EXP NO:3 **DATE:**

RAIL FENCE CIPHER

Aim: To implement an encryption algorithm using Rail Fence Cipher technique.

Algorithm:

- Step 1: Declare msg and key, initializing msg with the original message, and set key to the desired rail fence key.
- Step 2: Create railMatrix with dimensions [key][msgLen], initializing elements with newline characters.
- Step 3: Iterate through msg, placing characters in railMatrix based on the Rail Fence Cipher pattern, updating row and col.
- Step 4:Print the encrypted message by traversing railMatrix, excluding newline characters.
- Step 5:Return 0 for successful execution and program termination.

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[] = "I am Vaishnavi";
    int key = 4;
    printf("Original Message: %s", msg);
    encryptMsg(msg, key);
    return 0;
}
```

Output:

```
/tmp/9uWV5gxY6c.o
Original Message: I am Vaishnavi
Encrypted Message: Iav Viaia snmh

=== Code Execution Successful ===
```

Result: