**EXERCISE – 7**

**OBSERVER PATTERN EXAMPLE**

import java.util.\*;  
interface Stock {  
 void register(Observer observer);  
 void deregister(Observer observer);  
 void notifyObservers();  
}  
// Observer.java  
interface Observer {  
 void update(double stockPrice);  
}  
// MobileApp.java  
class MobileApp implements Observer {  
 private String appName;  
  
 public MobileApp(String appName) {  
 this.appName = appName;  
 }  
  
 @Override  
 public void update(double stockPrice) {  
 System.*out*.println(appName + " received stock price update: " + stockPrice);  
 }  
}  
// WebApp.java  
class WebApp implements Observer {  
 private String appName;  
  
 public WebApp(String appName) {  
 this.appName = appName;  
 }  
  
 @Override  
 public void update(double stockPrice) {  
 System.*out*.println(appName + " received stock price update: " + stockPrice);  
 }  
}  
  
class StockMarket implements Stock {  
 private List<Observer> observers;  
 private double stockPrice;  
  
 public StockMarket() {  
 observers = new ArrayList<>();  
 }  
  
 @Override  
 public void register(Observer observer) {  
 observers.add(observer);  
 }  
  
 @Override  
 public void deregister(Observer observer) {  
 observers.remove(observer);  
 }  
  
 @Override  
 public void notifyObservers() {  
 for (Observer observer : observers) {  
 observer.update(stockPrice);  
 }  
 }  
  
 public void setStockPrice(double stockPrice) {  
 this.stockPrice = stockPrice;  
 notifyObservers();  
 }  
}  
public class ObserverPatternExample {  
 public static void main(String[] args) {  
 StockMarket stockMarket = new StockMarket();  
  
 MobileApp mobileApp1 = new MobileApp("MobileApp1");  
 MobileApp mobileApp2 = new MobileApp("MobileApp2");  
 WebApp webApp1 = new WebApp("WebApp1");  
  
 stockMarket.register(mobileApp1);  
 stockMarket.register(mobileApp2);  
 stockMarket.register(webApp1);  
  
 stockMarket.setStockPrice(100.00);  
 stockMarket.setStockPrice(101.50);  
  
 stockMarket.deregister(mobileApp1);  
  
 stockMarket.setStockPrice(102.75);  
 }  
}