

/* 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 printing result
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
```

```

printf("%d\t",mul[i][j]);
}
printf("\n");
}
return 0;
}

```

The screenshot shows the Dev-C++ IDE with a C program for matrix multiplication. The code is as follows:

```

1  /* 1. Write a C program to perform Matrix Multiplication */
2  #include<stdio.h>
3  #include<stdlib.h>
4  int main(){
5  int a[10][10],b[10][10],mul[10][10],r,c,i,j,k;
6  system("cls");
7  printf("enter the number of row=");
8  scanf("%d",&r);
9  printf("enter the number of column=");
10 scanf("%d",&c);
11 printf("enter the first matrix element=\n");
12 for(i=0;i<r;i++)
13 {
14     for(j=0;j<c;j++)
15     {
16         scanf("%d",&a[i][j]);
17     }
18 }
19 printf("enter the second matrix element=\n");
20 for(i=0;i<r;i++)
21 {
22     for(j=0;j<c;j++)
23     {
24         scanf("%d",&b[i][j]);
25     }
26 }
27 printf("multiply of the matrix=\n");

```

The status bar at the bottom indicates the file is 'matrix multiplication.c', it has 50 lines and a length of 991 characters. The system tray shows a temperature of 87°F and the date 19-09-2022.

The screenshot shows the continuation of the C program in the Dev-C++ IDE. The code is as follows:

```

24 scanf("%d",&b[i][j]);
25 }
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 //for printing result
41 for(i=0;i<r;i++)
42 {
43     for(j=0;j<c;j++)
44     {
45         printf("%d\t",mul[i][j]);
46     }
47     printf("\n");
48 }
49 return 0;
50 }

```

The status bar at the bottom indicates the file is 'matrix multiplication.c', it has 50 lines and a length of 991 characters. The system tray shows a temperature of 87°F and the date 19-09-2022.

```
D:\data structures lab\matrix multipliaion.exe
enter the number of row=2
enter the number of column=2
enter the first matrix element=
1
1
1
1
enter the second matrix element=
2
3
2
3
multiply of the matrix=
1      6
4      6
-----
Process exited after 17.17 seconds with return value 0
Press any key to continue . . .
```