CS 2163 JAVA

Assignment 3

Assignment worth 40 points

Design a class named SavingsAccount that contains:

* int data field named id for the account
* double data field named balance for the account
* double data field named annualIntRate that stores the current interest rate
* Date data field named dateEstablished 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 annualIntRate.
* The accessor method for dateEstablished.
* A method named getWeeklyIntRate() that returns the weekly interest rate.
  + Weekly interest is
    - balance \* weeklyInterestRate
    - weeklyInterestRate is annualInterestRate / 52.
  + Note annualInterestRate is a percentage, for example 4.5%. You need to divide it by 100.
* A method named deposit that deposits a specified amount to the account.

Write a test program that asks the user to enter their account number, initial balance, and annual interest rate (no need to perform error checking here – assume they enter the correct info).

Display list of options to deposit, check weekly interest, check account details, and exit the program.

Error checking is needed on the menu selection portion (needs to be 1, 2, 3, or 4) and on the deposit amounts (needs to be >= 0)

Complete the program and upload the solution for this problem using your last name

Example: **Kelly\_Assignment3.java**

**Assignment Grading Sheet**

|  |  |  |  |
| --- | --- | --- | --- |
| **Grading Criteria** | **Total Points** | **Points Deducted** | **Comments** |
| Savings Account Class with all data members and methods | 10 |  |  |
| Test Program that runs the main method | 5 |  |  |
| Correct calculations | 5 |  |  |
| Correct loop structure used | 5 |  |  |
| Proper error checking where specified in the directions | 5 |  |  |
| Good documentation – file headers, indentation, variable names etc. | 5 |  |  |
| File saved and uploaded correctly, program compiled with no errors | 5 |  |  |
| Total Points | 40 |  |  |

**Sample Run:**

Welcome to your Savings Account App!

Enter your account number: 1234

Enter your initial balance: 1000

Enter your annual interest rate: 3.5

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= OPTIONS BELOW =

=============================

1. Deposit

2. View Weekly Interest Rate

3. View Account Details

4. Exit

Enter your selection

8

INVALID SELECTION - TRY AGAIN!

1

Enter your deposit amount:

200

New Balance: 1200.0

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= OPTIONS BELOW =

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1. Deposit

2. View Weekly Interest Rate

3. View Account Details

4. Exit

Enter your selection

2

Your Weekly Interest Amount is

$ 0.81

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= OPTIONS BELOW =

=============================

1. Deposit

2. View Weekly Interest Rate

3. View Account Details

4. Exit

Enter your selection

3

Account ID: 1234

Account Creation Date/Time: Sun Nov 07 13:15:59 CST 2021

Balance: 1200.0

Weekly Interest Amount: $ 0.81

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= OPTIONS BELOW =

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1. Deposit

2. View Weekly Interest Rate

3. View Account Details

4. Exit

Enter your selection

4

Thank you - Goodbye!