Bank Management and Credit Card Rewarding System
Milestone: Conceptual Model (EER and UML model)

Group 14

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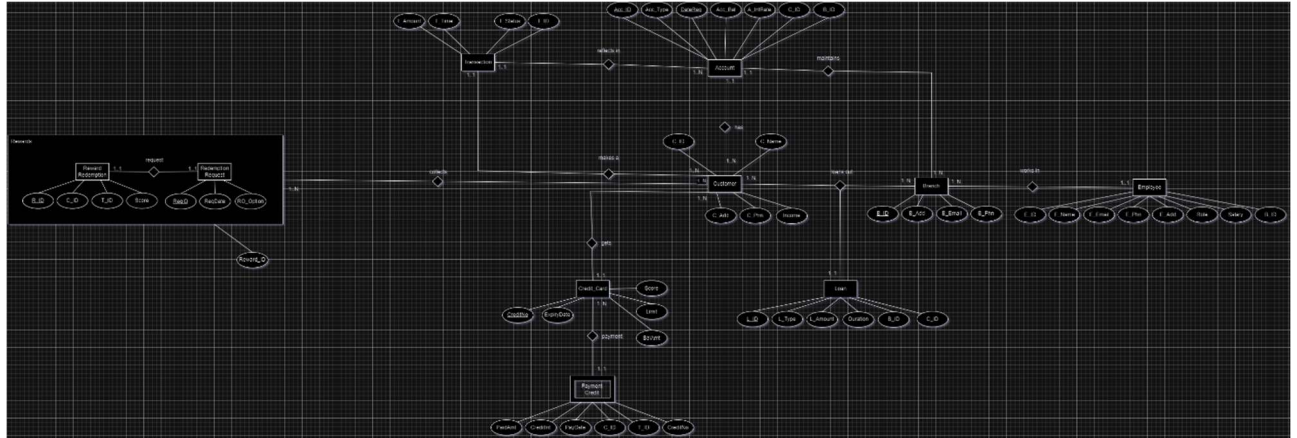
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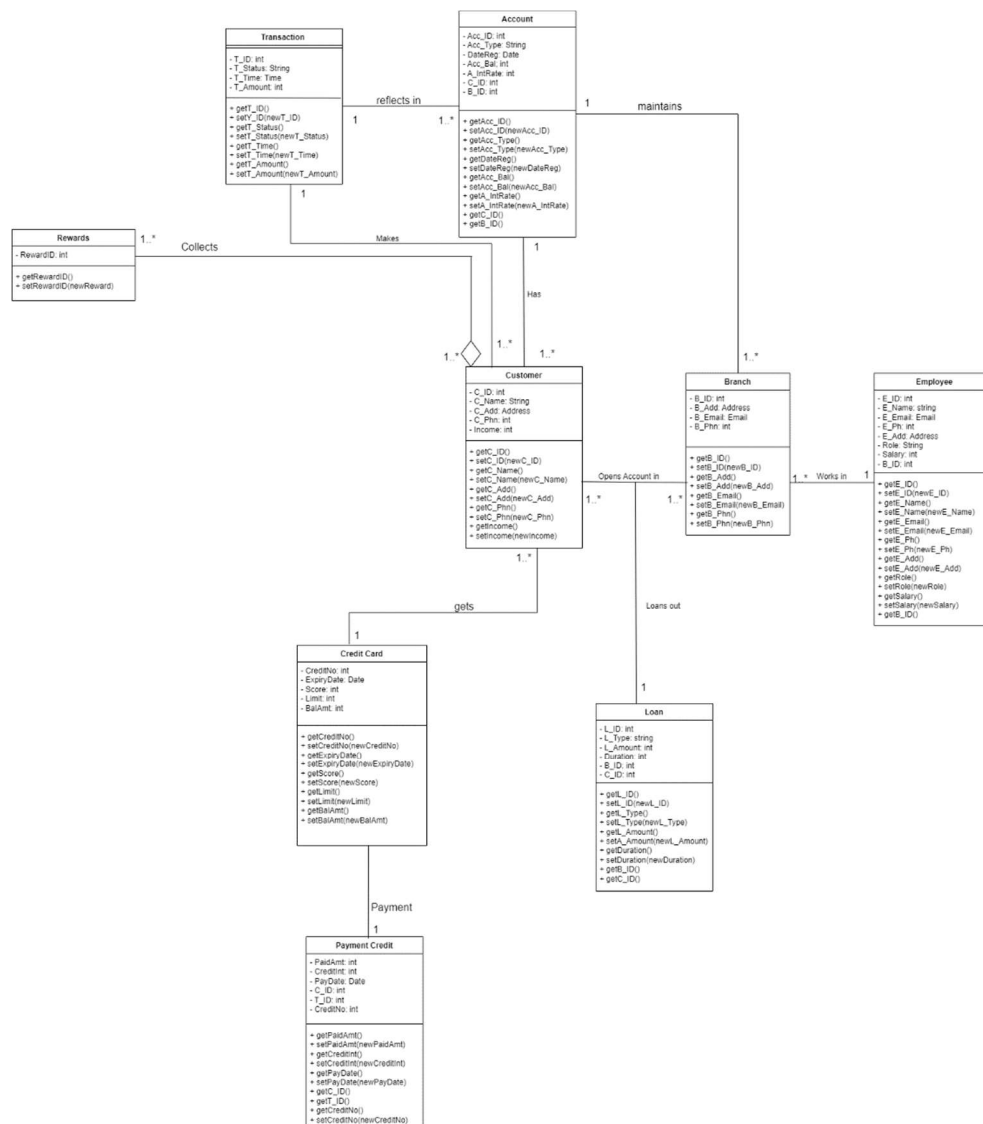
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Pramoth Guhan, Akshaya Murugan

