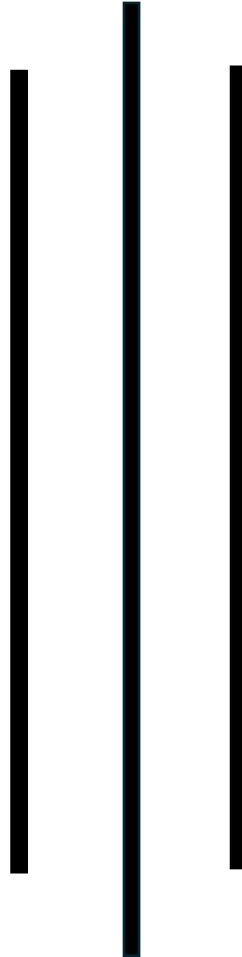




**INFO2313 Assignment2**  
**Instructor: Nukhet Tuncbilek**



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NOTE:- The entire assignment can also be found at <https://github.com/realskull/INFO2313-Assignment2> with full version history and details!

Devlog:

I started off by sketching a simple UML for Account - fields for account number, name, balance, transactions, and creation date, plus methods for deposit, withdrawal, display, and combine. In v1.0, I wrote the barebones Java class in VS Code (using its Java extensions for auto-completion), focusing first on constructors and core behaviors.

#### **v1.0 -> v1.1 (The initial version with validation)**

Added validations to deposit()/withdraw() to reject non-positive amounts.

Printed user-friendly error messages drawn from a StackOverflow thread.

```
Test.java:6: error: cannot find symbol
    Account account = new Account(1122, "my checking account");
                        ^
  symbol:   class Account
  location: class Test
Test.java:20: error: cannot find symbol
    Account accountSavings = new Account(1133, "my savings account");
                        ^
  symbol:   class Account
  location: class Test
Test.java:20: error: cannot find symbol
    Account accountSavings = new Account(1133, "my savings account");
                        ^
  symbol:   class Account
  location: class Test
4 errors
```

I also faced “cannot find symbol” and “wrong name” errors: realized I needed matching package assignment2; declarations and directory layout. Moved both .java files into assignment2 folder and then and compiled with:

```
javac assignment2/Account.java assignment2/Test.java
java assignment2.Test
```

```

PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> javac mybank/Account.java mybank/Test.java
error: file not found: mybank/Account.java
Usage: javac <options> <source files>
use --help for a list of possible options
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> java mybank.Test
Error: Could not find or load main class mybank.Test
Caused by: java.lang.ClassNotFoundException: mybank.Test
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> javac Account.java Test.java
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> java Test
Error: Could not find or load main class Test
Caused by: java.lang.NoClassDefFoundError: Test (wrong name: assignment2/Test)
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> javac assignment2/Account.java assignment2/Test.java
error: file not found: assignment2/Account.java
Usage: javac <options> <source files>
use --help for a list of possible options
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> java Test
Error: Could not find or load main class Test
Caused by: java.lang.NoClassDefFoundError: Test (wrong name: assignment2/Test)
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> javac assignment2/Account.java assignment2/Test.java
error: file not found: assignment2/Account.java
Usage: javac <options> <source files>
use --help for a list of possible options
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> java assignment2.Test
Error: Could not find or load main class assignment2.Test
Caused by: java.lang.ClassNotFoundException: assignment2.Test
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> java assignment2.Test
Error: Could not find or load main class assignment2.Test
Caused by: java.lang.ClassNotFoundException: assignment2.Test
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> javac assignment2/Account.java assignment2/Test.java
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> java assignment2.Test
Account num: 1122
Account name: my checking account
Balance: 1100.00 CAD
4 transactions since created at Thu Jul 10 15:22:09 PDT 2025

Account num: 1133
Account name: my savings account
Balance: 12000.00 CAD
2 transactions since created at Thu Jul 10 15:22:09 PDT 2025

Account num: 1190

```

v2.0

- Switched validation messages to System.err.println per Google Java style.
- Hardened combine() with a null-check and warning.
- Expanded header with a detailed version history, AI-use declaration, and external citations (Oracle Java Docs, Google search gemini, StackOverflow).

### Robust Testing with AI

To ensure scalability, I asked ChatGPT to generate TestRobust.java, a stress-test program that performs hundreds of mixed deposits/withdrawals (including boundary and overflow scenarios). The AI-generated test suite:

- Randomizes transaction amounts up to millions
- Verifies running balance consistency
- Logs transaction counts after each batch

Running TestRobust.java confirmed that Account handles large volumes and high values without loss of precision or logic errors. This is a very good class that can be scaled and worked upon for future assignments!

```

Account name: my all money at the bank
Balance: 13100.00 CAD
6 transactions since created at Thu Jul 10 15:22:09 PDT 2025
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> javac assignment2/Account.java assignment2/Test.java assignment2/TestRobust.java

PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> javac assignment2/Account.java assignment2/TestRobust.java
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> java assignment2.TestRobust
=== Starting Robust Test ===
[Error] Deposit amount must be greater than zero.
[Error] Deposit amount must be greater than zero.
[Error] Insufficient funds. Cannot withdraw 600.0
[Error] Withdrawal amount must be greater than zero.
[Error] Withdrawal amount must be greater than zero.
Account num: 2001
Account name: Main
Balance: 500.00 CAD
2 transactions since created at Thu Jul 10 15:40:49 PDT 2025
Account num: 0
Account name: none
Balance: 0.00 CAD
0 transactions since created at Thu Jul 10 15:40:49 PDT 2025
Account num: 2002
Account name: Secondary
Balance: 7000.00 CAD
3 transactions since created at Thu Jul 10 15:40:49 PDT 2025
After 1000 small transactions:
Account num: 7777
Account name: Unified
Balance: 7500.00 CAD
2003 transactions since created at Thu Jul 10 15:40:49 PDT 2025
Handled null account safely.
Account num: 7777
Account name: Unified
Balance: 0.00 CAD
2078 transactions since created at Thu Jul 10 15:40:49 PDT 2025
=== Robust Test Completed ===
PS C:\Users\utkri\OneDrive\Desktop\Assignment3\INFO2313-Assignment2> 

```

## Tools & AI Usage

- VS Code Java extensions (editing, debugging)
- Oracle JavaDocs & Google style guide (API & conventions)
- StackOverflow (validation patterns, package setup)
- ChatGPT to explain compiler errors, draft comments, suggest fixes, and auto-generate the large-scale tests (TestRobust.java). All AI outputs were manually reviewed, refined, and integrated.