**C Programming and Data Structures**

**Computer Science and Technology-B**

**Week 7**

7. Your program should take as input: dimension of a square matrix N, two matrices of

size N x N with integer values, and one operator symbol (+, - ,\*). It must perform the

Corresponding operation given below

a) Matrix Addition b) Matrix Subtraction c) Matrix Multiplication

**Program:**

#include<stdio.h>

void main()

{

int i,j,k,n,sum=0,a[10][10],b[10][10],m[10][10];

char s;

printf("Enter the order of matrix:");

scanf("%d",&n);

printf("Enter matrix A elements:\n");

for(i=0;i<n;i++)

{

for(j=0;j<n;j++)

{

printf("Enter element %d,%d:",i+1,j+1);

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

}

}

printf("Enter matrix B elements:\n");

for(i=0;i<n;i++)

{

for(j=0;j<n;j++)

{

printf("Enter element %d,%d:",i+1,j+1);

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

}

}

printf("Enter operation(+,-,\*):");

scanf("%s",&s);

if(s=='+')

{

printf("Matrix Addition:");

for(i=0;i<n;i++)

{

printf("\n");

for(j=0;j<n;j++)

{

printf("%d",a[i][j]+b[i][j]);

}

}

}

else if(s=='-')

{

printf("Matrix Subtraction:");

for(i=0;i<n;i++)

{

printf("\n");

for(j=0;j<n;j++)

{

printf("%d",a[i][j]-b[i][j]);

}

}

}

else if(s=='\*');

{

printf("Matrix Multiplication:\n");

for(i=0;i<n;i++)

{

for(j=0;j<n;j++)

{

for(k=0;k<n;k++)

{

sum=sum+a[i][k]\*b[k][j];

}

m[i][j]=sum;

sum=0;

}

}

for(i=0;i<n;i++)

{

printf("\n");

for(j=0;j<n;j++)

{

printf("%d",m[i][j]);

}

}

}

}

**Output:**

