Roll No.: 21BCS007 **LAB ASSESSMENT:** #11 **DATE:** 14/11/2023

NAME: Md. Ibrahim Akhtar

PROBLEM 1:

Things Learned:

1. .

Problems Faced:

1. .

PROBLEM 2:

Things Learned:

1. Exception Handling in Java. <Link> <Link> <Link>
2. try-catch block in Java and implementing them.

Problems Faced:

1. Implementing a modified Multithreaded Merge Sort Class to handle array out of bounds exception using try and catch blocks.

PROBLEM 3:

Things Learned:

1. Learnt more about exceptions in Java.
2. Implemented the program to catch InterruptedException thrown by the join function.

Problems Faced:

1. In implementing the program to catch InterruptedException thrown by the join function.
2. Had trouble in running the code.

Solutions of Questions in the PDF:

1. .
2. In your report, describe your multi-threaded merge sort in words. How many threads are you spawning? How are you dividing up the work among them? What will the Java scheduler do in your program? It might be helpful to read about the join function (https://www.geeksforgeeks.org/joining-threads-in-java/).

   - The multi-threaded merge sort in the provided Java program employs the Fork-Join framework to parallelize sorting. The array is recursively divided into subarrays, each assigned to a separate thread. Fork-Join dynamically schedules tasks across threads, and the Java scheduler manages their execution.

- The program includes interrupt handling during sorting. The goal is to efficiently utilize CPU cores, potentially enhancing sorting performance.

3. .
4. .