

```

inv_matrix[1][1] = mod( key_matrix[0][0] * det_inv, MOD);

int vector[2];
for (int i = 0; i < 2; i++) {
    vector[i] = cipher[i] - 'A';
}

for (int i = 0; i < 2; i++) {
    decrypted[i] = mod(inv_matrix[i][0] * vector[0] + inv_matrix[i][1] * vector[1], MOD) + 'A';
}
decrypted[2] = '\0';
}

int main() {
    char message[3], encrypted[3], decrypted[3];
    int key_matrix[2][2];

    printf("Enter 2-letter message: ");
    scanf("%2s", message);

    printf("Enter 2x2 key matrix:\n");
    for (int i = 0; i < 2; i++) {
        for (int j = 0; j < 2; j++) {
            scanf("%d", &key_matrix[i][j]);
        }
    }

    encrypt(message, key_matrix, encrypted);
    printf("Encrypted text: %s\n", encrypted);

    decrypt(encrypted, key_matrix, decrypted);
    printf("Decrypted text: %s\n", decrypted);

    return 0;
}

```