

Lab 5: Chapters 5 Defining Classes and Methods

Exercises

E.1) Design a class to represent credit card. Think about the attributes of a credit card: that is, what data is on the credit card? What behaviors might be reasonable for a credit card? Use these answers to draw a UML diagram and create three instances of this class.

E.2) Since a credit card itself is useless, unless you have an credit card accout, chhange your credit card class to CrditCardAccount class. You need extra two extra instance variables: balance and creditLimit. You also need need the methods to (1) make a payment using the card, (2) increase or decrease the credit limit.

The only instance variables you have to set are name on the card (exactly how the name appears on the card), card number which should also be a string,n a setData method that accepts the name, and card number. In the same method, you set balance to 0(zero) and creditLimit to a small amount like 500. You could increase it later in the increase the limit method.

The payment method should first check that the (balance + transactionAmount) is less than the credit limit before approving the charges. If the condition is satisfied, increase the balance by the transaction amount return transaction statment the way credit card bill receipts and a line for the customer to sign. Otherwise deny return a statment saying the charges are not approved.

Don't forget to write get methods for all instance variables, a toString method that prints the transaction the way the shops present to us to sign.

E6) Consider a class that keeps track of the sales of an item. An object of class will have the attributes

- Number sold
- Total sales
- Total discounts
- Cost per item
- Bulk quantity
- Bulk discount percentage

and the following methods:

- registerSale(n) records the sale of n items. If n is larger than the bulk quantity, the cost per item will be reduced by the bulk discount.
- displaySales displays the number sold, the total sales, and total discount.

- a. Implement the class in Java.
- b. Write some java Statements that test the class.