

Lab 12. Observer pattern

Problem 2

Oil companies are interested by the price of the oil on the stock exchange.

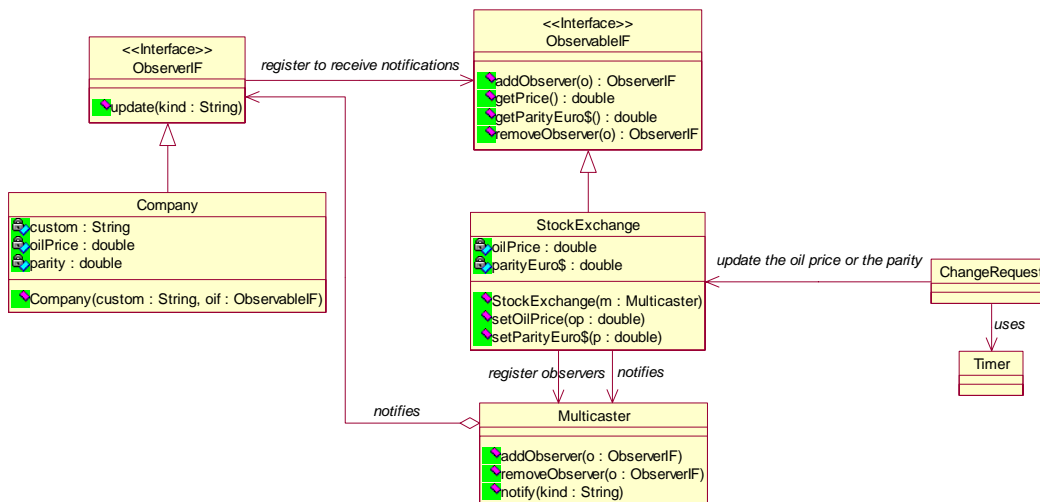
The companies express their price of oil in one of two customs: euro or dollar. Some companies have the price of oil in euro, others in dollars.

The price of oil of a company is modified in two cases:

- when the price of oil moves on the stock exchange. In this case all the companies have to change their prices and these are equals with the price from the stock exchange;
- when the parity euro/dollar changes. If the parity raises, all the companies that have the prices of oil in € will raise it and the others companies will decrease their price of oil. Conversely, if the parity become smaller than the previous parity, all the companies that have the price of oil in \$, will raise it and the others companies will decrease their price of oil.

Requirements:

- A. Write a program that keeps track the prices of oil of the companies. The program should implements at least the following class diagram:



- B. Moves of the oil prices on the stock exchange can be simulated as events launched by a Timer object. When an oil price is modified, the companies should be notified, in order to re-compute their price of oil.

The modification kinds (the oil price or the parity €\$) on the stock exchange will be randomly generated during the execution of the program.

- C. Write a Test class that creates an array with at least 5 companies. Every time the price of the oil of a company is modified, the program will display the value of the new price.