Practice Lab Assignment 5

For this Practice Lab Assignment, you will write programs based on the concept of Multithreading.

Instructions

- There are 4 questions in this assignment.
- Do not share your work with anyone.
- Discuss with TA in case of any further clarifications.

Due Date: Submit your codes on BB.

Submission Guidelines

1. You will submit (upload) this assignment in Blackboard. Email submissions will not be accepted.
2. Upload the pdf file containing Question Number, Code and Screenshot of the Output.
3. Name the pdf file as "John_Doe_2010110999" in case your name is "John Doe" and your roll number is "2010110999".

Questions

1. Define two threads which produce an output as follows:
   Producer: This thread will generate any random number, say *N*.
   Consumer: This thread will write *N* in words. For example, if *N* = 2468, then it will print Two Thousand Four Hundred Sixty Eight.
   Write a multithreaded program so that if the producer thread produces *N*, then Consumer thread will print *N* in words.

2. Write a multithreaded program running with a minimum number of threads such that for some integer *n* given by the programmer, first it will print *n* natural numbers, followed by first *n* even number, and finally the first *n* odd numbers.

3. Using a multithreaded program define a thread which will print *n* natural numbers 1, 2, 3, …., *n* for any integer *n* = 1, 2, 3, …, 26. Define another thread which will print any letter A, B, C, ……, Z. Use the two threads write a program to print a sequence of output as follows:

1 A
1
2 B
1
2
3 C
1
2
3
4 D
….
…..
24
25 Y
1
2
3
…
…
25
26 Z

4. Read any three long integers, say *x, y*, and *z* from a user. There will be three threads: *T1*, *T2*, and *Main* thread. The three threads will run concurrently so that *Main* thread will print *"Sleeping for x milliseconds"* and then will sleep for *x* milliseconds. The other two threads will do a similar task for y and z as input. The three threads should run in the order: *Main thread, T1, T2*.