Task

Develop a Java application that simulates a **Simple Banking System.** Design 3NF DB design and class diagram for this system

1. Banking Operations:
   - Users can create an account (with account number, name, and initial balance).
   - Users can perform transactions like deposit and withdrawal.
   - Users can view transaction history, which will be logged to a file.
2. Error and Exception Handling:
   - When a user tries to withdraw more money than available, the InsufficientFundsException will be thrown.
   - If an invalid account number is entered, the InvalidAccountNumberException will be thrown.
   - Any file or database-related issues will be caught and handled using checked exceptions.
   - Any unexpected issues (like trying to operate on null account objects or illegal inputs) will be caught using unchecked exceptions.
3. Logs:
   - Each transaction will be logged in a file (transactions.log), and errors (such as invalid transactions) will also be logged in a separate error log (error.log).
4. Graceful Shutdown:
   - Regardless of exceptions, the system should gracefully close all open resources (e.g., file streams, database connections).

Marks Division

- Correct design of 3 NF DB design for the system (3)
- Correct implementation of 3 NF DB design for the system (3)
- Correct design of Class Diagram including relationships and multiplicity (2)
- Correct Implementation of OOP principles (5)
- Logging and Exception Handling (2)
- Complete working App (5)

Note: Cheating would result in straight 0 marks and report to discipline committee.