main.c

Run

```
87
88  int main() {
89      char subkeys[16][49]; // 16 keys of 48 bits
90      char cipher[65] =
            "11010111001110111100001010111010110010
            11001110111111001010101010";
91      char plaintext[100];
92
93      printf("Generating keys for decryption
            (reverse order)...\n");
94      generateKeys(subkeys, 1); // Reverse order
            for decryption
95
96      decryptDES(cipher, plaintext, subkeys);
97
98      printf("\nDecrypted plaintext: %s\n",
            plaintext);
99
```

Output

Clear

```
Generating keys for decryption (reverse order)...
Using subkeys in reverse order for decryption:
K1 : 000110000001110001011101011101011100011001101101
K2 : 001100110011000011000101110110011010001101101101
K3 : 001001010001101110001011110001110001011111010000
K4 : 100110011100001100010011100101111100100100011111
K5 : 110000101100000111101001011010100100101111110011
K6 : 011011010101010110000010101111011111001010010 1
K7 : 000000100111011001010111000010001011010110111111
K8 : 100001001011101101000100011100111101110011001100
K9 : 001101001111100000100010111100001100011001101101
K10: 011100001000101011010010110111011011001111000000
K11: 110000011001010010001110100001110100011101011110
K12: 011010011010011000101001111111101100100100010011
K13: 110110100010110100000011001010110110111011100011
K14: 000001101110110110100100101011001111010110110101
K15: 010001010110100001011000000110101011110011001110
K16: 000110010100110011010000011100101101111010001100
```

main.c

Run

```c
    char cipher[65] =
        "1101011100111011110000101011101011001
        1100111011111100101010101";
    char plaintext[100];

    printf("Generating keys for decryption
        (reverse order)...\n");
    generateKeys(subkeys, 1); // Reverse order
        for decryption

    decryptDES(cipher, plaintext, subkeys);

    printf("\nDecrypted plaintext: %s\n",
        plaintext);

    return 0;
}
```

Output

Clear

```
K5 : 110000101100000111101001011010100100101111110011
K6 : 011011010101010110000010101111011111001010010 1
K7 : 000000100111011001010111000010001011010110111111
K8 : 100001001011101101000100011100111101110011001100
K9 : 001101001111100000100010111100001100011001101101
K10: 011100001000101011010010110111011011001111000000
K11: 110000011001010010001110100001110100011101011110
K12: 011010011010011000101001111111101100100100010011
K13: 110110100010110100000011001010110110111011100011
K14: 000001101110110110100100101011001111010110110101
K15: 010001010110100001011000000110101011110011001110
K16: 000110010100110011010000011100101101111010001100

Decrypted plaintext: Decryption stub (actual DES logic
    not implemented)


=== Code Execution Successful ===
```