Observer, Singleton and Abstract Factory

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Exercice 1

We now add the capability to follow what happens during battles. Using the Observer pattern :

1. Complete the architecture in the goal 1)to display the number of dead soldiers during the battle;2) to display the names of dead soldiers and so to send a mail of apologies to their friends. The display must be updated which time a soldier is killed.

2. Implement this new design element and add unitary test.

Exercice 2

Using the design pattern Singleton:

1. Define the fact that each observer can have only one instance.

Exercice 3

You now want to shopisticate your application and to create families of soldiers which are historically consistent. For a given family, the equipment must be according to a time. For example, we can consider the Medieval family which consists in Soldiers with swords,spear and armor but no laser sabre nor bionics weapons. So we could consider that we have now three families: Medieval, MundialWar and FictionScience.
Using the Abstract Factory pattern:

1. Complete the architecture to be able to create these families.

2. Implement this architecture element in adding unitary tests.