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Assignment title: OOAD ASSIGNMENT-2025 PART-A

Date of submission: 9/19/2025

Programme of Study: COMPUTER SYSTEMS ENGENEERING

Year of Study: 2

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Date 9/19/2025

1. **Requirements Elicitation**

1.1. **Functional requirements**

1.1.1. **Account Creation** – The system will allow a registered customer to open one or more accounts (Savings, Investment, or Cheque) depending on the rules of each account type.

1.1.2. **Deposits** – The system will allow customers to deposit funds into any account they have and update the balance accordingly.

1.1.3. **Withdrawals** – The system will allow withdrawal from Investment and Cheque accounts only, but Savings accounts do not allow withdrawal.

1.1.4. **Interest Payment** – The system will compute and record monthly interest on accounts: 5% for Investment Accounts and 0.05% for Savings Accounts.

1.1.5. **Transaction History** – The system will maintain a transaction history (deposits, withdrawals, interest credits) for each account and allow customers to view it.

1.2. **Non-functional**

1.2.1. **Performance** – The system will complete average customer transactions (deposit, withdrawal, balance inquiry) in less than 2 seconds 95% of the time.

1.2.2. **Availability** – The system will be available 99.9% of the time every month, excluding scheduled maintenance.

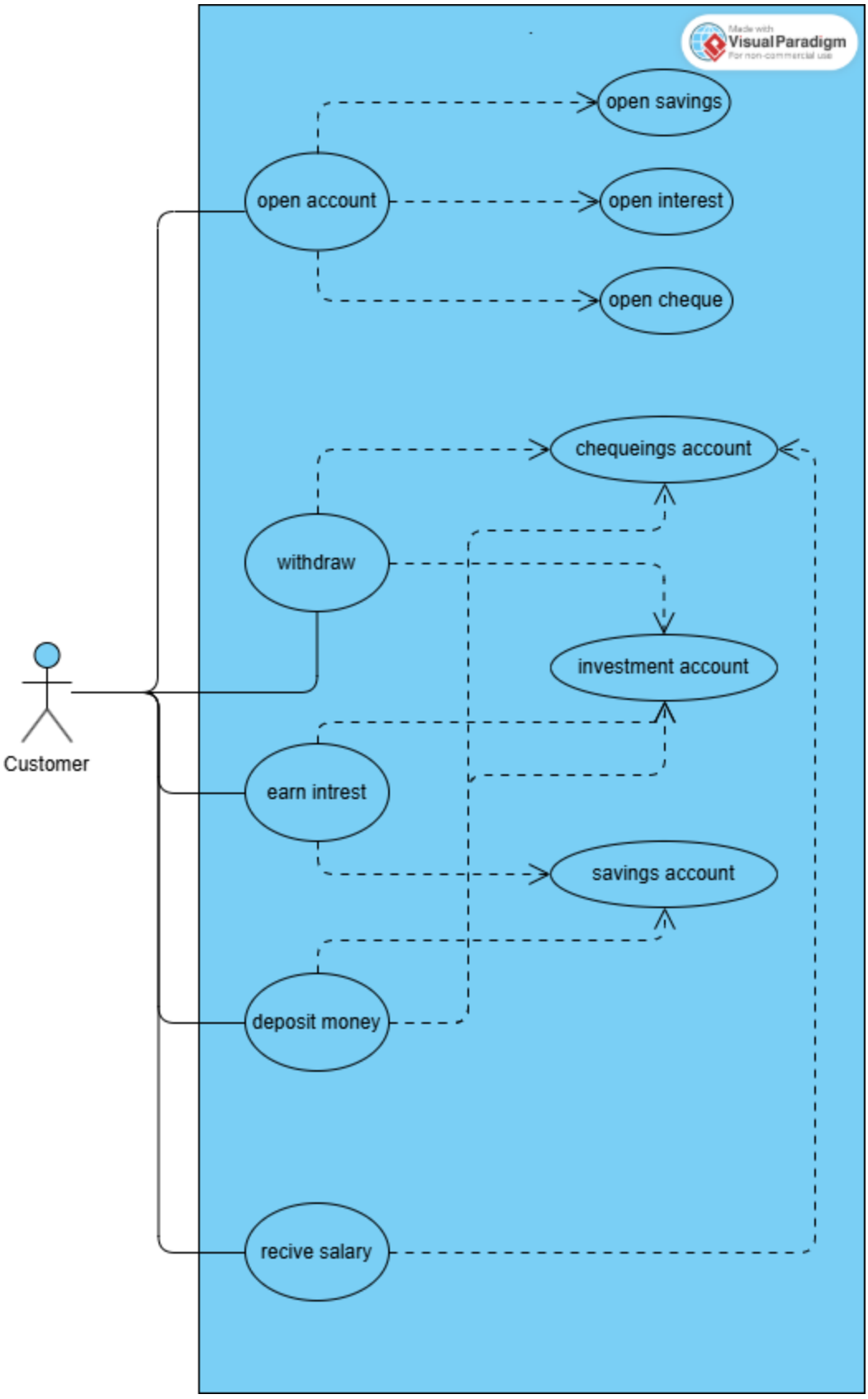
1.2.3. **Security** – The system will use TLS encryption for all data in transit and secure customer credentials using secure hashing.

