

COSC 31093 -Enterprise Software Design and Architecture

Course Project Assignment

PS/2021/111-L.M.I.K.THILAKASIRI

PS/2021/112-G.J.E.AMARASINGHE

PS/2021/121-S.D.HENDAWITHARANA

PS/2021/169-G.L.L.HANSAMALI

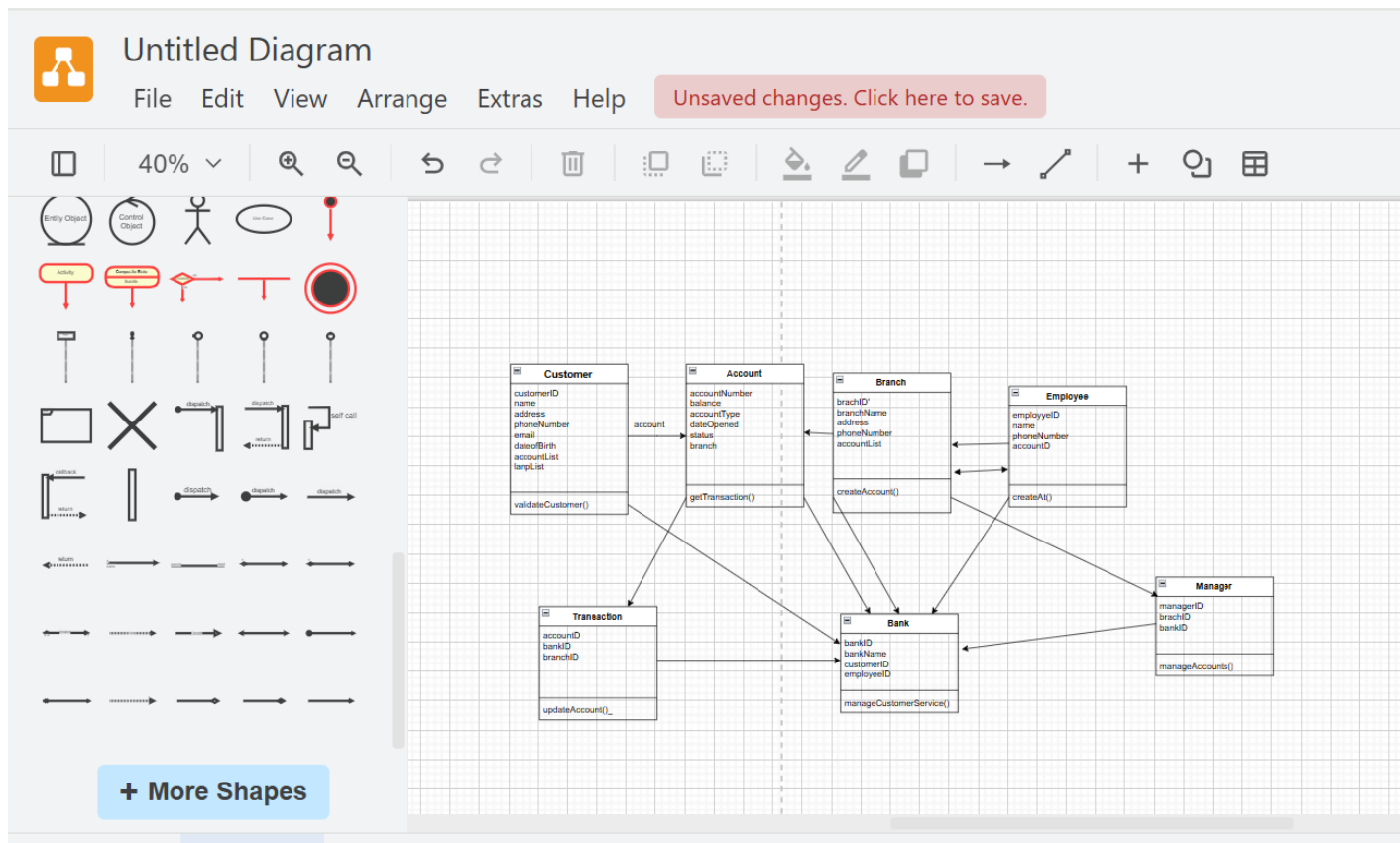
Project Proposal: Bank Management System

The purpose of the Bank Management System application is to streamline and automate the core banking operations such as managing customer accounts, processing transactions, handling loans, and monitoring branch operations. This application aims to enhance operational efficiency, minimize errors, and provide secure, real-time access to banking services.

Key features/modules include customer account management, transaction processing, loan approval and tracking, employee and branch management, and interest calculation. The system is designed for bank staff such as managers, clerks, and loan officers, as well as customers who can view and manage their accounts. UML diagrams have been created using Draw.io to visualize the system's structure and behavior.

