Return your answers in Tuubi before deadline!

In Object-Oriented Programming course 2015 one subject is Design Patterns. In address http://users.metropolia.fi/~pasitr/2016-2017/TI00AA50-3010/tt/09/ratkaisut/ is solutions of exercise http://users.metropolia.fi/~pasitr/2016-2017/TI00AA50-3010/tt/09/tt09-java.pdf. Solutions have been programmed in Java. You have to program tasks in C++ if possible.

Tasks

1. **Factory pattern**. Implement this task 1 with C++ if possible. Codes in Java is in ad-dress https://www.tutorialspoint.com/design_pattern/factory_pattern.htm .

   Example 1: http://codereview.stackexchange.com/questions/56924/factory-design-pattern-with-music-classes

2. **Abstract factory pattern**. Implement task 2 with C++ if possible. Codes in Java is in address https://www.tutorialspoint.com/design_pattern/abstract_factory_pattern.htm .

   Example 2: https://en.wikibooks.org/wiki/C%2B%2B_Programming/Code/Design_Patterns#Abstract_Factory

3. **Singleton pattern**. Implement this task 3 with C++ if possible. Codes in Java is in address https://www.tutorialspoint.com/design_pattern/singleton_pattern.htm .

   Example 3: https://sourcemaking.com/design_patterns/singleton/cpp/1