Ex(1): write a c program to perform matrix multiplicatio

Aim: TO write a c program to perform matrix multiplication

Algorithm:

*. start.

*. input the number of rows and columns for both matrices.

*. check if the number of columns of the first matrix equals the no of rows of the second matrix.

*. input the elements of both matrices.

*. Multiply the matrices using nested loops.

*. display the resultant matrix.

*. stop.

program:

```
#include <stdio.h>
int main() {
    int A[2][2], B[2][2], C[2][2];
    int i, j, k;
    printf("Enter 4 elements of Matrix A:\n");
    for (i=0; i<2; i++)
        for (j=0; j<2; j++)
            scanf("%d", &A[i][j]);
    printf("Enter 4 elements of Matrix B:\n");
    for (i=0; i<2; i++)
        for (j=0; j<2; j++)
            scanf("%d", &B[i][j]);
    for (i=0; i<2; i++)
        for (j=0; j<2; j++) {
            C[i][j]=0;
            for (k=0; k<2; k++)
                C[i][j]+= A[i][k]* B[k][j];
```

}

```
printf("Result:\n");
for(i=0;i<2;i++){
    for(j=0; j<2; j++)
        printf("%d", c[i][j]);
    printf("\n");
}
Return 0;
}
```

Output:

Enter 4 elements of Matrix A:

1 2 3 4

Enter 4 elements of Matrix B:

5 6 7 8

Result:

19 22

43 50

Result: the C program to perform matrix multiplication was executed successfully.