Exercises

1 – In the JAVA Core training, you have modeled the classes to the Rockers system. But we want our employees could register themselves. When a new employee register itself, the system should throw an e-mail for the manager.

2 – Joana Maria Brega have a TV show where she teaches how to make a cake. She is not so good in what she does. Following will be described an example of a so complex cake called Brigadeiro’s Cake (“Chocolate truffle is different of ‘Brigadeiro’). What could be more “Brega” than it? This cake receipt yields 1kg, is valid for 30 days and is constituted by better. The better should go to the oven in 350 Fahrenheit for 35 minutes. The better is formed by the ingredients:

* 2 tea-cup of wheat flour;
* 1 tea-cup of milk;
* 5 eggs;
* 1 tea-cup of sugar;
* 1 teaspoon of baking powder;
* 1 tea-cup of chocolate powder (not chocolate milk – this, yes, would be so “Brega”!)

The Brigadeiro’s Cake is also formed by a delicious filling. This filling should go to the oven by 15 minutes and is formed by the ingredients:

* ½ tea-cup of chocolate powder
* 2 soup-poon of butter
* 2 cans of condensed milk

The Brigadeiro’s Cake is also formed by a cake cover. “Humm… cake cover!”

The cake cover should go to the oven for 15 minutes too and is formed by:

* ½ tea-cup of chocolate sprinkles;
* 1 tea-cup of chocolate powder;
* 2 soup-poon of butter;
* 2 cans of sweet condensed milk (borden milk);

To do the cake, Joana separate in her hands the egg white from the yolk. After, she knock the egg white on the electric mixer without stop until the stay whipped. Without stop to knock, Joana put the yolks one after other, the sugar and the milk. By the end, incorporate to the better the wheat floor after sift it and the backing powder. Dump everything in a cake pan and bake for 40 minutes. After, let it cool and cut in the middle.

To make the filling, put in a pan the borden milk, the butter and chocolate powder and mix them until to burble. Put their between the halves of the cake.

To make the cake cover, put all ingredients in another pan and mix the cooking until to burble too. Put it upon the cake.

Ok. Now that you know how to make a truth Brigadeiro’s Cake, you should to know that Globulos Television want to demit Joana Maria Brega, because her salary is very high. Before to do it, Globulus Television hire you to program a robot that should be albe to make a cake.

Consider that we have a class that maps a set of bot instructions to the robot. You should encapsulate this business rules and create a JAVA program that contains this logic. You SHOULD use AT LEAST one Interface Design Pattern to implement this program.

3 – Yesterday, Wipro has closed a contract with Caixa Econômica Federal – a Brazilian Government Bank – to develop a system for its new credit line – the pawn. This system will call PawnBox and, for a while, this system should be able to accept the pawn of gold and silver only, and the objects necklace and ring. But in future, this new credit line could accept another type of values and objects. The objects could or not have precious stones, which will increase the value of the credit paper. Furhter more, the age of the object, if have historical value, and if have or not documentation will affect the price, increasing or decreasing it.

Precious stone: diamond (+20%), sapphire (18%), ruby (+15%), emerald (+21%)

Age: for each 100 years old the value increases 10%.

Historical value: increases the value in 30%.