

CS4013 Lab 5

Extend the solution to Lab 4 as follows:

1. Add a new data field `name` of type `String` to the `BankAccount` class.
2. Change the implementation to store the `dateCreated` data field as a `LocalDateTime` (if not already done) object and the return type of `getDateCreated()` can be changed to `LocalDateTime`.
3. Add a new constructor that constructs a bank account with the specified name, id and balance.
4. Make appropriate changes to the subclasses of `BankAccount` by also adding relevant constructors.
5. Add a new data field named `transactions` of type `ArrayList<Transaction>` which stores the transactions for an account.
6. The `Transaction` class should have:
 - a. A `date` representing the date of the transaction (represented by a `LocalDateTime` object);
 - b. A `type` (W or D) to represent the type of transaction (withdraw or deposit);
 - c. An `amount` to represent the amount of the transaction;
 - d. A `balance` to represent the new balance after the transaction;
 - e. A `description` of the transaction;
 - f. Add a constructor to construct a `Transaction` with the specified type, amount, balance and description;
 - g. Add a `toString()` method to return transaction details as a `String`.
7. Modify the `withdraw` and `deposit` methods in the bank account classes to add a transaction to the transactions array list.
8. Create a test program which will create at least one `SavingsAccount` and one `CurrentAccount`. Deposit and withdraw funds to/from these accounts. Print an account summary for each account that shows the account details including all transactions.