

National Institute of Technology, Patna



EE lab CSL (2601)

Assignment no 10

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Q.1 WAP in C to store numbers in a 3x3 matrix and then display all the numbers in matrix format.

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

```
int main() {
```

```
    int a[10][10], i, j, r, c;
```

```
    printf("Enter the number of rows: ");
```

```
    scanf("%d", &r);
```

```
    printf("Enter the number of column: ");
```

```
    scanf("%d", &c);
```

```
    printf("Enter the first matrix: \n");
```

```
    for(int i=0; i<r; i++){
```

```
        for(int j=0; j<c; j++){
```

```
            scanf("%d", &a[i][j]);
```

```
        }
```

```
    }
```

```
    printf("Given matrix is : \n");
```

```
    for(int i=0; i<r; i++){
```

```
        for(int j=0; j<c; j++){
```

```
            printf("%d\t", a[i][j]);
```

```
        }
```

```
    printf("\n");
```

```
    }
```

```
    return 0;
```

```
}
```

C Untitled-2.c

C matrix_sum.c

[C matrix_display.c](#) [X](#)

Figure 6

Flowchart illustrating the process of identifying and selecting articles for the meta-analysis.

The flowchart shows the following steps:

- Initial search results: 10,000 records identified from database searches.
- Screening based on title and abstract: 8,000 records excluded.
- Full-text screening: 2,000 records screened.
- Inclusion criteria: 1,000 records included.
- Exclusion criteria: 1,000 records excluded.
- Final selection: 1,000 records included.

[illegible]

Code + v ^ x

Q.2. WAP in C to input two matrices of size $m \times n$ and then display the addition of both the matrices.

```
#include <stdio.h>

int main() {
    int a[10][10], b[10][10], j, i, r, c;
    printf("Enter the number of rows: ");
    scanf("%d", &r);
    printf("Enter the number of column: ");
    scanf("%d", &c);
    printf("Enter the first matrix: \n");
    for (int i=0; i<r; i++) {
        for (int j=0; j<c; j++) {
            scanf("%d", &a[i][j]);
        }
    }

    printf("Enter the second matrix: \n");
    for (int i=0; i<r; i++) {
        for (int j=0; j<c; j++) {
            scanf("%d", &b[i][j]);
        }
    }

    printf("Sum of the matrices is: \n");

    for (int i=0; i<r; i++) {
        for (int j=0; j<c; j++) {
            printf("%d\t", a[i][j] + b[i][j]);
        }
        printf("\n");
    }

    return 0;
}
```

```
C: > Users > Sudhanshu Ranjan > C matrix.c > main()
1  #include<stdio.h>
2  int main(){
3      int a[10][10],b[10][10],i,j,r,c;
4      printf("Enter the number of rows : ");
5      scanf("%d",&r);
6      printf("Enter the number of column : ");
7      scanf("%d",&c);
8      printf("Enter the first matrix : \n");
9      for(int i =0; i<r;i++){
10         for(int j=0;j<c;j++){
11             scanf("%d",&a[i][j]);
12         }
13     }
14     printf("Enter the second matrix : \n");
15     for(int i =0; i<r;i++){
16         for(int j=0;j<c;j++){
17             scanf("%d",&b[i][j]);
18         }
19     }
20     printf("Sum of the matrices is :\n");
21
22     for(int i =0; i<r;i++){
23         for(int j=0;j<c;j++){
24             printf("%d\t",a[i][j]+b[i][j]);
25         }
26         printf("\n");
27     }
28     return 0;
29 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

4 6
PS C:\Users\Sudhanshu Ranjan>

Code + ^ x

```

$ gcc 10.c -o 10.exe
$ ./10.exe
Sum of 10 natural numbers is: 55

```

```

$ gcc 10.c -o 10.exe
$ ./10.exe
Sum of 10 natural numbers is: 55

```

Code + v ^ x

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```
PS C:\Users\Sudhanshu Ranjan> cd "c:\Users\Sudhanshu Ranjan\" ; if ($?) { gcc matrix.c -o matrix } ; if ($?) { .\matrix }
```

Enter the number of column : 2

23

Enter the second matrix :

23

Sum of the matrices is :

