

Java and Network Programming Lab Assignment #3

Assignment on File Management and Thread

1. Write a program to display the file size of a text file then read first n bytes of the file using `FileInputStream` class of byte streaming. Repeat the problem with `FileReader` class of character streaming.
2. Write a program to create a text file (`File3.txt`) that contains the first half of the text of file `File1.txt` and last half of the text of `File2.txt` using `FileOutputStream` class of byte streaming. Repeat the problem with `FileWriter` class of character streaming.
3. Write a Java program to find the different properties of a text file for examples, path, parent directory, filesize, last modified etc. using the methods of `File` class. The program also displays first n bytes of the file.
4. Write a program to write 50 random numbers between 100 and 150 to a file using `RandomAccessFile` class and then randomly display and modify any number.
5. Write a Java program that creates three tasks to run them simultaneously. The task are as follows:
 - a. The first task prints the letter 'A' to 'Z' and 'a' to 'z'
 - b. The second task prints the symbol '@' 100 times
 - c. The third task prints the integers 1 to 100.
6. Write a Java program to find all prime numbers of a given lower and upper limit using multiple threads.
7. Write Java program to observe the execution of multiple threads with and without the priority.
8. Write a Java program that create a class `Printer` with a method `printMessage` (String message) that prints each character with a small delay. You have to create multiple threads that call `printMessage()` simultaneously with different messages. Your task is to use a synchronized block to ensure only one thread prints at a time.