    C:/Users/haibo/dev/Study/Cryptho/tp1.py
2 WORD [1, 0, 1, 1, 1, 0, 1, 0]
 3 <module> ['KEY', [0, 1, 1, 0, 1, 0, 1, 1, 0, 0]]
 4 <module> ['WORD', [1, 0, 1, 1, 1, 0, 1, 0]]
 5 encrypt ['IP', [0, 0, 1, 1, 1, 0, 1, 1]]
 6 generate key ['P10', [1, 1, 1, 1, 0, 0, 0, 0, 1, 0]]
7 generate key ['2*LS-1', [1, 1, 1, 0, 1, 0, 0, 1, 0, 0]]
8 generate key ['P8', [0, 1, 0, 0, 1, 1, 0, 0]]
9 encrypt ['KEY1', [0, 1, 1, 0, 1, 0, 1, 1, 0, 0]]
10 generate key ['P10', [1, 1, 1, 1, 0, 0, 0, 0, 1, 0]]
11 generate key ['2*LS-1', [1, 1, 1, 0, 1, 0, 0, 1, 0, 0]]
12 generate key ['2*LS-1', [1, 0, 1, 1, 1, 1, 0, 0, 0, 0]]
13 generate key ['P8', [1, 1, 0, 1, 0, 1, 0, 0]]
14 encrypt ['KEY2', [1, 1, 0, 1, 0, 1, 0, 0]]
15 FK ['SubKEY', [0, 1, 0, 0, 1, 1, 0, 0]]
16 FK ['E/P', [[1, 1, 0, 1], [0, 1, 1, 1]]]
17 FK ['XOR(KEY1 and E/EP)', [[1, 0, 0, 1], [1, 0, 1, 1]]]
18 FK ['sboxResult', [1, 1, 0, 1]]
19 FK ['LeftBloc', [0, 0, 1, 1]]
20 FK ['P4', [1, 1, 0, 1]]
21 FK ['XOR P4', [1, 1, 1, 0]]
22 encrypt ['FK1', [1, 1, 1, 0, 1, 0, 1, 1]]
23 encrypt ['SW', [1, 0, 1, 1, 1, 1, 1, 0]]
24 FK ['SubKEY', [1, 1, 0, 1, 0, 1, 0, 0]]
25 FK ['E/P', [[0, 1, 1, 1], [1, 1, 0, 1]]]
26 FK ['XOR(KEY1 and E/EP)', [[1, 0, 1, 0], [1, 0, 0, 1]]]
27 FK ['sboxResult', [1, 0, 1, 0]]
28 FK ['LeftBloc', [1, 0, 1, 1]]
29 FK ['P4', [0, 0, 1, 1]]
30 FK ['XOR P4', [1, 0, 0, 0]]
31 encrypt ['FK2', [1, 0, 0, 0, 1, 1, 1, 0]]
32 encrypt ['IP-1', [0, 1, 0, 1, 1, 0, 0, 1]]
33 CRYPTED [0, 1, 0, 1, 1, 0, 0, 1]
34 DECRYPTAGE -----
35 decrypt ['IP', [1, 0, 0, 0, 1, 1, 1, 0]]
36 generate key ['P10', [1, 1, 1, 1, 0, 0, 0, 0, 1, 0]]
37 generate key ['2*LS-1', [1, 1, 1, 0, 1, 0, 0, 1, 0, 0]]
38 generate key ['P8', [0, 1, 0, 0, 1, 1, 0, 0]]
39 decrypt ['KE2', [0, 1, 0, 0, 1, 1, 0, 0]]
40 generate key ['P10', [1, 1, 1, 1, 0, 0, 0, 0, 1, 0]]
41 generate key ['2*LS-1', [1, 1, 1, 0, 1, 0, 0, 1, 0, 0]]
42 generate key ['2*LS-1', [1, 0, 1, 1, 1, 1, 0, 0, 0, 0]]
43 generate key ['P8', [1, 1, 0, 1, 0, 1, 0, 0]]
44 decrypt ['KEY2', [1, 1, 0, 1, 0, 1, 0, 0]]
```

```
File - tp1
45 FK ['SubKEY', [1, 1, 0, 1, 0, 1, 0, 0]]
46 FK ['E/P', [[0, 1, 1, 1], [1, 1, 0, 1]]]
47 FK ['XOR(KEY1 and E/EP)', [[1, 0, 1, 0], [1, 0, 0, 1]]]
48 FK ['sboxResult', [1, 0, 1, 0]]
49 FK ['LeftBloc', [1, 0, 0, 0]]
50 FK ['P4', [0, 0, 1, 1]]
51 FK ['XOR P4', [1, 0, 1, 1]]
52 decrypt ['FK1', [1, 0, 1, 1, 1, 1, 1, 0]]
53 decrypt ['SW', [1, 1, 1, 0, 1, 0, 1, 1]]
54 FK ['SubKEY', [0, 1, 0, 0, 1, 1, 0, 0]]
55 FK ['E/P', [[1, 1, 0, 1], [0, 1, 1, 1]]]
56 FK ['XOR(KEY1 and E/EP)', [[1, 0, 0, 1], [1, 0, 1, 1]]]
57 FK ['sboxResult', [1, 1, 0, 1]]
58 FK ['LeftBloc', [1, 1, 1, 0]]
59 FK ['P4', [1, 1, 0, 1]]
60 FK ['XOR P4', [0, 0, 1, 1]]
61 decrypt ['FK1', [0, 0, 1, 1, 1, 0, 1, 1]]
62 decrypt ['IP-1', [1, 0, 1, 1, 1, 0, 1, 0]]
63 DECRYPTED [1, 0, 1, 1, 1, 0, 1, 0]
64
65 Process finished with exit code 0
66
```