

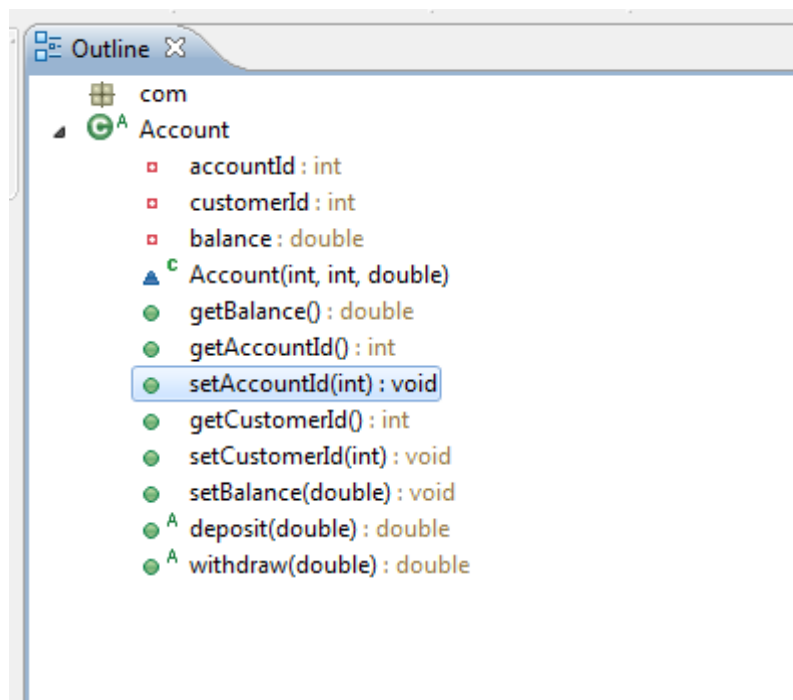
A banking system is looking for automated solution for managing accounts and related deposit and withdrawal. The system would currently support feature of Savings Account, however, it may have more

account types in future. Develop a Java project which serves this system following below guidelines. Class outline is shared after the guidelines. Ensure the same is met 100%, else your solution would be considered null and void.

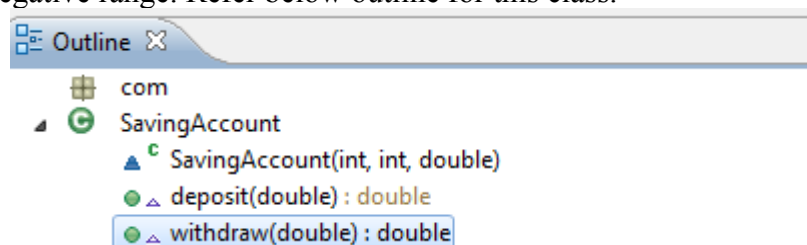
Create project BankingSystem in eclipse. Create package com within src folder. All classes should be created inside this package.

Create abstract class – Account with attributes account id, customer id and abstract methods – deposit and withdraw. Refer below class outline for this class:

Class outline for Account is given below



Create child class – SavingAccount from this abstract class. This class will implement withdraw and deposit methods where amount to be deposited should be added to the balance and amount to be withdrawn should be deducted from the balance. Withdrawal will not check for zero balance, hence balance can go in negative range. Refer below outline for this class.



Create class Bank which has ArrayList of Account. Initialize this list in the constructor.

Write below methods in Bank class:

addAccount – This method will take Account object as a parameter. It will add this object to the list if account with specific id does not exist and return true. If account with specific id already exists, it will return false.

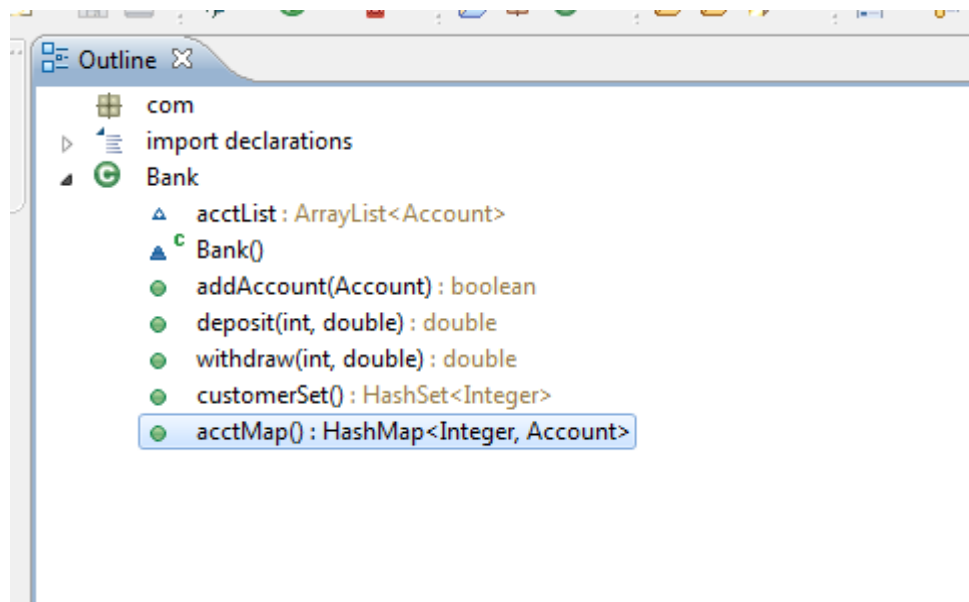
deposit – This method will take account id and deposit amount. Amount will be deposited into specific account with that id. Method will return new balance if account with that id exists, else returns -1.

