

Lab 5

Due dates: In class portion 10/8

Out of class portion: 10/15

Note: This lab covers new information found in chapter 3.

1. Using the BankAccount class that is in the text on pages 94 and 95, add a method `public void addInterest(double rate)` to the BankAccount class. This method adds interest at the given rate. The rate should be in the form of an explicit parameter to the method meaning you should send the rate over as a parameter. (This is done similarly to deposit). In other words, if you had a rate of 10% your new balance would be $\text{balance} = \text{balance} + (\text{balance} * \text{interestRate})$. You will need to type in the BankAccount class from the text exactly as it appears in the text and add the method.

Also supply a BankAccountTester class that creates 3 objects of type BankAccount. Each should have a different initial balance.

Apply the addInterest method to each of the 3 objects.

Print the balance before and after you apply the addInterest method. Include a statement stating the expected value after the addInterest method. **In class**

2. Sales Tax: Write a class that will calculate the sales tax on a purchase. (This should be similar to the BankAccount class).
 - a. There should be a constructor that accepts as input the state sales tax and the county sales tax. These will be two different inputs (2 parameters).
 - b. Write a method that calculates the sales tax. This method should accept as input the price of the purchase (this will be used later so it needs to be assigned to a variable belonging to the class – an instance variable) and calculate the **total** sales tax charged on the purchase.
 - c. There should be another method that calculates the total cost by adding the initial purchase (variable you received in previous method) and the sales tax.
 - d. There should be a method to return sales tax.
 - e. There should be a method to return the total cost.

Write a tester class that asks the user to input the purchase price. The tester class should use a state sales tax of 6 percent and a local sales tax of 4 percent. (These are input to the SalesTax class).

Create an object using the sales taxes given.

Execute the method to calculate the total sales tax using the input. Execute a method to calculate the total product cost.

Print the original price, the total sales tax, and the total cost of the product. Also print the expected total sales tax and the expected total cost of the product

In class

3. Implement a class Employee. (This will be similar to a BankAccount). An employee has a name (a string) and a salary (a double). Provide a constructor with two parameters
`public Employee(String employeeName, double currentSalary)`

and methods

```
public String getName()
```

```
public double getSalary()
```

```
public void raiseSalary(double byPercent)
```

The raiseSalary method should take the salary of the employee and raise it by the percent from the explicit parameter. The getName and getSalary methods should return the name and salary respectively.

Create a tester program that creates an employee with a given salary.

Constructs an object of type Employee.

Print the employee's name.

Print the employee's salary.

Apply the raiseSalary method.

Print the new salary

out of class.