1.2.4. **Usability** – The system will be user-friendly with an interface that is accessible through both web and mobile platforms.

1.2.5. **Data Retention & Auditability** – The system will retain customer transaction history and audit logs for at least 7 years.

2. **Structural UML Modelling**

2.1. **System Use Case Diagram**


Made with VisualParadigm
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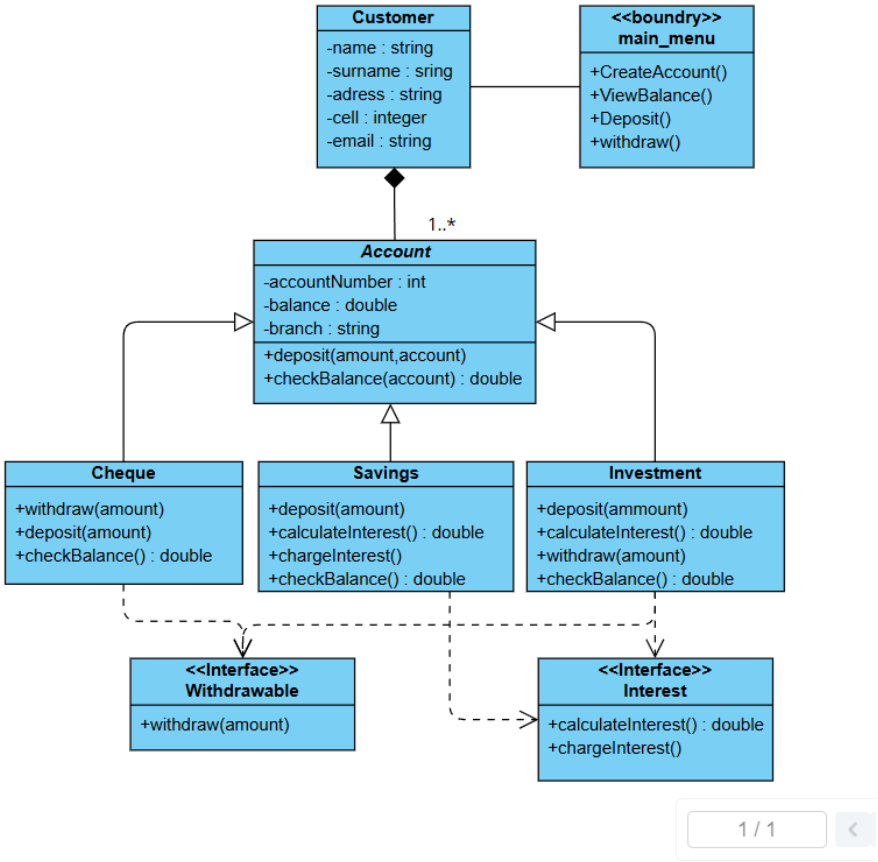
open savings
open account
open interest
open cheque
chequeings account
withdraw
investment account
Customer
earn intrest
savings account
deposit money
recive salary

