# **Chapter 5 - Classes**

## **Object Oriented Programming**

### **Objective:**

To become familiar with the concepts of object oriented programming in the Java environment and to learn how to manage classes.

### **Background:**

Object oriented programs can be used to hide variables to control access to important data. By using methods to manipulate this data, programmers need not know about the internal details of an object and how to write or modify the methods of that class.

### **Procedure:**

Write a Java program that generates the output (receipt) of a hypothetical cash register. Sample output:

The Right Price - School Supplies

Customer receipt

Date: Mon Feb 16 13:20:04 2004

# Description Cost

1: pencil 0.39

2: eraser 0.99

3: paper 1.49

----------------------

TOTAL 2.87

Thank you for shopping at The Right Price!

**Do the following steps:**

1. Create a project called Ch5\_1
2. Use two Java source files, Ch5\_1.java and Receipt.java
3. Ch5\_1.java should contain the following lines:
4. public class Ch5\_1 {
5. public static void main(String argv[]) {
6. //
7. // call constructor to initialize vars and allocate storage.
8. Receipt r = new Receipt("The Right Price - School Supplies");
9. r.addItem("pencil", 0.39);
10. r.addItem("eraser", 0.99);
11. r.addItem("paper", 1.4);
12. Receipt r2 = new Receipt("Fast Mart");
13. r2.addItem("candy", 0.50);
14. r2.addItem("eraser", 0.99);
15. r2.addItem("staples", 1.41);
16. r.printReceipt();
17. r2.printReceipt();
18. }
19. }
20. The Receipt class should include at least the following:

**Variables:**

private String company;

private String[] desc;

private double[] cost;

private double total = 0.0;

private int index = 0; // count of items added so far

public final static int MAX = 3; // max no. of items (dimension)

**Methods:**

public Receipt(String company\_name) { // constructor to initvars

company = company\_name;

desc = new String[MAX]; // allocate storage for desc

cost = new double[MAX]; // allocate storage for cost

public void addItem(String itemDesc, double itemCost) {

desc[index] = itemDesc;

cost[index++] = itemCost;

total += itemCost;

}

public void printReceipt() {

... // code to print receipt

}

### **Notes:**

1. Date information can be accessed using the Date class. For a description of the Date class (and other classes), visit: <http://java.sun.com/products/JDK/CurrentRelease/api/java.util.Date.html>

To output the date, you can use a statement of the form(or ScreenWriter):  
System.out.println(" ... " + new Date());

1. Be sure to import the class: java.util.Date.
2. Don’t forget about number formatting ( leading zeros, and the number of decimal digits, etc.)