

JAVA ASSINGMENT

QUESTION 2:--

Write a program that, given a square matrix of odd dimensions, prints all elements of the matrix, starting from the center, in the order of a spiral as shown in the examples below. Matrix Size: 5X5

Sample input

5

9 5 4 3 2

3 12 6 4 15

11 1 19 5 4

6 9 7 3 5

4 1 14 4 8

PROGRAM CODE:--

// Java Code for Print matrix in antispiral form

import java.util.*;

class Matrix5{

public static void antiSpiralTraversal(int m, int n,int a[][])

{

int i, k = 0, l = 0;

/* k - starting row index

m - ending row index

l - starting column index

n - ending column index

i - iterator */

```
Stack<Integer> stk=new Stack<Integer>();
```

```
while (k <= m && l <= n)
```

```
{
```

```
    /* Print the first row from the remaining  
    rows */
```

```
    for (i = l; i <= n; ++i)
```

```
        stk.push(a[k][i]);
```

```
    k++;
```

```
    /* Print the last column from the remaining  
    columns */
```

```
    for (i = k; i <= m; ++i)
```

```
        stk.push(a[i][n]);
```

```
    n--;
```

```
    /* Print the last row from the remaining  
    rows */
```

```
    if ( k <= m)
```

```
{
```

```

        for (i = n; i >= l; --i)
            stk.push(a[m][i]);
        m--;
    }

    /* Print the first column from the remaining
    columns */
    if (l <= n)
    {
        for (i = m; i >= k; --i)
            stk.push(a[i][l]);
        l++;
    }
}

while (!stk.empty())
{
    System.out.print(stk.peek() + " ");
    stk.pop();
}
}

```

```

/* Driver program to test above function */
public static void main(String[] args)

```

```
{  
    int mat[][] =  
        {  
            {9, 5, 4, 3, 2},  
            {3,12,6,4,15},  
            {11,1,19,5,4},  
            {6,9,7,3,5},  
            {4,1,14,4,8}  
        };  
  
    antiSpiralTraversal(mat.length - 1, mat[0].length - 1,  
  
    mat);  
}  
}
```

OUTPUT:--

```
Command Prompt
Microsoft Windows [Version 10.0.22000.856]
(c) Microsoft Corporation. All rights reserved.

C:\Users\indra>cd c:\

c:\>cd "Java Program\jdk1.8.0_51\bin"

c:\Java Program\jdk1.8.0_51\bin>javac Matrix5.java

c:\Java Program\jdk1.8.0_51\bin>java Matrix5
19 1 9 7 3 5 4 6 12 3 11 6 4 1 14 4 8 5 4 15 2 3 4 5 9
c:\Java Program\jdk1.8.0_51\bin>_
```

BANDI.LAKSHMI INDRASENA REDDY

9921004070