Bank Accounts

Design a class named **Account** that contains: (the bank cannot create an account without knowing the type of account. What special type of class should it be?)
Attributes:

- accountNumber: String
- balance for the account: double
- dateCreated that stores the date when the account was created: LocalDate

Methods:

- A constructor that creates an account with the specified id and initial balance.
- The accessor(getter) and mutator(setter) methods for id, balance.
- The accessor method for dateCreated.
- A method named withdraw: You have to know the type of the account to implement the correct logic for “withdraw”. What type of method should it be?
- A method named deposit: You have to know the type of the account to implement the correct logic for “deposit”. What type of method should it be?

Design a class named **CheckingAccount** that derives from Account. CheckingAccount contains:
Attributes:

- overdraftLimit: double (for example, if the overdraft limit is $50, after withdraw the checking account balance needs to be >= -50)

Methods:

- A constructor that creates an account with the specified id, balance and overdraft limit.
- Appropriate getters and setters.
- withdraw method: using overdraftLimit. If the customer is over withdrawing more than the limit sysout a message and reject the transaction
- deposit method: normal ways to deposit fund
- toString: include all attributes of the checking account.

Design a class named **SavingAccount** that derives from Account. SavingAccount contains:
Attributes:

- annualInterestRate: double. Hard code the value to 2% (The rate should be the same for all instances of the class and should not be modified. What modifier should it have?)
- minDeposit: the amount that put in the account in deposit transaction has to be greater than minDeposit (this value is not hard coded and will be set for each saving account by value passed in to the constructor)
- monthlyFee: monthly maintenance fee for ALL SavingAccounts. Hard code the value to $10 (again, what modifier should it have?) The fee is waived if the account balance is greater than $1000.

Methods:

- A constructor that creates an account with the specified id, balance and minDeposit.
- Appropriate getters and setters.
- withdraw method: normal ways to withdraw. If the customer is attempting to overdraft from the saving account, sysout a message and reject the transaction.
- deposit method: if the customer is attempting to deposit an amount that is less than minDeposit sysout message then reject the transaction.
- toString: include all attributes of the saving account and also a new balance amount which includes the interest pay and monthly fee deduction if it applies. (interest pay is calculated before the deduction)

sample toString:

Saving Account
Account No: 00002
Account Balance: $500.00
Date Created: 2022-09-27
Annual Interest Rate: 2.00%
Monthly Fee: $10.00
Minimum Deposit Amount: $50.00
New Balance will be: $490.83

Checking Account
Account No: 00003
Account Balance: $500.00
Date Created: 2022-09-27
Overdraft Limit: $50.00

Use the provided AccountDemo code to test run your program. Copy and paste the results in the appropriate section of the machine problem worksheet.