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\* 22 December 2018

\* COMP171-800RL

\* Professor Pinzon

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\* Must contain:

\* ■ 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 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.

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**package** lab10;

**public** **class** Main {

**public** **static** **void** main(String[] args) {

// Create an Account object with an account

// ID of 1122, and a balance of $20,000

AccountConstructor account = **new** AccountConstructor(1122, 20000);

// Set annual interest rate of 4.5%

account.setAnnualInterestRate(4.5);

// Withdraw $2,500

account.withdraw(2500);

// Deposit $3,000

account.deposit(3000);

// Display the balance, the monthly interest,

// and the date when this account was created

System.***out***.println("%n Account Statement");

System.***out***.println("------------------------------------------");

System.***out***.println("Account ID: " + account.getId());

System.***out***.println("Date created: " + account.getDateCreated());

System.***out***.printf("Account balance: $%.2f %n", account.getBalance());

System.***out***.printf("Monthly interest: $%.2f %n",

account.getMonthlyInterest());

}

}

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\* Professor Pinzon AccountConstructor

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**package** lab10;

**import** java.util.Date;

**public** **class** AccountConstructor {

// Data fields as per required by the textbook project

**private** **int** id;

**private** **double** balance;

**private** **static** **double** *annualInterestRate*;

**private** Date dateCreated;

// Constructors

AccountConstructor() {

id = 0;

balance = 0;

*annualInterestRate* = 0;

dateCreated = **new** Date();

}

// This will make an account with the specified id and initial balance

AccountConstructor(**int** newId, **double** newBalance) {

id = newId;

balance = newBalance;

dateCreated = **new** Date();

}

// mutator methods

**public** **void** setId(**int** newId) {

id = newId;

}

**public** **void** setBalance(**double** newBalance) {

balance = newBalance;

}

**public** **void** setAnnualInterestRate(**double** newAnnualInterestRate) {

*annualInterestRate* = newAnnualInterestRate;

}

// accessor methods

**public** **int** getId() {

**return** id;

}

**public** **double** getBalance() {

**return** balance;

}

**public** **double** getAnnualInterestRate() {

**return** *annualInterestRate*;

}

**public** String getDateCreated() {

**return** dateCreated.toString();

}

**public** **double** getMonthlyInterestRate() {

**return** *annualInterestRate* / 12;

}

// methods used in main program

**public** **double** getMonthlyInterest() {

**return** balance \* (getMonthlyInterestRate() / 100);

}

**public** **void** withdraw(**double** amount) {

balance -= amount;

}

**public** **void** deposit(**double** amount) {

balance += amount;

}

}