

EEE 210: Software Engineering

Lab 5 Exercises for Week 6 (12 Feb. – 18 Feb.), Spring 2018

Note:

- Project folder nomenclature: Lab5_*yourname*
- After completion, zip your project folder and upload it to your Moodle account.
- Any queries during the lab should be discussed merely with the Instructor/TA.
- The output of each exercise you complete should be included (as screenshots) in the report named Report5_*yourname*. **Print and submit your report to the TA by the specified deadline.**

Exercise 1: (The *Account* class) Design a class named *Account* that contains:

- A private *int* data field named *id* for the account (default 0).
- A private *double* data field named *balance* for the account (default 0).
- A private *double* data field named *annualInterestRate* that stores the current interest rate (default 0). Assume all accounts have the same interest rate.
- A private *Date* data field named *dateCreated* that stores the date when the account was created.
- A no-arg constructor that creates a default account.
- A constructor that creates an account with the specified id and initial balance.
- The methods for *id*, *balance*, and *annualInterestRate*.
- The method for *dateCreated*.
- A method named *getMonthlyInterestRate()* that returns the monthly interest rate.
- A method named *getMonthlyInterest()* that returns the monthly interest.
- A method named *withdraw* that withdraws a specified amount from the account.
- A method named *deposit* that deposits a specified amount to the account.

(Hint: The method *getMonthlyInterest()* is to return monthly interest, not the interest rate. Monthly interest is $\text{balance} * \text{monthlyInterestRate}$. *monthlyInterestRate* is $\text{annualInterestRate} / 12$. Note that *annualInterestRate* is a percentage, e.g., like 4.5%. You need to divide it by 100.)

Write a test program that creates an *Account* object with an account ID of 1122, a balance of \$20,000, and an annual interest rate of 4.5%. Use the *withdraw* method to withdraw \$2,500, use the *deposit* method to deposit \$3,000, and print the balance, the monthly interest, and the date when this account was created.