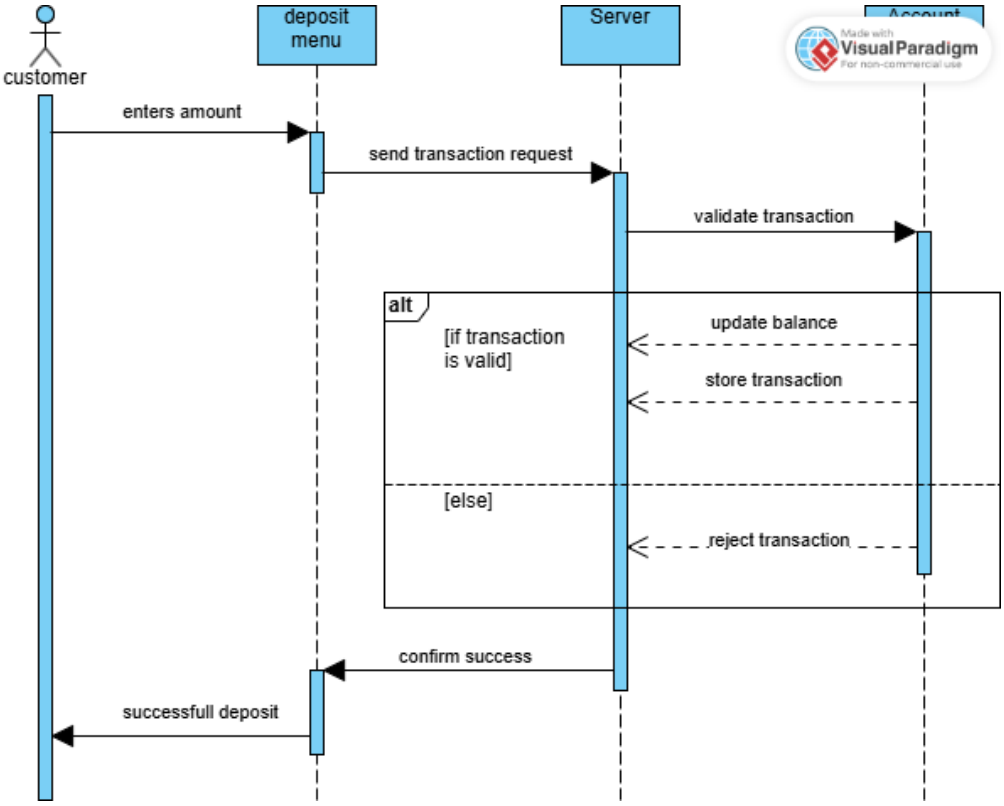
2.2. **Class diagram**



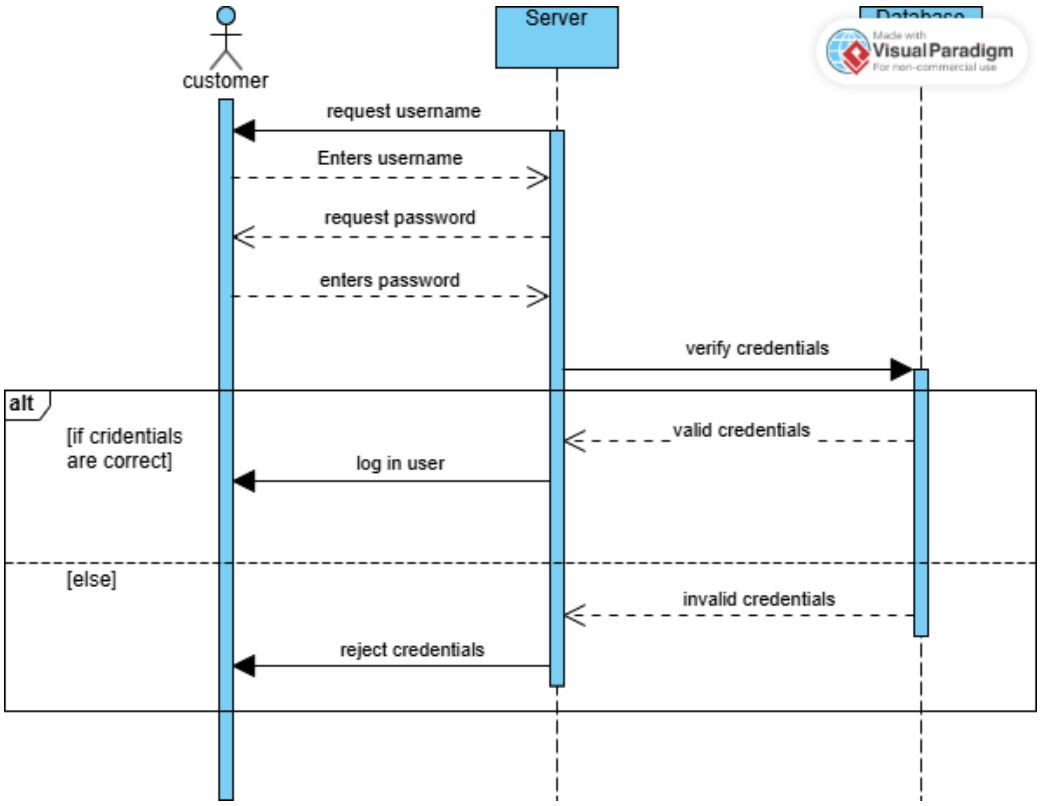
3. **Behavioural UML Modelling**

3.1. **Sequence Diagrams**

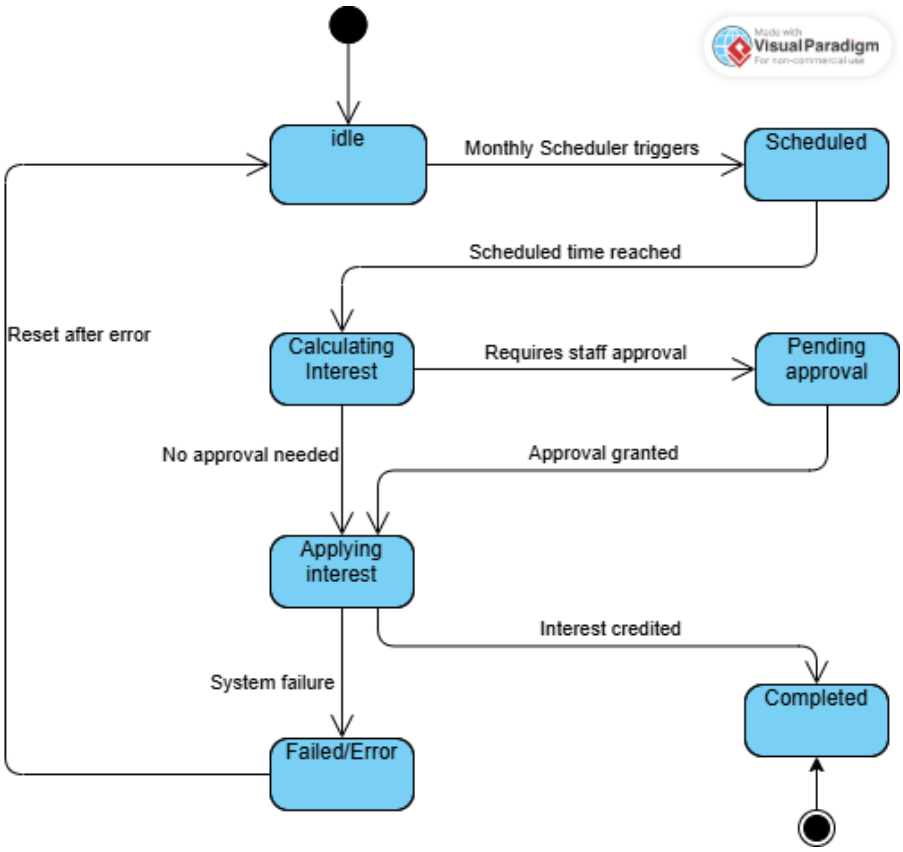
3.1.1. **Deposit Sequence Diagram**



3.1.2. **Login Sequence Diagram**



3.2. **State Diagram**


idle
Monthly Scheduler triggers
Scheduled
Scheduled time reached
Reset after error
Calculating Interest
Requires staff approval
Pending approval
No approval needed
Approval granted
Applying interest
Interest credited
System failure
Completed
Failed/Error