MultiThreading in Java

1. Create a program to understand when InterruptedException occurs.
   User is given a question and he has 20 seconds to answer but user can interrupt it by answering before the stipulated time.

2. There are two threads one generates odd numbers between 2 and 30 and the other generates even numbers between 2 and 30.
   The main thread creates and executes these two threads independently but has set of finishing statements.
   " Generated Odd Numbers"
   "Generated even Numbers"
   "End of the program"
   Which are executed only after the two threads finish their execution.

   Create an application for the above.

3 Create an application that allows the user to create login accounts and see details of all the accounts.

Accounts are stored in a Map<username,UserAccount>

UserAccount has the following information.

Username, password, email, modileNo,address

User is allowed to add an account only if that username does not exists.

Create three methods for the above:

addAccount(……………..)

RVK……………………….

display()

Take care of Concurrency issues and RaceConditions in the case.

Any client thread not be able to see the details,while another is adding the account.

4   There are two threads one thread is a producer thread that addStock and another updateStock is a consumer thread that reduces stock of an item when user purchases it.

addStock thread adds the stock as soon it gets a notification from updateStock when stock is 0.

Create an application implement the above.

(hint : using wait() and notify())

5

Create an application that has two threads one generates a random number between 1 and 10 and another calculates the factorial of that number.

Use the concept of interthread communication where a FactorialThread waits till the number is generated and notifies when done to generate another number.