

/\* 1. Write a C program to perform Matrix Multiplication \*/

```
#include<stdio.h>
```

```
#include<stdlib.h>
```

```
int main()
```

```
{
```

```
int a[10][10],b[10][10],mul[10][10],r,c,i,j,k;
```

```
system("cls");
```

```
printf("enter the number of row=");
```

```
scanf("%d",&r);
```

```
printf("enter the number of column=");
```

```
scanf("%d",&c);
```

```
printf("enter the first matrix element=\n");
```

```
for(i=0;i<r;i++)
```

```
{
```

```
    for(j=0;j<c;j++)
```

```
    {
```

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

```
    }
```

```
}
```

```
printf("enter the second matrix element=\n");
```

```
for(i=0;i<r;i++)
```

```
{
```

```
    for(j=0;j<c;j++)
```

```
    {
```

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

```
    }
```

```
}
```

```
printf("multiply of the matrix=\n");
```

```
for(i=0;i<r;i++)
```

```
{  
    for(j=0;j<c;j++)  
    {  
        mul[i][j]=0;  
        for(k=0;k<c;k++)  
        {  
            mul[i][j]+=a[i][k]*b[k][j];  
        }  
    }  
}  
for(i=0;i<r;i++)  
{  
    for(j=0;j<c;j++)  
    {  
        printf("%d\t",mul[i][j]);  
    }  
    printf("\n");  
}  
return 0;  
}
```

```
C:\Users\Sumanth\Desktop\Data Structure Lab SI-A\pgm-1 matrix multiplication.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globale)
Project Classes Debug pgm-1 matrix multiplication.cpp
1 /* 1. Write a C program to perform Matrix Multiplication */
2 #include<stdio.h>
3 #include<stdlib.h>
4 int main()
5 {
6     int a[10][10],b[10][10],mul[10][10],r,c,i,j,k;
7     system("cls");
8     printf("enter the number of rows=");
9     scanf("%d",&r);
10    printf("enter the number of columns=");
11    scanf("%d",&c);
12    printf("enter the first matrix element\n");
13    for(i=0;i<r;i++)
14    {
15        for(j=0;j<c;j++)
16        {
17            scanf("%d",&a[i][j]);
18        }
19    }
20    printf("enter the second matrix element\n");
21    for(i=0;i<r;i++)
22    {
23        for(j=0;j<c;j++)
24        {
25            scanf("%d",&b[i][j]);
26        }
27    }
28    printf("multiply of the matrix=\n");
29    for(i=0;i<r;i++)
30    {
31        for(j=0;j<c;j++)
32        {
33            mul[i][j]=0;
34            for(k=0;k<c;k++)
35            {
36                .....
37            }
38        }
39    }
40    }
41    }
42    }
43    }
44    }
45    }
46    }
47    }
48    }
49    }
50    }
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91    }
92    }
93    }
94    }
95    }
96    }
97    }
98    }
99    }
100   }
```

```
C:\Users\Sumanth\Desktop\Data Structure Lab SI-A\pgm-1 matrix multiplication.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globale)
Project Classes Debug pgm-1 matrix multiplication.cpp
12 printf("enter the first matrix element\n");
13 for(i=0;i<r;i++)
14 {
15     for(j=0;j<c;j++)
16     {
17         scanf("%d",&a[i][j]);
18     }
19 }
20 printf("enter the second matrix element\n");
21 for(i=0;i<r;i++)
22 {
23     for(j=0;j<c;j++)
24     {
25         scanf("%d",&b[i][j]);
26     }
27 }
28 printf("multiply of the matrix=\n");
29 for(i=0;i<r;i++)
30 {
31     for(j=0;j<c;j++)
32     {
33         mul[i][j]=0;
34         for(k=0;k<c;k++)
35         {
36             mul[i][j]+=a[i][k]*b[k][j];
37         }
38     }
39 }
40 }
41 }
42 }
43 }
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45 }
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89 }
90 }
91 }
92 }
93 }
94 }
95 }
96 }
97 }
98 }
99 }
100 }
```

```
C:\Users\Sumanth\Desktop\ID x + v
enter the number of row=3
enter the number of column=3
enter the first matrix element=
6
5
8
9
6
3
7
4
1
enter the second matrix element=
1
2
3
6
5
4
7
8
9
multiply of the matrix=
92 101 110
66 72 78
38 42 46
-----
Process exited after 38.08 seconds with return value 0
Press any key to continue . . .
```