Technology Assessment

Exercise 1

- Low Level Design
- Software Development Practices
- Hands-on Programming

The Retail Store Discounts

Time: 45 minutes

On a retail website, the following discounts apply:
1. If the user is an employee of the store, he gets a 30% discount
2. If the user is an affiliate of the store, he gets a 10% discount
3. If the user has been a customer for over 2 years, he gets a 5% discount.
4. For every $100 on the bill, there would be a $ 5 discount (e.g. for $ 990, you get $ 45 as a discount).
5. The percentage based discounts do not apply on groceries.
6. A user can get only one of the percentage based discounts on a bill.

Write a program in a programming language of your choice with test cases such that given a bill, it finds the net payable amount. Please note the stress is on object oriented approach and test coverage. User interface is not required. What we care about:

Required Activities
- Object oriented programming approach, provide a high level UML class diagram of all the key classes in your solution. This can either be on paper or using a CASE tool
- Unit tests to achieve good code coverage, good use of Mocking
- Code to be generic and simple
- Leverage today's best coding practices
- Clear README.md that explains how the code and the test can be run and how the coverage reports can be generated

Bonus Activities
- Create scripts, e.g. Maven, etc. to:
  - build the project from the command-line
  - run static code analysis such as linting
  - run unit tests and code coverage
- SonarQube report for the code showing its quality summary

Create a GitHub repository, ensure the name is generic and doesn't have any company names. Commit your code to the GitHub repository and share the link with us.

Follow up Discussion

After completing the exercise please be ready for 15 minutes' discussion on your key decisions, assumptions and rationale for your implementation.