
Programming Assignment 3: Selection Control Structures
Total Points (30 pts) - Due Wednesday, February 1st at 11:59 PM

This assignment will give you practice with interactive programs and if/else statements.

Bank Transaction [30 points]



Write a program to simulate a bank transaction. There are two bank accounts: checking and savings. First, ask for the initial balances of the bank accounts; reject negative balances.

Then ask for the transaction; options are deposit and withdrawal. Then ask for the account; options are checking and savings. Then ask for the amount; reject transactions that overdraw an account. At the end, print the balances of both accounts.

The following are four runs of your program and their expected output (user input is bold):

Sample run 1:

```
Enter the initial balance for checking: 3000
Enter the initial balance for savings: 2000
Deposit or withdraw? 1) Deposit or 2) Withdraw? 1
Deposit to 1) Checking or 2) Savings? 1
Deposit how much? 200
After the transaction:
    Savings balance: 2000.0
    Checking balance: 3200.0
```

Sample run 2:

```
Enter the initial balance for checking: 2000
Enter the initial balance for savings: 1000
Deposit or withdraw? 1) Deposit or 2) Withdraw? 1
Withdraw from 1) Checking or 2) Savings? 2
Withdraw how much? 3000
You can't do that -- there isn't that much money in the account!
After the transaction:
    Savings balance: 1000.0
    Checking balance: 2000.0
```

Sample run 3:

```
Enter the initial balance for checking: 4000
Enter the initial balance for savings: 2000
Deposit or withdraw? 1) Deposit or 2) Withdraw? 2
Withdraw from 1) Checking or 2) Savings? 2
Withdraw how much? 400
After the transaction:
    Savings balance: 1600.0
    Checking balance: 4000.0
```

CLASS NAME. Your program class should be called *BankTransaction.java*

Rules

- You will not get any points for a non-working program.
- Before submitting an assignment, test it on several types of input.
- Don't change the purpose of program variables or output. Write your program so that it does exactly what is asked.
- Check for errors before you compute. If the user can supply an incorrect input to your program, test for this before, not after, you use the input to compute. If it is incorrect, you won't do the computation. In other words, test the input first, and don't do the computation if the test shows invalid input.
- Indent if statements. Look at examples in the lessons or text - there are many.
- Much of your code will involve conditional execution with `if` and `if/else` statements. Part of your grade will come from using these statements appropriately. You may want to review chapter 3 of the textbook about nested `if/else` statements.

Submission Instructions

- Execute the program and copy/paste the output that is produced by your program into the bottom of the source code file, making it into a comment. I will run the programs myself to see the output.
- Make sure the run "matches" your source. If the run you submit could not have come from the source you submit, it will be graded as if you did not hand in a run.
- Use the Assignment Submission link to submit the source code file.
- Submit the following file:
 - BankTransaction.java
- Do not submit **.class** files.

Standard program header

Each programming assignment should have the following header, with italicized text, appropriately replaced.

```
/*
 * Class: CS1A
 * Description: (Give a brief description of Assignment 3)
 * Due date:
 * Name: (your name)
 * File name: BankTransaction.java
 */
```