4	6
---	---

PS C

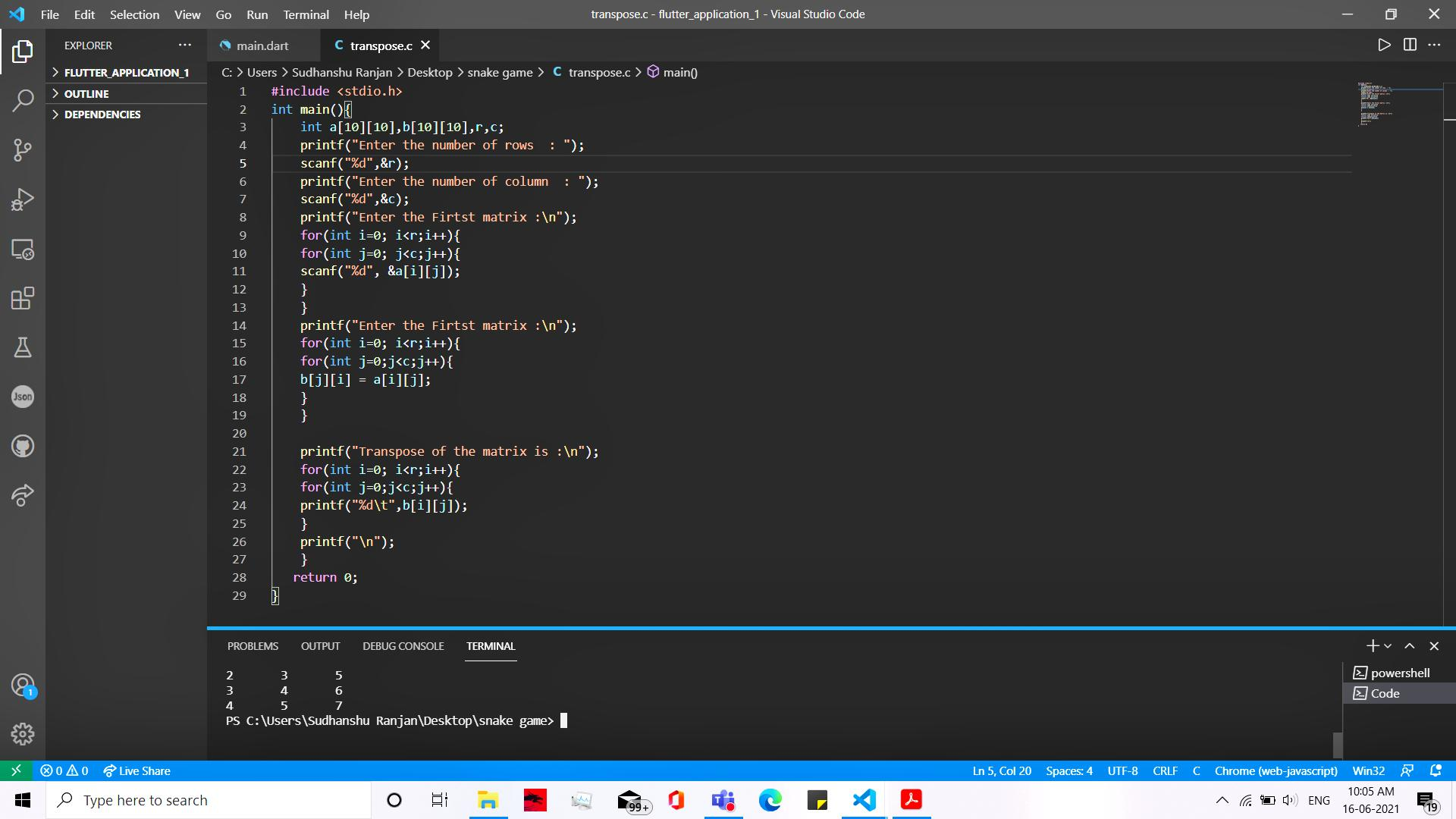
Q.3. WAP in C to input a matrix of size 3×3 . And then find the transpose of matrix and display the result.

```
#include <stdio.h>

int main() {
    int a[10][10], b[10][10], r, c;
    printf("Enter the number of rows: ");
    scanf("%d", &r);
    printf("Enter the number of columns: ");
    scanf("%d", &c);
    printf("Enter the first matrix: \n");
    for (int i=0; i<r; i++) {
        for (int j=0; j<c; j++) {
            scanf("%d", &a[i][j]);
        }
    }

    printf("Enter the first matrix: \n");
    for (int i=0; i<r; i++) {
        for (int j=0; j<c; j++) {
            b[j][i] = a[i][j];
        }
    }

    printf("Transpose of the matrix is: \n");
    for (int i=0; i<r; i++) {
        for (int j=0; j<c; j++) {
            printf("%d\t", b[i][j]);
        }
        printf("\n");
    }
    return 0;
}
```

