**Project Team 2:**

**Team members:**

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**Mission Statement:** To build a database system for a banking enterprise that allows for mass storage of customer and internal company data, user authentication and integrity of the customer transactions while also helping provide customers with additional banking services like loan.

**Business Problem:**

As mentioned in our Mission Statement, we are trying to develop a bank’s database system that will allow the data analyst or the management to take a look at any customer’s transactions and account details while also monitoring their employees and their emails.

The key information that can be obtained from this database and which will be important for the banking officials will be:

* Understand ow many customers are there in our banking system
* Understand how many loans are currently given to our customers and what is the average interest rate of these loans
* Understand how many employees work at a particular branch OR how many employees on an average work at each branch of the bank
* Understand how many emails received by employees are read
* Understanding the average salary of employees at the bank.

We think that these pieces of information is key for the bank and their officials to know and thus the database is designed in a way that these details can be answered easily. This database design not only takes care of accounts of customers but also allows us to take a look at any loans that are taken by the customer and thus increases the services that the customer is accessible to.

**Key Design Decision:**

* Our most important design decision was to create a Relational database with no redundant data to make the database clean and take less space in the server.
* Core components like Accounts & Transactions can be identified as they share an identifying relationship. Other extra entities all share a non-identifying entity allowing us to use the core details about the accounts without merging too many databases.

**Entities and their Relation:**

The main entities in our database are:

1. **Accounts**:   
   This entity stores details about the account such as Account ID (which is the primary key for the entity), which branch it is associated with, Customer ID, Balance, status etc. This entity has an identifying relation with Transactions and non-identifying relationship with Account Types, Customers and Bank Branches
2. **Transactions**:   
   This entity records all transactions occurring in the banking system. It will have a primary key of Account ID and have a identifying relation with Accounts. This entity will contain details such as Date of transaction, Transaction Type, Loan ID, Transaction ID and Account ID
3. **Employees**:   
   This entity will contain details about all Employees at the Bank. With a primary key of Employee ID this entity contains details about each employee such as Branch ID, Title, Manager, Salary, Person ID, Email ID
4. **Loans**:   
   This entity keeps records of any loan that their customers have. This is characterized with a primary key of Loan ID and contains details like start date, tenure and rate of interest.
5. **Customers**:   
   This entity is used to keep records of each customer in the banking system. Has a primary key of Customer ID and also contains Person ID, Company ID and Customer type.
6. **Companies**:   
   Companies is the entity that contains the details of the companies any customer is associated with. Columns such as Company name, Phone, Email and a primary key of Company ID can be found in this entity.
7. **Persons**:   
   This is the master list of all people in the bank’s database. This includes details about employees and customers with a primary key of Person ID. It contains details like Name, Address, Email, Phone and Mobile numbers.
8. **Account Type:**   
   This entity defines details about the Account type for a customer like the interest rate, Description and Account ID.
9. **Transaction type:**   
   This entity stores all the types of transactions that can be made using the bank’s system.
10. **Bank Branch**:   
    Details about bank branches are kept in this entity such as Name of the branch, country, city and manager ID with a primary key of Branch ID that allows us to define a non-identifying relation with Accounts.
11. **Email Tracking**:   
    This entity helps us to keep a track of all emails sent by the bank’s employees. It contains the Email ID, Employee ID who sent it, the send and receive ID as well as a flag saying if the email was read or not.
12. **Email**:   
    This is the entity containing all the emails. This can be uniquely identified using Email ID, Send ID and Receive ID. It contains details like Title of the email and Body of the email
13. **Departments**:   
    Department entity contains the name of the department and the head of that department. This has a non-identifying relation with Employees using Department ID
14. **Job Title:** Job title contains details about the bank’s employees job details like Title name and description of the title. This has a non-identifying relation with Employees entity using the Title ID column.