SKIP2103 Advanced Programming
Exercises – Threads

1. Write a program that can use a thread to perform a countdown. The program should initialize a starting value for the counter and start a countdown from that value. The duration between each decrement of the counter must be at least one second. Once the counter reaches zero, the main method should print "Countdown complete!" and terminate.

2. Create two threads: Thread A and Thread B. Thread A should print numbers from 1 to 5 with a delay of 1 second between each number. Thread B should print numbers from 6 to 10 with a delay of 1 second between each number. Ensure that Thread B starts execution only after Thread A completes.

3. Write a Java program that has two threads performing different tasks. The first thread should sum even numbers from 1 to 10, while the second thread should sum odd numbers from 1 to 10. At the end the main method should total both sum & display the total sum.

4. Write a Java program that performs the sum of two 3 by 3 matrices using multiple threads. Split the matrix addition task among three threads, where each thread calculates the addition of a different row of the two matrices. At the end, the main method displays the resultant matrix.

5. Write a Java program that demonstrate threads coordination where one thread is the producer and another thread is the consumer. For example, a producer deposit in account and consumer withdraw from the account.