FileEditSelectionViewGoRunTerminalHelp

main.darttranspose.c

EXPLORER...FLUTTER_APPLICATION_1OUTLINEDEPENDENCIES

C:\> Users > Sudhanshu Ranjan > Desktop > snake game > transpose.c > main()
1#include <stdio.h>
2int main(){
3int a[10][10],b[10][10],r,c;
4printf("Enter the number of rows : ");
5scanf("%d",&r);
6printf("Enter the number of column : ");
7scanf("%d",&c);
8printf("Enter the Firtst matrix :\n");
9for(int i=0; i<r;i++){
10for(int j=0; j<c;j++){
11scanf("%d", &a[i][j]);
12}
13}
14printf("Enter the Firtst matrix :\n");
15for(int i=0; i<r;i++){

PROBLEMSOUTPUTDEBUG CONSOLETERMINAL

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Sudhanshu Ranjan\Desktop\snake game\Flutter 30 days\flutter_application_1> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game\" ; if (\$?) { gcc transp
ose.c -o transpose } ; if (\$?) { .\transpose }
Enter the number of rows : 3
Enter the number of column : 3
Enter the Firtst matrix :
2 3 4
3 4 5
5 6 7
Enter the Firtst matrix :
Transpose of the matrix is :
234
345
456
567
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>

powershellCode

00Live ShareLn 9, Col 27Spaces: 4UTF-8CRLFChrome (web-javascript)Win32

Type here to search

10:55 AM16-06-2021

Q.4. WAP in C to input two matrix of size $m \times n$ and $p \times q$ respectively. And then multiply them and display the result.

```
#include <stdio.h>

int main() {
    int b[10][10], A[10][10], i, j, r, c, r1, c1;
    printf("Enter the number of rows : ");
    scanf("%d", &r);
    printf("Enter the number of column : ");
    scanf("%d", &c);
    printf("Enter the matrix : \n");
    for (i = 0; i < r; i++) {
        for (j = 0; j < c; j++) {
            scanf("%d", &b[i][j]);
        }
    }
    printf("Enter the number of rows : ");
    scanf("%d", &r1);
    printf("Enter the number of column : ");
    scanf("%d", &c1);
    printf("Enter second matrix : \n");
    for (i = 0; i < r1; i++) {
        for (j = 0; j < c1; j++) {
            scanf("%d", &A[i][j]);
        }
    }
}
```



```
if (C != r1) {
```

```
    printf("Multiplication not possible !! \n for multiplication  
    column of first matrix should be equal to row  
    of first");  
}
```

```
if (C == r1) {
```

```
    int mul[r1][C1];
```

```
    for (i = 0 ; i < r1 ; i++) {
```

```
        for (j = 0 ; j < C1 ; j++) {  
            mul[i][j] = 0;
```

```
            for (int k = 0 ; k < C ; k++) {
```

```
                mul[i][j] = mul[i][j] + b[i][k] * A[k][j];
```

```
            }  
        }  
    }
```

```
    printf("Multiplication is : \n");
```

```
    for (int i = 0 ; i < r1 ; i++) {
```

```
        for (int j = 0 ; j < C1 ; j++) {
```

```
            printf("%d\t", mul[i][j]);
```

```
        }
```

```
        printf("\n");
```

```
    }
```

```
    return 0;
```

```
}
```



Getting Started

C Untitled-2.c

C matrix_sum.c

C matrix_display.c



C: > Users > Sudhanshu Ranjan > C matrix_display.c > main()

```
1  #include<stdio.h>
2  int main(){
3      int b[10][10] , A[10][10],i,j,r,c,r1,c1;
4      printf("Enter the number of rows : ");
5      scanf("%d",&r);
6      printf("Enter the number of column : ");
7      scanf("%d",&c);
8      printf("Enter first matrix : \n");
9      for( i =0; i<r;i++){
10         for( j=0;j<c;j++){
11             scanf("%d",&b[i][j]);
12         }
13         printf("Enter the number of rows : ");
14         scanf("%d",&r1);
15         printf("Enter the number of column : ");
16         scanf("%d",&c1);
17         printf("Enter second matrix : \n");
18         for(i =0; i<r1;i++){
19             for( j=0;j<c1;j++){
20                 scanf("%d",&A[i][j]);
21             }
22             if(c!=r1){
23                 printf("Multiplication not possible!! \nFor multiplicatin column of first matrix should be equal to row of first ");
24             }
25             if(c==r1){
26                 int mul[r][c];
27                 for(i = 0; i<r;i++){
28                     for( j = 0; j<c1;j++){
29                         mul[i][j]=0;
30                     }
31                     for(int k=0;k<c;k++){
32                         mul[i][j] = mul[i][j] + b[i][k]*A[k][j];
33                     }
34                 }
35                 printf("Multiplication is :\n");
36                 for(int i =0; i<r;i++){
37                     for(int j=0;j<c1;j++){
38                         printf("%d\t",mul[i][j]);
39                     }
40                     printf("\n");
41                 }
42                 return 0;
43             }
44         }
45     }
```



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Code + v ^ x