**FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS**

**Functional Requirements**

Customer Account Management

The system must allow new users to register by giving personal information such as first name, last name, address, and phone number. If the user wants a Cheque account, they must also provide employment details. Users must be able to log in securely using a username and password.

Account Creation

A user shall be able to open one or more accounts such as Savings, Investment, or Cheque.

* An investment account needs a starting deposit of at least **BWP 500.00**.
* A Cheque account can only be opened by someone who is working, and they must supply their employer’s name and address.
* A Savings account permits only deposits; withdrawals are not allowed.

Financial Transactions

The system must support deposits into any active account. Withdrawals are only allowed on Investment and Cheque accounts. Withdrawals must not exceed the available balance. Every transaction should record a timestamp, amount, transaction type, resulting balance, and link back to the account.

Interest Processing

Each month, the system should calculate and credit interest on Savings and Investment accounts using predetermined rates. Interest credits must appear in the account’s transaction history.

Account and Transaction History

The user must be able to see the current balance and the full transaction history for each of their accounts. The history should include deposits, withdrawals, and interest with dates, amounts, and updated balances.

**Non-functional requirements**

Security and Role Control

All actions that deal with financial data must require user authentication. Passwords shall be stored securely for example, using salted hashing. The system must enforce roles, distinguishing between ordinary customers and bank staff, so that only authorized users can perform staff-level operations.

Performance and Speed

Standard operations like login, viewing balances, depositing, and withdrawing funds should respond within two seconds under normal usage. Periodic tasks such as processing monthly interest should finish within an acceptable time frame during off-peak hours.

Uptime and Data Safety

The system should be operational at least 99% during business hours. Transaction data must be stored reliably with no data loss. The system should include backup and recovery mechanisms to restore operation quickly if something goes wrong.

Usability and User Experience

The interfaces used by both customers and staff should be user-friendly and easy to navigate. Common workflows, e.g. deposit or opening an account, should not take more than three essential steps. Error messages must be straightforward and helpful for example Withdrawals not allowed from Savings Account.

Audit, Logging and Maintainability

Any change to data must be logged, including who performed it, what was changed, and when. The system shall support generation of audit reports over chosen time periods. The codebase should follow object-oriented principles such as using inheritance, interfaces, modularity so that adding new features e.g. account types or updated rules is straightforward. Critical financial and security logic should have good test coverage (unit and integration tests).