BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, K.K.BIRLA GOA CAMPUS
First Semester 2020-2021

Course Title : Advanced Operating System	**Course No : CS G623**
Component : Lab Assignment No. 1	**Topic: Multithreading**
Weightage : 10%	**Max Marks : 10**
Date : 24/11/2020	**Submission Due Date : 28/11/2020 before 5 p.m.**

Question. Write a C program that performs the following task.

1. Take 'n' and 'm' as input from user where n and m are rows and columns of a 2D matrix (0 < n <= 100 and 0 < m <= 100). Read elements of the matrix. You may use sample_file1.txt for input. Data must be used from a file and not entered by user.

2. Create n threads such that the i^{th} thread sorts the i^{th} row of the matrix using any sorting algorithm. **Threads should be compulsorily executed in parallel.**

3. Create a median array which stores median of the i^{th} row in its i^{th} element

4. Print the final sorted matrix and the median array as final answer.

Input format :
1^{st} line contains a single integer n representing number of rows
2^{nd} line contains a single integer m representing number of columns
Following n lines contains m space separated integers (each line representing elements of a row)

Output format :
Print Row sorted matrix (size n*m)
Print Median array (size n)

Sample input
```
3
4
3 6 7 5
3 5 6 2
9 1 2 7
```

Sample output
```
Row sorted matrix
3 5 6 7
2 3 5 6
1 2 7 9

Median array
5.5 4.0 4.5
```

NOTE: Follow the naming convention <IDNO_AOS_Lab1.c> . Submitt your .c file via the link provided on Quants course webpage.