ASSIGNMENT#3

Q)Write a general program in C which perform matrix multiplication.

1)First initialize two array
2) take the input order(row * column) of both matrix
3) take elements of both array from user
4) check whether multiplication is possible or not.
5) if multiplication is possible then perform it
6)if multiplication is not possible then again goto step# 2. (using goto statement)

A)

```
#include<stdio.h>
main()
{
	int row1, col1, row2,col2;
	start:
	printf("Enter rows and column of first array:\n");
	scanf("%d%d", &row1, &col1);

	int arr1[row1][col1];

	printf("Enter elements of array 1:\n");

	for(int i=0;i<row1;i++)
	{
		for(int j=0;j<col1;j++)
		{
			scanf("%d",&arr1[i][j]);
		}
		printf("\n");
	}

	printf("\nEnter rows and column of first array:\n");
	scanf("%d%d", &row2, &col2);

	int arr2[row2][col2];

	printf("Enter elements of array 2:\n");
	for(int i=0;i<row2;i++)
	{
		for(int j=0;j<col2;j++)
		{
			scanf("%d",&arr2[i][j]);
		}
		printf("\n");
```

```
}



printf("Elements of array 1\n");


for(int i=0;i<row1;i++)
{
	for(int j=0;j<col1;j++)
	{
		printf("%d\t",arr1[i][j]);
	}
	printf("\n");
}

printf("Elements of array 2\n");

for(int i=0;i<row1;i++)
{
	for(int j=0;j<col1;j++)
	{
		printf("%d\t",arr2[i][j]);
	}
	printf("\n");
}






int arr3[col1][row1], temp=0;
if(col1==row2)
{
	printf("\nMatrix multiplication is possible\n");
	for(int i=0;i<row1;i++)
	{
		for(int j=0;j<col2;j++)
		{
			temp=0;
			for(int k=0;k<row1;k++)
			{
				temp = temp + arr1[i][k]*arr2[k][j];
			}
```

```
                        arr3 [i][j] =temp;
                    }
                }
                for(int i = 0; i<row2;i ++)
        {
                for(int j =0 ; j< col1 ;j++)
                {
                    printf("%d \t",arr3[i][j]);

                }
                printf("\n");
        }
        }
        else
        {
                printf("\nMatrix multiplication is not possible\n");
                goto start;
        }
}
```