Object Oriented Programming with JAVA
Lab -7 IO and Multi-threading

Core

1 Write a Java program as per the following description, to demonstrate the concept of thread priority.

- MyThread class :
  - Create a class MyThread which extends Thread class.
  - It's run method prints number 1 to 5 with that thread name and priority.
- MyThreadDemo class :
  - Create a class MyThreadDemo.
  - In the main method create two objects of MyThread class.
  - Set priority of first thread object to MIN value and second thread object to MAX value.
  - Start both the threads.
  - Print numbers 1 to 50 in main method with that thread name and its priority.

2 Write a program to demonstrate the use of synchronization

- Create a class Show having display method to display thread name and its priority in square braces (i.e. [Thread-1 with priority 8].
- Create a class Thread1 which extends Thread class and share an object of Show class.
- Create a DemoSynchronization class having main method to create three threads to demonstrate the synchronization. From main, call join method on objects of Thread1 class.

3 Write an application that copies one character file to a second character file. The source file is a first command line argument and the destination file is the second command line argument.

4 Write an application that reads a file provided in a command line argument using character stream and counts number of words in that file. (Hint: Use the FileReader to read file character by character. Check the character that you have read is space or not. If it is a space increment the counter kept for words. Do not increment it again if the space if followed by other spaces.)

Plus

1 Write a complete multi-threaded program to meet following requirements:

- Threads of two types(Consumer and Producer) are to be instantiated in the method main.
- A shared buffer can store only one integer information at a time.
- The information produced is to be consumed by appropriate consumer.
- Producer thread produces 5 information and consumer thread consumes those 5 information