**8.** **Write a C program for Playfair matrix:**

**M F H I/J K**

**U N O P Q**

**Z V W X Y**

**E L A R G**

**D S T B C**

**Encrypt this message: Must see you over**

**CODE:**

**#include <stdio.h>**

**#include <string.h>**

**#define SIZE 5**

**void findPosition(char matrix[SIZE][SIZE], char ch, int \*row, int \*col) {**

**int i, j;**

**for (i = 0; i < SIZE; i++) {**

**for (j = 0; j < SIZE; j++) {**

**if (matrix[i][j] == ch) {**

**\*row = i;**

**\*col = j;**

**return;**

**}**

**}**

**}**

**}**

**void encryptDigraph(char matrix[SIZE][SIZE], char ch1, char ch2) {**

**int row1, col1, row2, col2;**

**findPosition(matrix, ch1, &row1, &col1);**

**findPosition(matrix, ch2, &row2, &col2);**

**if (row1 == row2) {**

**col1 = (col1 + 1) % SIZE;**

**col2 = (col2 + 1) % SIZE;**

**}**

**else if (col1 == col2) {**

**row1 = (row1 + 1) % SIZE;**

**row2 = (row2 + 1) % SIZE;**

**}**

**else {**

**int temp = col1;**

**col1 = col2;**

**col2 = temp;**

**}**

**printf("%c%c", matrix[row1][col1], matrix[row2][col2]);**

**}**

**int main() {**

**char matrix[SIZE][SIZE] = {{'M', 'F', 'H', 'I', 'J'},**

**{'U', 'N', 'O', 'P', 'Q'},**

**{'Z', 'V', 'W', 'X', 'Y'},**

**{'E', 'L', 'A', 'R', 'G'},**

**{'D', 'S', 'T', 'B', 'C'}};**

**char message[100] = "MUSTSEEYOUOVER";**

**int i;**

**if (strlen(message) % 2 != 0) {**

**strcat(message, "X");**

**}**

**for (i = 0; i < strlen(message); i += 2) {**

**encryptDigraph(matrix, message[i], message[i+1]);**

**}**

**printf("\n");**

**return 0;**

**}**

**OUTPUT:**

