Week-10 Program-05

Due on 2020-04-09, 23:59 IST

Write a C code to check if a 3 x 3 matrix is invertible. A matrix is not invertible if its determinant is 0.

Sample Test Cases

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 5 6 7 8 9 1 2 3</td>
<td>The given matrix is not invertible</td>
</tr>
<tr>
<td>1 2 3 0 1 4 5 6 0</td>
<td>The given matrix is invertible</td>
</tr>
</tbody>
</table>
Test Case 3

The given matrix is not invertible

Test Case 4

The given matrix is invertible

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Sample solutions (Provided by instructor)

```c
#include<stdio.h>

int main()
{
    int a[3][3], i, j;
    long determinant;

    // 9 elements of matrix is taken as input from test data
    for(i = 0; i < 3; i++)
        for(j = 0; j < 3; j++)
            scanf("%d", &a[i][j]);

    /*Use the printf statements as:
     * printf(The given matrix is not invertible);
     * printf(The given matrix is invertible);
     */

    determinant = a[0][0] * ((a[1][1]*a[2][2]) - (a[2][1]*a[1][2])) -a[0][1]*
        (a[1][2] - a[2][0] * a[1][1]) + a[0][2] * (a[1][0] * a[2][1] - a[2][0])

    if (determinant == 0)
        printf("The given matrix is not invertible");
    else
        printf("The given matrix is invertible");
    return 0;
}
```