withdraw – This method will take account id and withdraw amount. It will return -1 if account with specific id does not exist. Else, it will check if withdraw amount is less than or equal to existing balance.

If yes, perform withdrawal .. However, if withdraw amount is greater than existing balance, then exception of class “OutOfBalanceException” should be thrown. If the id exists the system has to return the account balance

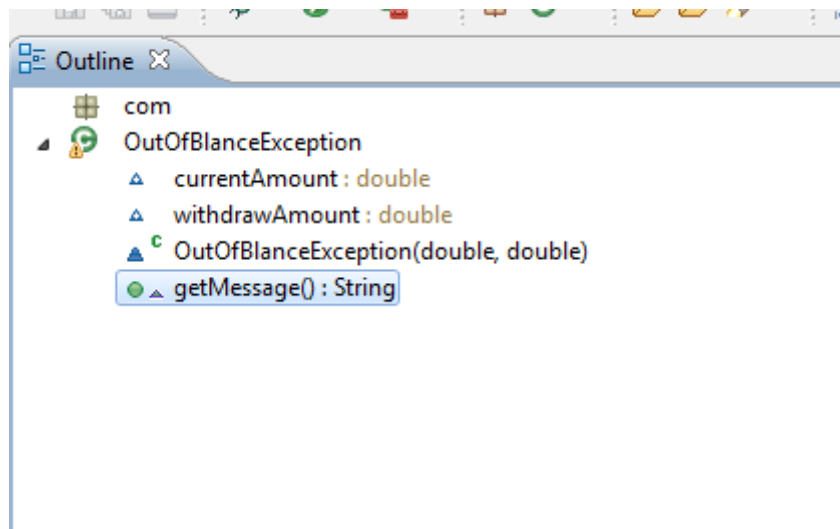
getUniqueCustomerIds() – This method will return a Set of Integer types, where it will contain unique customer ids across all account objects.

acctMap() – This method will return HashMap with account id as key and respective account object as value.



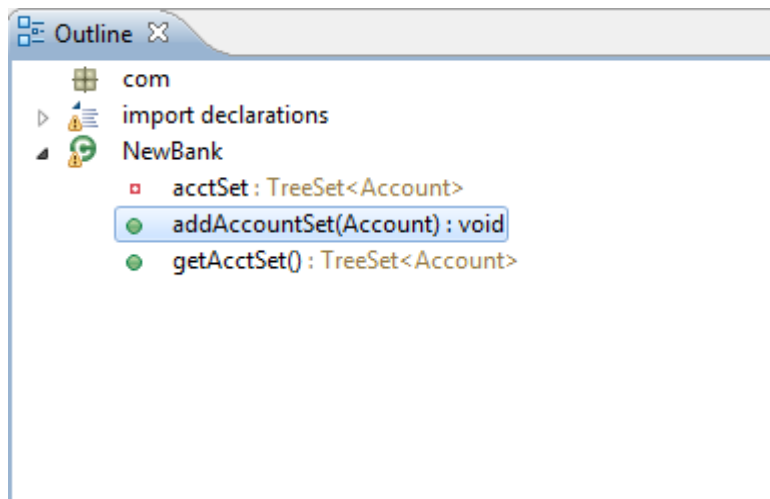
Declare class OutOfBalanceException which extends Exception class.

Constructor of this class will take existing balance as first parameter and withdrawal amount as second parameter. getMessage() method should be overridden such that it returns the difference of balance – withdraw amount as a String. Outline of this class is as below



Declare class NewBank which has tree set of Account objects. Write method to add account object to this set and returns size of the set after adding the object. Tree set of accounts should maintain accounts in ascending order of account id.(Hint you would need to implement comparable in Account class)

Refer class outline as below:



Main class can be constructed for testing all the methods.