

LAB 1

Matrix Multiplication

Code:

```
#include <stdio.h>
void main()
{
    int a[10][10],b[10][10],c[10][10];
    int m,n,p,q,i,j,k;
    printf("\n Enter the order of the matrix A :");
    scanf("%d%d",&m,&n);
    printf("\n Enter the order of the matrix B :");
    scanf("%d%d",&p,&q);
    if(n==p)
    {
        printf("\n Enter the elements of matrix A \n");
        for(i = 0 ; i < m ; i++)
        {
            for(j = 0 ; j < n ; j++)
                scanf("%d",&a[i][j]);
        }

        printf("\n Enter the elements of matrix B \n");
        for(i = 0 ; i < p ; i++)
        {
            for(j = 0 ; j < q ; j++)
                scanf("%d",&b[i][j]);
        }

        for(i = 0 ; i < m ; i++)
        {
            for(j = 0 ; j < q ; j++)
            {
                c[i][j]=0;
                for(k = 0 ; k < n ; k++)
                    c[i][j] += a[i][k] * b[k][j];
            }
        }

        printf("\n MATRIX A \n");
        for(i = 0 ; i < m ; i++)
        {
            for(j = 0 ; j < n ; j++)
            {
                printf(" %d \t", a[i][j]);
            }
            printf("\n");
        }

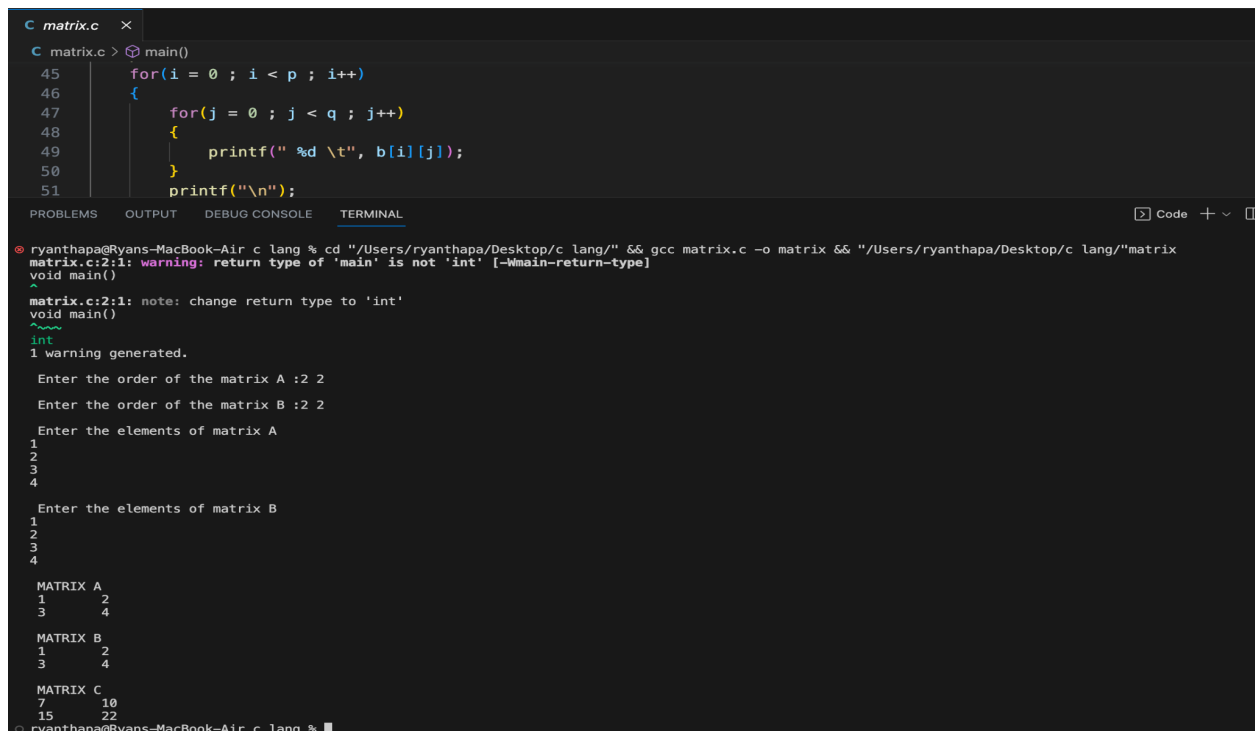
        printf("\n MATRIX B \n");
        for(i = 0 ; i < p ; i++)
        {
```

```

        for(j = 0 ; j < q ; j++)
        {
            printf(" %d \t", b[i][j]);
        }
        printf("\n");
    }
    printf("\n MATRIX C \n");
    for(i = 0 ; i < m ; i++)
    {
        for(j = 0 ; j < q ; j++)
        {
            printf(" %d \t", c[i][j]);
        }
        printf("\n");
    }
    else
        printf("Matrix A & B is not multiplicable");
}

```

Output:



```

C matrix.c x
C matrix.c > main()
45     for(i = 0 ; i < p ; i++)
46     {
47         for(j = 0 ; j < q ; j++)
48         {
49             printf(" %d \t", b[i][j]);
50         }
51         printf("\n");
}

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
ryanthapa@Ryans-MacBook-Air c lang % cd "/Users/ryanthapa/Desktop/c lang/" && gcc matrix.c -o matrix && "/Users/ryanthapa/Desktop/c lang/"matrix
matrix.c:2:1: warning: return type of 'main' is not 'int' [-Wmain-return-type]
void main()
^
matrix.c:2:1: note: change return type to 'int'
void main()
^
int
1 warning generated.

Enter the order of the matrix A :2 2
Enter the order of the matrix B :2 2
Enter the elements of matrix A
1
2
3
4

Enter the elements of matrix B
1
2
3
4

MATRIX A
1 2
3 4

MATRIX B
1 2
3 4

MATRIX C
7 10
15 22
ryanthapa@Ryans-MacBook-Air c lang %

```