Roll No:210701510

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: AYYAPPAN210701510
Encrypted Message: A20PP15AY01YN07A1
```

RESULT: