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1 #include <stdio.h>
2
3 int main()
4 {
5     int a[10][10], b[10][10], result[10][10], r1, c1, r2, c2, i, j, k;
6
7     printf("Enter rows and column for first matrix: ");
8     scanf("%d %d", &r1, &c1);
9
10    printf("Enter rows and column for second matrix: ");
11    scanf("%d %d",&r2, &c2);
12
13    // Column of first matrix should be equal to column of second matrix and
14    while (c1 != r2)
15    {
16        printf("Error! column of first matrix not equal to row of
second.\n\n");
17        printf("Enter rows and column for first matrix: ");
18        scanf("%d %d", &r1, &c1);
19        printf("Enter rows and column for second matrix: ");
20        scanf("%d %d",&r2, &c2);
21    }
22
23    // Storing elements of first matrix.
24    printf("\nEnter elements of matrix 1:\n");
25    for(i=0; i<r1; ++i)
26        for(j=0; j<c1; ++j)
27        {
28            printf("Enter elements a%d%d: ",i+1, j+1);
29            scanf("%d", &a[i][j]);
30        }
31
32    // Storing elements of second matrix.
33    printf("\nEnter elements of matrix 2:\n");
34    for(i=0; i<r2; ++i)
35        for(j=0; j<c2; ++j)
36        {
37            printf("Enter elements b%d%d: ",i+1, j+1);
38            scanf("%d",&b[i][j]);
39        }
40
41    // Initializing all elements of result matrix to 0
42    for(i=0; i<r1; ++i)
43        for(j=0; j<c2; ++j)
44        {
45            result[i][j] = 0;
46        }
47
48    // Multiplying matrices a and b and
49    // storing result in result matrix
50    for(i=0; i<r1; ++i)
51        for(j=0; j<c2; ++j)
52            for(k=0; k<c1; ++k)
53            {
54                result[i][j]+=a[i][k]*b[k][j];
55            }
56
57    // Displaying the result
58    printf("\nOutput Matrix:\n");
59    for(i=0; i<r1; ++i)

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60         for(j=0; j<c2; ++j)
61         {
62             printf("%d ", result[i][j]);
63             if(j == c2-1)
64                 printf("\n\n");
65         }
66     return 0;
67 }
```