**Report: Implementation of a Simple Bank Management System**

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**1. Introduction**

This report details the design and implementation of a simple bank management system using Java. The system allows users to manage bank accounts by performing basic operations such as depositing money, withdrawing money, and checking the balance. The system employs fundamental Object-Oriented Programming (OOP) concepts including encapsulation, inheritance, and polymorphism.

#### 2. Requirements

1. **Account Class**:
   * Attributes: account number, account holder name, and balance.
   * Methods: deposit money, withdraw money, check balance, and getters and setters for each attribute.
2. **Bank Class**:
   * Manages a collection of Account objects.
   * Methods to add new accounts, view all accounts, and find an account by account number.
3. **Main Class**:
   * Tests the system by adding sample accounts, performing deposits and withdrawals, and displaying account details.

**3. Implementation**

**Account Class**:

* **Encapsulation**: Private attributes ensure data hiding, and public getter and setter methods provide controlled access.
* **Methods**: Deposit, withdraw, and check balance methods to perform operations on the account balance.

**Bank Class**:

* **Aggregation**: Manages a collection of Account objects using a list.
* **Methods**: Add account, view all accounts, and find account by account number.

**Main Class**:

* **Composition**: Uses Bank and Account classes to demonstrate the system’s functionality.
* **User Interaction**: Provides a simple command-line interface for testing the system

#### Conclusion

The simple bank management system implemented in Java demonstrates basic OOP concepts such as encapsulation, aggregation, and composition. The “Account” class encapsulates the details of a bank account, while the “Bank” class manages a collection of “Account” objects. The “Main” class provides a user interface to interact with the system, allowing users to perform basic banking operations. This system serves as a foundational example of how OOP principles can be applied to design and implement a functional application.