MPP Lab Test 11/16/13

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ StudentId:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Create a UML class diagram for the following problem description. Show the major class attributes and methods, and label your associations. Make a note of any design assumptions you make.
2. Create a sequence diagram for the use case of creating a loan for a customer. Assume the success case, i.e., the customer qualifies for the loan.
3. Write pseudo-code snippets that show Customer’s associations.
4. Write pseudo-code for the method in the class that checks loan qualification. Show the method signature and the method implementation.

Problem Description

Our bank has a loan office that provides loans to our customers. We support personal loans, business loans, and car loans. Interest rates are:

1. personal loans 5%
2. business loans 4%
3. car loans 3%

We require that a customer must have at least one account in order to qualify for a loan. We support checking and savings accounts now. Loan qualification is as follows:

1. For a personal loan the amount cannot exceed the customer’s total account value \* 3.
2. For a business loan the amount cannot exceed the customer’s total account value \* 4.
3. For a car loan the amount cannot exceed the customer’s total account value \* 5.
4. A customer is limited to one loan at any time.

Make your design extensible so we could support additional loans and accounts in the future.