

**EXP NO:3**

**DATE:**

## **RAIL FENCE CIPHER**

**AIM:**

To implement an encryption algorithm using Rail Fence Cipher technique.

**ALGORITHM:**

**Step 1:** Get the plaintext input from the user.

**Step 2:** Prompt the user to enter the number of rails (the key) for the Rail Fence Cipher.

**Step 3:** Preprocess the plaintext by removing any spaces and punctuation, and converting it to uppercase if necessary.

**Step 4:** Construct the rail fence pattern by dividing the plaintext characters into diagonal "rails" based on the key.

**Step 5:** Read off the characters row by row to form the encrypted ciphertext.

**Step 6:** Output the encrypted ciphertext to the user.

**PROGRAM:**

```
#include<stdio.h>
```

```
#include<string.h>
```

```
void encryptMsg(char msg[], int key){
```

```
    int msgLen = strlen(msg), i, j, k = -1, row = 0, col = 0;
```

```
    char railMatrix[key][msgLen];
```

```
    for(i = 0; i < key; ++i)
```

```
        for(j = 0; j < msgLen; ++j)
```

```
            railMatrix[i][j] = '\n';
```

```
    for(i = 0; i < msgLen; ++i){
```

```
        railMatrix[row][col++] = msg[i];
```

```
        if(row == 0 || row == key-1)
            k= k * (-1);
        row = row + k;
    }

    printf("\nEncrypted Message: ");

    for(i = 0; i < key; ++i)
        for(j = 0; j < msgLen; ++j)
            if(railMatrix[i][j] != '\n')
                printf("%c", railMatrix[i][j]);
    }
int main(){
    char msg[] = "This is Thrisha";
    int key = 3;
    printf("Original Message: %s", msg);
    encryptMsg(msg, key);
    return 0;
}
```

### OUTPUT:

```
Original Message: Vinoth210701311
Encrypted Message: Vt03ioh1711n201
```

### RESULT: