

```

1  #include <stdio.h>
2
3  void displayMatrix(int r, int c,int arr[r][c]){
4      for(int i =0; i < r; i++){
5          {
6              if(i == 0){
7                  for(int j = 0; j < c; j ++){
8                      printf("___");
9                  }
10                 printf("_\n");
11             }
12             for(int j = 0; j < c; j++){
13                 if(j == 0){
14                     printf("|");
15                 }
16                 if(arr[i][j] < 0 || arr[i][j] >= 10){
17                     printf("%d",arr[i][j]);
18                 }
19                 else{
20                     printf(" %d",arr[i][j]);
21                 }
22                 printf("|");
23             }
24             printf("\n");
25             for(int j = 0; j < c; j ++){
26                 printf("___");
27             }
28             printf("_\n");
29         }
30     }
31
32 void transpose(int r, int c, int mat1[r][c], int mat2[c][r]){
33     for(int i = 0; i < c; i++){
34         for(int j = 0; j < r; j++){
35             mat2[i][j] = mat1[j][i];
36         }
37     }
38
39 }
40
41 int main(){
42     //first we will input a matrix by the user !
43     int r,c;
44     printf("Enter number of rows : ");
45     scanf("%d",&r);
46     printf("Enter number of columns: ");
47     scanf("%d",&c);
48
49     int mat[r][c];
50     int transposeMat[c][r];
51
52     for(int i = 0; i < r; i++){
53         for(int j = 0; j < c; j++){
54             printf("Enter element {%d:%d} > ",i,j);
55             int ele;
56             scanf("%d",&ele);
57             mat[i][j] = ele;
58         }
59     }
60
61     displayMatrix(r,c,mat);
62     transpose(r,c,mat,transposeMat);
63     displayMatrix(c,r,transposeMat);
64
65
66
67     return 0;

```