EER Diagram:

UML Diagram:

Entities in the Bank Management and Credit Card Reward System

Customer:

Customers are the individuals or entities who hold accounts and engage in financial transactions with the bank. They play a central role in the bank's operations as they provide the basis for various services and products offered by the bank, such as loans, accounts, and credit cards. Customers information, including their demographics and financial status, is crucial for the bank to tailor its services and manage relationships effectively.

Attributes: C_ID, C_Name, C_Add, C_Phn, Income.

Branch:

Branches serve as physical locations where customers can conduct banking activities and interact with bank staff. They play a vital role in providing customer service, processing transactions, and offering financial products. Branches are responsible for managing customer accounts.

Attributes: B_ID, B_Add, B_Email, B_Phn.

Employee:

Employees are the workforce of the bank responsible for carrying out various tasks and providing services to customers. They fulfil different roles within the bank, such as customer service representatives, financial advisors, and managers. Employees are essential for ensuring smooth operations, maintaining customer satisfaction, and achieving the bank's objectives.

Attributes: E_ID, E_Name, E_Add, E_Phn, E_Email, Role, Salary.

Loan:

Loans are financial products offered by the bank to customers who need funds for specific purposes, such as purchasing a home, car, or financing business ventures. Loans play a crucial role in the bank's revenue generation and risk management, as they involve lending money to customers with the expectation of repayment over a defined period, along with interest.

Attributes: L_ID, L_Type, L_Amount, Duration.

Account:

Accounts are financial instruments provided by the bank that allow customers to deposit, withdraw, and manage their funds. Different types of accounts cater to varying needs, such as savings accounts for storing money and earning interest, checking accounts for daily transactions, and investment accounts for long-term wealth growth. Accounts are fundamental to the bank's operations and serve as the foundation for various financial services.

Attributes: Acc_ID, Acc_Type, DateReg, Acc_Bal, A_IntRate.

Transaction:

Transactions represent the exchange of funds or assets between customers and the bank. They encompass activities such as deposits, withdrawals, transfers, and payments. Transactions are essential for tracking financial activities, maintaining accurate account balances, and ensuring compliance with regulatory requirements.

Attributes: T_ID, T_Time, T_Status, T_Amount.

Credit Card:

Credit cards are financial tools issued by the bank that allow customers to make purchases on credit up to a predefined limit. They provide convenience and flexibility for consumers to shop, travel, and manage expenses. Credit cards play a significant role in the bank's revenue generation through interest charges, fees, and interchange income.

Attributes: CreditNo, ExpiryDate, Score, Limit, BalAmt.

Payment for Credits (Weak Entity):

Payment for Credits represents the transactions made by customers to settle their credit card balances. It includes payments towards outstanding balances, interest charges, and fees. Payment for Credits ensures timely repayment by customers and contributes to the bank's revenue stream from credit card operations.

Attributes: PaidAmt, CreditInt, PayDate, C_ID, T_ID, CreditNo.

Reward Redemption:

Reward Redemption involves customers redeeming points, rewards, or incentives earned through credit card usage. It allows customers to enjoy benefits such as cashback, travel rewards, or merchandise discounts. Reward Redemption and customer loyalty, encourages card usage, and strengthens the bank's credit card offering in a competitive market.

Attributes: R_ID, C_ID, T_ID, Score.

Redemption Request:

Redemption Request represents customers' requests to redeem their accumulated rewards or points for specific rewards or benefits. It serves as a mechanism for customers to access and utilize the rewards earned through their credit card transactions. Redemption Request facilitates customer engagement and satisfaction with the credit card rewarding system, driving retention and loyalty.

Attributes: ReqID, ReqDate, RO_Option.

Aggregations and Relationships:

Rewards:

- Reward Redemption & Redemption Request entities are related and can be aggregated together.
- Aggregated by Reward Aggregation: Streamlines reward-related activities.
- Key: Reward_ID

Conclusion:

The Bank Management and Credit Card Reward System comprises several entities interconnected to manage customer accounts, transactions, credit cards, loans, and rewards. The system enables efficient tracking of customer interactions, financial activities, and reward redemptions. Aggregations are used to simplify complex relationships, enhancing system usability and management. By structuring data around entities and their relationships, the system facilitates personalized customer experiences and effective reward program management.