Diagram Descriptions

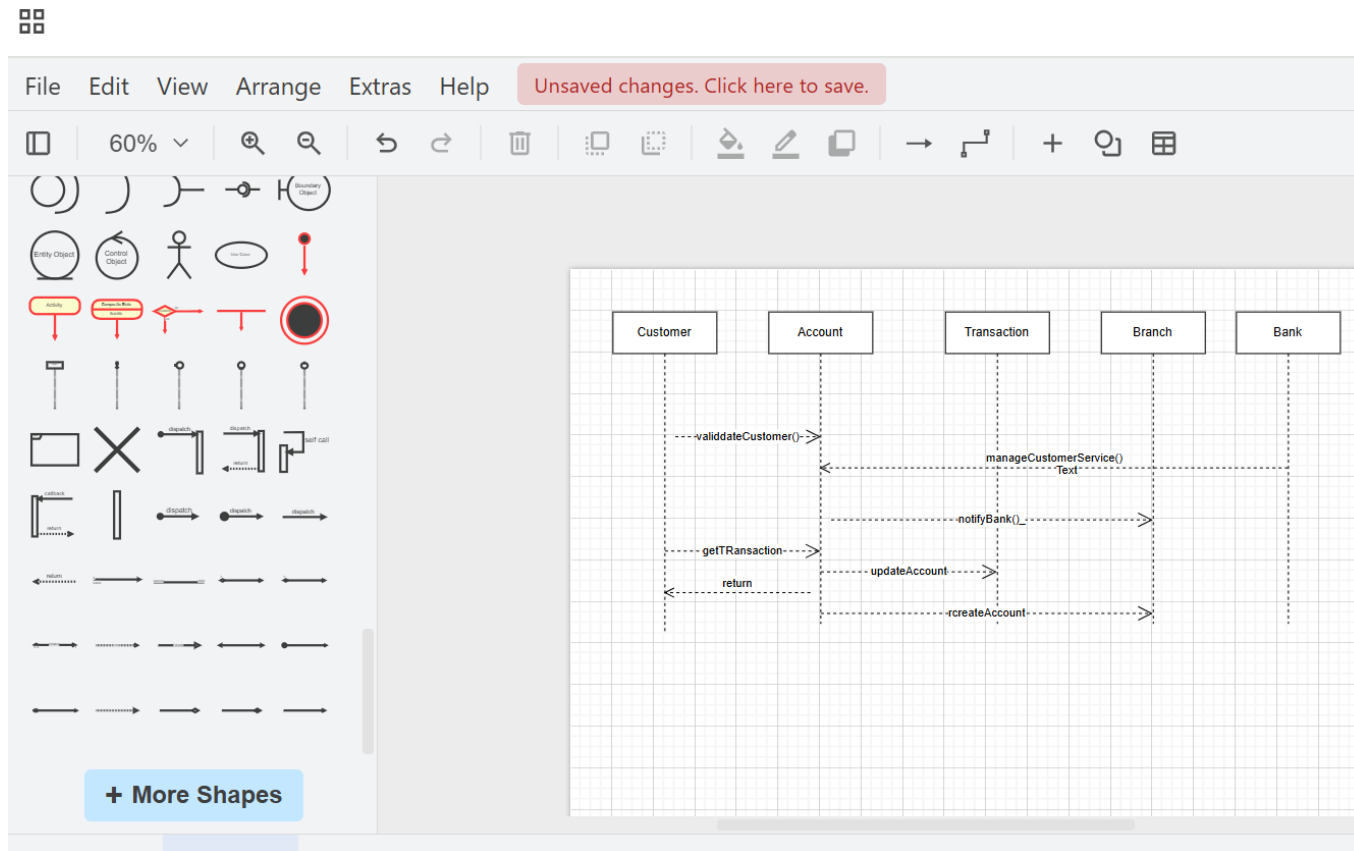
1. Class Diagram (Bank Management System)



This diagram illustrates the static structure of the system by showing classes such as Customer, Account, Transaction, Branch, and Employee. Each class includes attributes (customerID, accountNumber, interestRate) and methods (validateCustomer(), calculateFee()). Relationships between classes such as inheritance (Manager from Employee) and associations (Account belongs to Customer) define how components are interconnected.

2. Sequence Diagram (Bank Management System)

The sequence diagram depicts the dynamic interaction between objects over time. It shows how a Customer initiates account creation, how interest is applied to a savings account, and how a transaction is processed and assigned to an Employee. Further interactions involve Branches and the Manager for task execution, representing the typical flow of operations in the system



Key Services

- i)Customer Management
- ii)Transaction Processing
- iii) Account Management

RESTful API Endpoints

Endpoint URL	HTTP Method	Description	Technology used
/api/customers	GET	Retrieve all customers	Node.js, Postman, MySQL

/api/customers/{id}	GET	Retrieve customer by ID	Node.js, Postman, MySQL
/api/customers	POST	Register a new	Node.js, Postman, MySQL
/api/transaction	POST	Make a deposit or withdrawal	Node.js, Postman, MySQL
/api/accounts	POST	Create a bank account for a customer	Node.js, Postman, MySQL

