CSE 102 Programming Assignment 1

Due:

Wednesday, 16-March-2022 by 23:59

Deliverables:

The following Java file should be submitted to MS Teams by the due date and time specified above. Submissions received after the deadline will be subject to the late policy described in the syllabus.

- Assignment01_{StudentNumber}.java
- Image files for screenshots of your progress:
  - May be separate image files or all pasted into a .docx or .pdf
  1. Assignment01_{StudentNumber}_firstCompile
  2. Assignment01_{StudentNumber}_firstCompileNoError (optional)
  3. Assignment01_{StudentNumber}_firstTestRun
  4. Assignment01_{StudentNumber}_firstTestRunNoError (optional)
  5. Assignment01_{StudentNumber}_finalCompile
  6. Assignment01_{StudentNumber}_finalRun

Specifications:

Overview: You will continue your program to maintain the account balances for bank customers. Do not forget your headers with Name and Date information.

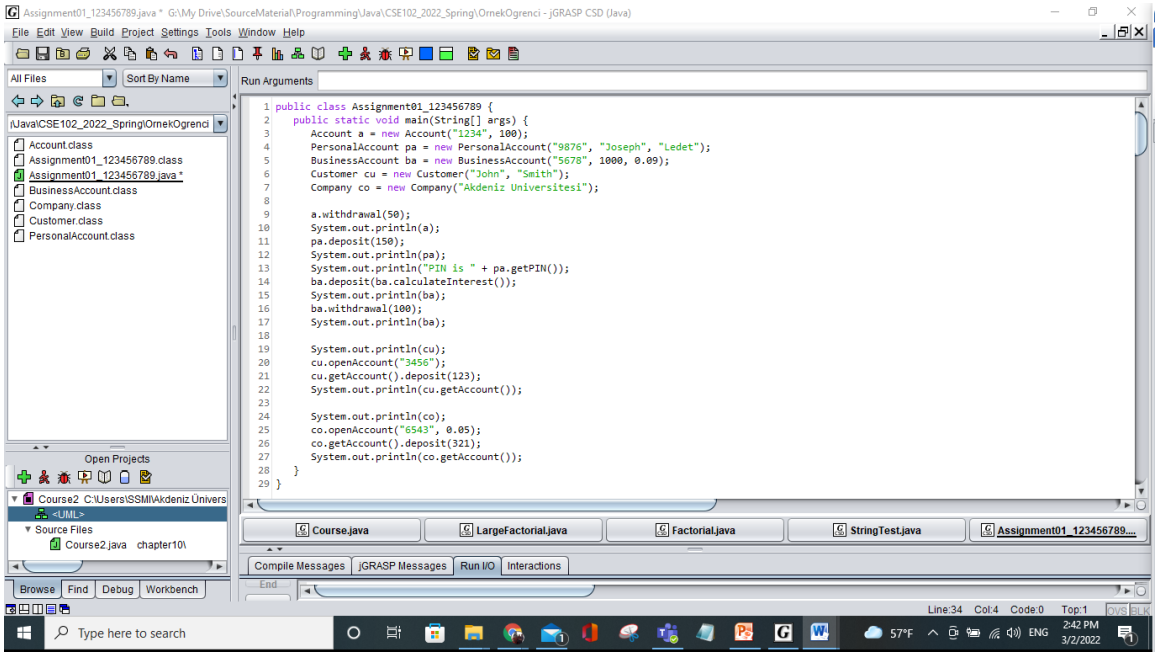
Requirements: Write a set of classes according to the following specifications:

1. Account
   a. Attributes
      i. Account Number: String
      ii. Balance: double
   b. Methods
      i. Constructor that takes the account number as parameter and defaults the balance to 0
      ii. Constructor that takes the account number and starting balance as parameter if the balance is negative, set the balance to 0
      iii. getAcctNum(): String
      iv. getBalance(): double
      v. deposit(amount: double): None – increase balance by amount, if amount is negative, do not change the balance.
      vi. withdrawal(amount: double): None – decrease balance by amount, if amount is negative, do not change the balance.
      vii. toString(): String – “Account {account number} has {balance}”
2. PersonalAccount – a child of Account
   a. Attributes
      i. Name: String
      ii. Surname: String
      iii. PIN: String
   b. Methods
      i. Constructor that takes the account number, name, and surname as parameters and sets the PIN to four (4) random digits

   ii. Constructor that takes the account number, name, surname, and balance as parameters and sets the PIN to four (4) random digits
   iii. getName() and setName(name: String)
   iv. getSurname() and setSurname(surname: String)
   v. getPIN() and setPIN(PIN: String)
   vi. toString(): String – "Account {account number} belonging to {name} {surname all capital letters} has {balance}"
3. BusinessAccount – a child of Account
   a. Attributes
      i. Interest Rate: double
   b. Methods
      i. Constructor that takes the account number and rate as parameters
      ii. Constructor that takes the account number, balance, and rate as parameters
      iii. getRate() and setRate(rate: double)
      iv. calculateInterest(): double – return amount of interest earned for the balance and rate. NOTE: does not change value of balance
4. Customer
   a. Attributes
      i. Name: String
      ii. Surname: String
   b. Methods
      i. Constructor that takes the name and surname as parameter
      ii. getName() and setName(name: String)
      iii. getSurname() and setSurname(surname: String)
      iv. openAccount(acctNum: String): None – creates a PersonalAccount for the customer using the account number and customer name and surname. Balance starts as 0.
      v. getAccount(): PersonalAccount – returns the account object for the customer
      vi. toString(): String – "{name} {surname all capital letters}"
5. Company
   a. Attributes
      i. Name: String
   b. Methods
      i. Constructor that takes the name as parameter
      ii. getName() and setName(name: String)
      iii. openAccount(acctNum: String, rate: double): None – creates a BusinessAccount for the company using the account number and interest rate. Balance starts as 0.
      iv. getAccount(): BusinessAccount – returns the account object for the company
      v. toString(): String – "{name}"

CSE 102 Programming Assignment 1

Design: Your program does not require a main method. You are only responsible for creating the five (5) classes described above. An example of how your program should operate is given below:



Code: The file you submit will be named Assignment01_{StudentNumber}. You should put all java classes for this assignment inside of this one (1) file as discussed in class.

