X

(https://swayam.gov.in) (https://swayam.gov.in/nc_details/NPTEL)

200801199@rajalakshmi.edu.in

NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » Problem Solving Through Programming In C (course)

If already registered, click to check your payment status

Course outline

- How does an NPTEL online course work? ()
- Week 0 : ()
- Week 1 ()
- Week 2 ()
- Week 3 ()
- Week 4 ()
- Week 5 ()
- Week 6 ()
- Week 7 ()

Week 10 : Programming Assignment 02

Due on 2023-10-05, 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

	Input	Output
Test Case 1	4 5 6 7 8 9 1 2 3	The given matrix is not invertible
Test Case 2	1 2 3 0 1 4 5 6 0	The given matrix is invertible

Week 8 ()
Week 9 ()
Week 10 ()
Week 11 ()
Week 12 ()
DOWNLOAD VIDEOS ()
Books ()
Text Transcripts ()
Problem Solving Session - July 2023 ()

Test Case 3	1 2 3 4 5 6 7 8 9	The given matrix is not invertible
Test Case 4	1 0 5 2 1 6 3 4 0	The given matrix is invertible

The due date for submitting this assignment has passed.

Assignment submitted on 2023-10-05, 21:40 IST

Your last recorded submission was :

```
#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
   * a[2][2] - a[2][0] * a[1][2]) + 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;
}
```

Sample solutions (Provided by instructor)

```
#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
```

```
    * a[2][2] - a[2][0] * a[1][2]) + 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;
}
```