CSCI 1301 – Assignment 3

Bank Accounts

1. Given the following UML diagram on the variety of bank accounts:

Account
#balance: double
+Account (init_balance: double) +getBalance(): double +deposit(amount: double): boolean +withdraw(amount: double): boolean

SavingAccount
-annualInterest: double
+monthlyInterestDeposit (amount: double): boolean +withdraw(amount: double): boolean

CheckingAccount
-insufficientFee: double
+withdraw(amount: double): boolean
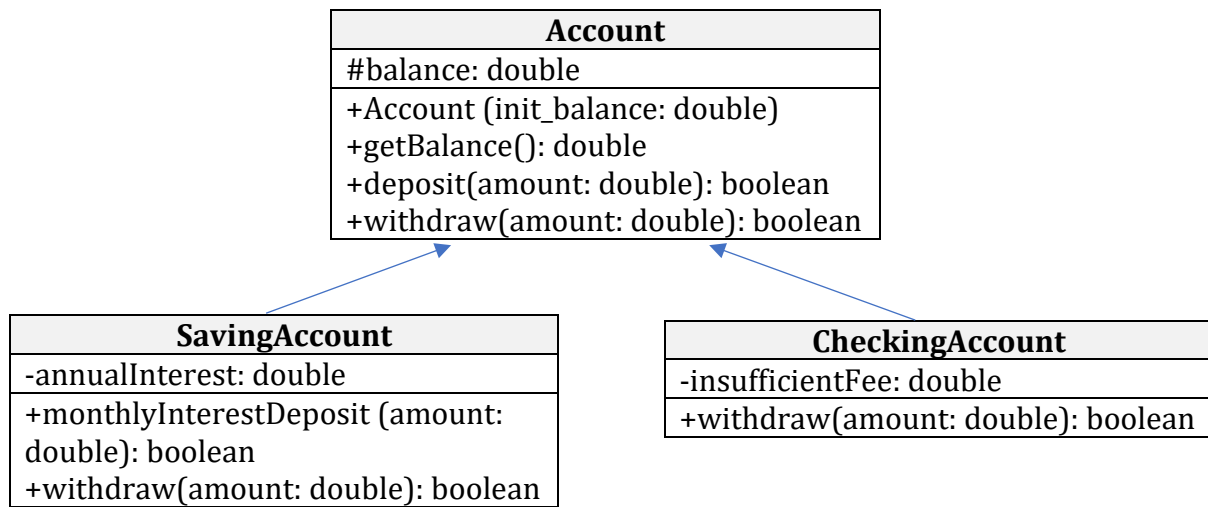
2. Create the above classes with appropriate inheritance and polymorphism (method overriding and method overloading).

3. The Saving Account requirements:
   a. The **Saving Account** yields a profit based on the annual interest given by the bank (**0.25%**).
   b. The **montlyInterestDeposit()** method will deposit the profit yields on monthly basis based on the remaining balance.
   c. The **withdraw()** method will deduct the remaining balance of the account.

4. The Checking Account requirements:
   a. The **Checking Account** allows account holder to issue a check with any amount that is less than the account balance.
   b. If the issuance amount is exceeded the account balance (overdrawn), a **overdraft fee (RM 10)** will be imposed to the checking account (automatically deducted to the account balance).
   c. The **withdraw()** method will deduct the remaining balance of the account.

5. Refer to the below examples for input and output.
6.

Bank Account
1. Saving 2. Checking 3. Exit Choose your option:

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Bank Account

1. Saving
2. Checking
3. Exit

Choose your option: 1

1. Deposit
2. Balance
3. Withdraw
4. Return

Bank Account

1. Saving
2. Checking
3. Exit

Choose your option: 1

1. Deposit
2. Balance
3. Withdraw
4. Return

Choose your option: 1

Amount: RM 1000.00

Choose your option: 2

Balance: RM 1000.20

Choose your option: 3

Amount: RM 500.00

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Choose your option: 2

Balance: RM 500.20

Choose your option: 4

1. Saving
2. Checking
3. Exit

Choose your option: 3

Bank Account

1. Saving
2. Checking
3. Exit

Choose your option: 2

1. Deposit
2. Balance
3. Withdraw
4. Return

Choose your option: 2

Balance: RM 500.20

Choose your option: 3

Amount: RM 600.00

Choose your option: 2

Balance: RM -109.80

Note:

Use *extend* and *super* keywords to access parent class Account to perform the above operations.

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