Close Lab 2: Create and use a class

Problem Description:

(*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 accessor and mutator methods for id, balance, and annualInterestRate.
- The accessor method for dateCreated.
- A method named getMonthlyInterestRate() that returns the monthly interest rate.
- A method named withdraw that withdraws a specified amount from the account.
- A method named deposit that deposits a specified amount to the account.

Draw the UML diagram for the class. Implement the class. 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.

Analysis:
(Describe the problem including input and output in your own words.)

Design:
(Draw an UML class diagram for the Account class.)

Coding: (main testing part provided)

```
public class Test {
  public static void main (String[] args) {
    Account account = new Account(1122, 20000);
    Account.setAnnualInterestRate(4.5);
```

```
    account.withdraw(2500);
    account.deposit(3000);
    System.out.println("Balance is " + account.getBalance());
    System.out.println("Monthly interest is " +
      account.getMonthlyInterest());
    System.out.println("This account was created at " +
      account.getDateCreated());
  }
}

Class Account {

  // Implement the class here

}
```

Testing: (Describe how you test this program)

Submission:

Follow our class coding standard to complete this lab, check out for credit.