***CPSC-6576-02: Database Design Admin SQL***

***Project Name: Banking Database System***

***Student Name: xxxxxxxx***

***Student ID: xxxxxxxx***

# Abstract

## Introduction:

The aim of this project is to maintain the customer information in a banking system. Banking is one of the most synchronized systems in the world. In this project, a customer can create an account in the bank and keep track of personal information such as balance. Both bank and customer can view bank details and customer details.

## Diagrammatic Representation:

Diagram

Description automatically generated

Entity**:** An entity is a thing that is either physical or logical.

Relationship: It describes how entities are correlated with each other.

The above entity relationship diagram describes the relationship between 4 entities.

|  |  |
| --- | --- |
| **Entity** | **Attributes** |
| Customer | CustomerID, CustomerName, Contact, BankID |
| Account | AccountID, CustomerID, AccountTypeID, AccountNo, Balance |
| Bank | BankID, BankName, Address |
| AccountType | AccountTypeID, AccountTypeName |

### RELATIONSHIP:

* Bank – Customer – One to Many (One bank can have many customers)
* Customer – Account – Many to Many (Many customers can have many accounts)
* Account – AccountType – One to One (One account can be of one account type)

## Schema

Normalized tables are the tables that have undergone data redundancy, unique entry in each table.

|  |  |  |  |
| --- | --- | --- | --- |
| Key with solid fillCustomer\_ID (PK) | Customer\_Name | Contact | Key outlineBankID(FK) |
| 123 | Manjusha | 789456123 | 101 |
| 456 | Ganesh | 456121378 | 102 |
| 789 | Nigam | 123456789 | 102 |
| 1011 | Nikhil | 147852369 | 103 |

**Table 1 CUSTOMER**

* Customer table contains four columns. They are: Customer\_ID, Customer\_Name, Contact, BankID.
* Customer\_ID is primary key(PK) which means it can be used to uniquely identify the table.
* BankID is foreign key(FK) which means it refers to the primary key of another table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Key with solid fillAccountID (PK) | Key outline CustomerID(FK) | Key outlineAccountTypeID(FK) | AccountNo | Balance |
| 321 | 123 | 1 | 567 | 1000 |
| 654 | 456 | 2 | 1566 | 1240 |
| 987 | 789 | 1 | 2565 | 1290 |
| 1101 | 1011 | 2 | 3123 | 5252 |

**Table 2 ACCOUNT**

* Account table contains five columns namely, AccountID, CustomerID, AccountType, AccountNo, Balance.
* AccountID is primary key(PK).
* CustomerID and AccountType are foreign keys(FK).

|  |  |
| --- | --- |
| Key with solid fillAccountTypeID(PK) | AccountTypeName |
| 1 | Saving |
| 2 | Current |

**Table 3 ACCOUNT TYPE**

* Account Type table contains two columns. Those are AccountTypeID, AccountTypeName.
* AccountTypeID is primary key(PK).

|  |  |  |
| --- | --- | --- |
| Key with solid fillBankID (PK) | BankName | Address |
| 101 | Bank of America | California |
| 102 | CITI | Illinois |
| 103 | Chase | Washington |

**Table 4 BANK**

* Bank table contains three columns, BankID, BankName, Address.
* BankID is primary key(PK).