

ALGORITHM: Message Encryption & Decryption System

1. START

2. MAIN MENU

Display:

1. Generate OTP
2. Encrypt Message (OTP)
3. Decrypt Message (OTP)
4. Caesar Cipher Encrypt
5. Caesar Cipher Decrypt
6. Exit

Input choice

Call respective function

3. GENERATE OTP

Input: message length

FOR i = 0 to length-1  
    otp[i] = random(0, 25)

Display and save OTP

4. ENCRYPT WITH OTP

Input: message, otp

FOR each character in message

    IF alphabet THEN

        char\_value = character - 'A' (or 'a')  
        encrypted = (char\_value + otp[i]) % 26  
        ciphertext[i] = encrypted + 'A' (or 'a')

    ELSE

        ciphertext[i] = character

Display ciphertext

5. DECRYPT WITH OTP

Input: ciphertext, otp

FOR each character in ciphertext

    IF alphabet THEN

        char\_value = character - 'A' (or 'a')  
        decrypted = (char\_value - otp[i] + 26) % 26  
        plaintext[i] = decrypted + 'A' (or 'a')

    ELSE

        plaintext[i] = character

Display plaintext

6. CAESAR ENCRYPT

Input: message, shift\_key

FOR each character in message

    IF alphabet THEN

        char\_value = character - 'A' (or 'a')  
        encrypted = (char\_value + shift\_key) % 26  
        ciphertext[i] = encrypted + 'A' (or 'a')

    ELSE

        ciphertext[i] = character

Display ciphertext

7. CAESAR DECRYPT

Input: ciphertext, shift\_key

FOR each character in ciphertext

    IF alphabet THEN

        char\_value = character - 'A' (or 'a')  
        decrypted = (char\_value - shift\_key + 26) % 26  
        plaintext[i] = decrypted + 'A' (or 'a')

    ELSE

        plaintext[i] = character

Display plaintext

8. END