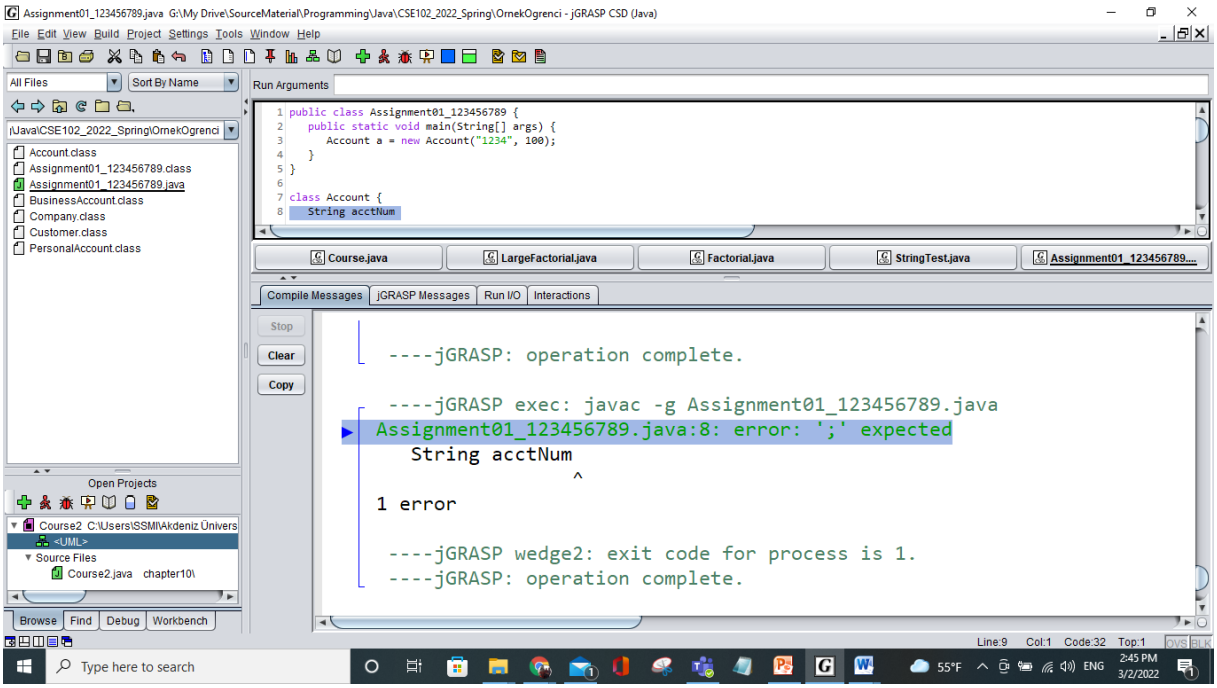
Test: You are responsible for testing your program. It is important to not rely solely on the examples presented in this Assignment description.

Grading:

MS Teams Submission: If anything is ambiguous, it is your responsibility to ask questions. It is also your responsibility to complete this assignment in a timely manner. Questions regarding this assignment will likely not be answered if received after 17:00 on the due date of the assignment.

Quiz: There will be a quiz based on this assignment given on 1-April. The result of this quiz will be used to determine your grade on this assignment. **Note**: if you do not take the quiz, your score on this assignment **will be 0**.

Screenshots: For this assignment, you must provide at minimum the six listed screenshots of your progress. An example of the screen shot for first compile is given below. An example of the screen shot for final run is shown above as the example output. These screenshots must include the entire screen (window, task bar, etc.). **Note**: if you do not submit these images, your score on this assignment **will be 0**.


Assignment01_123456789.java G:\My Drive\SourceMaterial\Programming\Java\CSE102_2022_Spring\OrnekOgrenci - jGRASP CSD (Java)
File Edit View Build Project Settings Tools Window Help
All Files
Sort By Name
Run Arguments
Account.class
Assignment01_123456789.class
Assignment01_123456789.java
BusinessAccount.class
Company.class
Customer.class
PersonalAccount.class
Course.java
LargeFactorial.java
Factorial.java
StringTest.java
Compile Messages
jGRASP Messages
Run I/O
Interactions
Stop
Clear
Copy
----jGRASP: operation complete.
----jGRASP exec: javac -g Assignment01_123456789.java
Assignment01_123456789.java:8: error: ';' expected
String acctNum
^
1 error
----jGRASP wedge2: exit code for process is 1.
----jGRASP: operation complete.
Open Projects
Course2 C:\Users\SSMI\Akdeniz Univers
<UML>
Source Files
Course2.java chapter10\
Browse
Find
Debug
Workbench
Line:9 Col:1 Code:32 Top:1
Type here to search
55°F
ENG
2:45 PM
3/2/2022