

CSSE2003 Lecture 14 Supplement 1 (2009)

Original Source

(from *Refactoring: improving the design of existing code*,
Martin Fowler, Addison-Wesley, 2000)

Movie.java:

```
public class Movie {

    public static final int REGULAR = 0;
    public static final int NEW_RELEASE = 1;
    public static final int CHILDRENS = 2;

    private String title;
    private int priceCode;

    public Movie (String title, int priceCode) {
        this.title = title;
        this.priceCode = priceCode;
    }

    public int getPriceCode() {
        return priceCode;
    }

    public void setPriceCode(int arg) {
        priceCode = arg;
    }

    public String getTitle() {
        return title;
    }
}
```

Rental.java:

```
public class Rental {

    private Movie movie;
    private int daysRented;

    public Rental(Movie movie, int daysRented){
        this.movie = movie;
        this.daysRented = daysRented;
    }

    public int getDaysRented() {
        return daysRented;
    }

    public Movie getMovie() {
        return movie;
    }
}
```

Customer.java:

```
import java.util.*;

public class Customer {

    private String name;
    private List<Rental> rentals = new ArrayList<Rental>();

    public Customer(String name) {
        this.name = name;
    }

    public void addRental(Rental arg) {
        rentals.add(arg);
    }

    public String getName() {
        return name;
    }

    public String statement() {
        double totalAmount = 0.0;
        int frequentRenterPoints = 0;
        Iterator<Rental> rentalIterator = rentals.iterator();
        String result = "Rental Record for " + getName() + "\n";

        while (rentalIterator.hasNext()){
            double thisAmount = 0.0;
            Rental each = rentalIterator.next();

            // determine amounts for each line
            switch (each.getMovie().getPriceCode()) {
                case Movie.REGULAR:
                    thisAmount += 2.0;
                    if (each.getDaysRented() > 2)
                        thisAmount += (each.getDaysRented()-2)*1.5;
                    break;
                case Movie.NEW_RELEASE:
                    thisAmount += each.getDaysRented()*3.0;
                    break;
                case Movie.CHILDRENS:
                    thisAmount += 1.5;
                    if (each.getDaysRented() > 3)
                        thisAmount += (each.getDaysRented()-3)*1.5;
                    break;
            }
            // add frequent renter points
            frequentRenterPoints++;
            // add bonus for a two day new release rental
            if ((each.getMovie().getPriceCode() == Movie.NEW_RELEASE)
                && each.getDaysRented() > 2)
                frequentRenterPoints++;
            //show figures for this rental
            result += "\t" + each.getMovie().getTitle() + "\t" +
                String.valueOf(thisAmount) + "\n";
            totalAmount += thisAmount;
        }
        // add footer lines
        result += "Amount owed is " + String.valueOf(totalAmount)
            + "\n";
        result += "You earned "
            + String.valueOf(frequentRenterPoints)
            + " frequent renter points";
        return result;
    }
}
```