Cryptography System: Rule Encryption

1. Cryptography System Name

The name of this cryptography system is: RuleCipher.

2. Explanation of RuleCipher

RuleCipher is a simple encryption and decryption system that uses a series of binary keys derived from a single secret key. The encryption process applies a series of XOR operations between the plaintext and the binary keys. The result of the last XOR operation produces the ciphertext. To decrypt the ciphertext, the same series of XOR operations are applied in reverse order using the same binary keys.

3. Example of Encryption and Decryption Process

Let's say we have the following:

- Plaintext (A): 'HELLO'
- Secret Key: 'SECRET'

1. Generate binary keys (B1, B2, B3, B4) from the secret key. The binary keys will be of the same length as the plaintext.
2. Encrypt the plaintext:
   - Convert each character in the plaintext to its ASCII value.
   - Perform XOR operation with the binary keys:
   - C = (((A ^ B1) ^ B2) ^ B3) ^ B4

3. Decrypt the ciphertext:
   - Apply the XOR operation in reverse order:

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- A = ((((C ^ B4) ^ B3) ^ B2) ^ B1)

The resulting plaintext after decryption should match the original plaintext.