

CS 1110 Assignment 6

1. Account Class Hierarchy

Name: `Account.java`, `CheckingAccount.java`, `SavingsAccount.java`

Create an `Account` class that matches the specification in the following UML diagram. Also, create a `CheckingAccount` subclass and a `SavingsAccount` subclass. Put each class in its own file.

Account
<code>id: int</code>
<code>balance: double</code>
<code>dateCreated: Date</code>
<hr/>
<code>Account()</code>
<code>Account(id: int, balance: double)</code>
<code>getID(): int</code>
<code>setID(id: int)</code>
<code>getBalance(): double</code>
<code>setBalance(balance: double)</code>
<code>getDateCreated(): Date</code>
<code>toString(): String</code>
<code>deposit(amount: double)</code>
<code>withdraw(amount: double)</code>

CheckingAccount
<code>overdraft: double</code>
<code>CheckingAccount()</code>
<code>CheckingAccount(id: int, balance: double, overdraft: double)</code>
<code>getOverdraft(): double</code>
<code>setOverdraft(overdraft: double)</code>
<code>toString(): String</code>

SavingsAccount
<code>annualInterestRate: double</code>
<code>SavingsAccount()</code>
<code>SavingsAccount(id: int, balance: double, annualInterestRate: double)</code>
<code>getAnnualInterestRate(): double</code>
<code>setAnnualInterestRate(annualInterestRate: double)</code>
<code>toString(): String</code>

- `deposit()` should increment `balance` by `amount`
- `withdraw()` should decrement `balance` by `amount`
- `toString()` should return a string indicating the type of account and the values of that accounts attributes as indicating in the sample run / test program
- Use default values of 0 for numeric attributes and current date for calendrical attributes
- You should not need to modify anything in the test program

Sample Run (from TestAccounts.java):

```
Account
ID: 0
Balance: $0.0
Date Created: Fri Mar 09 01:22:58 CST 2018
```

```
Account
ID: 9999999
Balance: $1000.0
Date Created: Fri Mar 09 01:22:58 CST 2018
```

```
After withdraw(): $500.0
After deposit(): $750.0
```

```
Account
ID: 1234567
Balance: $100.0
Date Created: Fri Mar 09 01:22:58 CST 2018
```

```
Checking Account
ID: 0
Balance: $0.0
Overdraft: $0.0
Date Created: Fri Mar 09 01:22:58 CST 2018
```

```
ID: 0
Balance: $0.0
Overdraft: $0.0
Date Created: Fri Mar 09 01:22:58 CST 2018
```

```
Checking Account
ID: 2222222
Balance: $1234.56
Overdraft: $500.0
Date Created: Fri Mar 09 01:22:58 CST 2018
```

```
Overdraft: $500.0
Overdraft: $2000.0
```

```
Savings Account
ID: 0
Balance: $0.0
Annual Interest Rate: 0.0
Date Created: Fri Mar 09 01:22:58 CST 2018
```

```
ID: 0
Balance: $0.0
Annual Interest Rate: 0.0
Date Created: Fri Mar 09 01:22:58 CST 2018
```

```
Savings Account
ID: 3333333
```

Balance: \$550.0

Annual Interest Rate: 0.15

Date Created: Fri Mar 09 01:22:58 CST 2018

Annual Interest Rate: 0.15

Annual Interest Rate: 0.35