Java Skill Exercise

Important Criteria

- Does the Java code provide an accurate and complete solution for the stated requirements?
- Are sound object-oriented principles used in the Java code?
- Are exceptions used to manage errors that can occur in the code?
- Do the JUnit tests provide adequate coverage of the Banking Portal functionality?

Scenario

You have been assigned to a development team that is building software that will be used to manage the accounts of a boutique bank client. The banking portal will limit the number of accounts managed. The portal must track information about all accounts so that it can report overall balance and how many new accounts can be added. The banking portal must provide publicly available methods to allow accounts to be added and removed from it (in which it updates its list). It must provide publicly available methods that report the maximum accounts under management, the remaining number of accounts that can added, and the total balance of all managed accounts. An attempt to add an account to the banking portal that has reached its limit should generate an exception to indicate an error condition. Also, an attempt to remove an account that is not in portal should generate an exception to indicate an error condition. Attempts to create an impossible account-portal should also generate exceptions. There are three distinct types of accounts: debit, savings and GIC's. Every account has an account number and a balance. A debit account has an annual fee which applies at the end of the calendar year and never earns interest. A savings account accrues interest (disregard compound interest for this exercise). A GIC has a term period (in months), interests and fees, which only apply at the end of the term.

Task

Define the Java classes that are required to implement the functionality that is described above. Be sure to use sound object-oriented principles in your Java code. Create JUnit tests to adequately test all the classes you create. Remember to write both positive and negative tests.