

Matrix

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#include<stdio.h>
#include<conio.h>

void multiplication (int a[100][100], int b[100][100],
                     int c[100][100], int n);
void addition (int a[100][100], int b[100][100],
                int c[100][100], int n);
void subtraction (int a[100][100], int b[100][100],
                   int c[100][100], int n);
void insertion (int n);
void display (int n);
```

```
int main()
{
    int a[100][100], b[100][100], c[100][100], int n,
        int option;
    printf ("order of matrix\n");
    scanf ("%d\n", &n);
    printf ("enter first matrix:\n");
    insertion (a, n);
    printf ("enter second matrix:\n");
    insertion (b, n);
    printf ("*Menu*");
    printf ("1. multiplication\n");
    printf ("2. addition\n");
    printf ("3. subtraction\n");
    printf ("4. exit\n");
    printf ("enter your option:\n");
    scanf ("%d\n", &option);
    do
    {
        switch (option)
        {
            case 1: multiplication (a, b, c, n);
            break;
```

case 1: addition (a, b, c, n);
 case 2: subtraction (a, b, c, n);
 case 3: multiplication (a, b, c, n);
 case 4: exit (0);

while (option != 4);

void multiplication (int a[100][100], int b[100][100],
 int c[100][100], int n) {

int i, int j, int k;
 for (i=0; i<n; i++) {

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

c[i][j] = 0;

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

c[i][j] += a[i][k] * b[k][j];

void addition (int a[100][100], int b[100][100],
 int c[100][100], int n) {

int i, int j;

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

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

c[i][j] = a[i][j] + b[i][j];

OUTPUT -

addition:

$$\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} + \begin{bmatrix} 2 & 2 & 2 \\ 2 & 2 & 2 \\ 2 & 2 & 2 \end{bmatrix} = \begin{bmatrix} 3 & 3 & 3 \\ 3 & 3 & 3 \\ 3 & 3 & 3 \end{bmatrix}$$

END

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void subtraction (int a[100][100], int b[100][100],
 int c[100][100], int n) {
 int i, int j;
 for (i=0; i<n; i++) {
 for (j=0; j<n; j++) {
 c[i][j] = a[i][j] - b[i][j];
 $\frac{a[i][j]}{3}$ $\frac{b[i][j]}{3}$
 $\frac{c[i][j]}{3}$

Long Long void insertion (int n) {
 int i, int j;
 for (i=0; i<n; i++) {
 for (j=0; j<n; j++) {
 scanf ("%d", &a[i][j]);
 $\frac{a[i][j]}{3}$
 $\frac{a[i][j]}{3}$
 $\frac{a[i][j]}{3}$

void display (int n) {
 int i, int j;
 for (i=0; i<n; i++) {
 for (j=0; j<n; j++) {
 print (a[i][j]);
 $\frac{a[i][j]}{3}$
 $\frac{a[i][j]}{3}$
 $\frac{a[i][j]}{3}$

OUTPUT-

multiplication:

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$$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} * \begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

