

# General Report

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## Credit

This project was done by:

1. Khaled Abdelreaheam - 20217004
  2. Amr Gamal - 20217007
  3. Doha Sami - 20216054
  4. Meral Mostafa - 20217012
  5. Toka Abdelghafar - 20218003
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## Programming Language

This project was developed using **Python 3.11** for its versatility and wide range of applications. The **Eel** library was employed to develop the Graphical User Interface (GUI), incorporating **HTML**, **CSS**, **JS**, and **TailwindCSS** for a modern and responsive design. Additionally, **Matplotlib** was used to generate reports. The app uses an Azure database so no configuration is needed for the Database part, just installing the ODBC drivers. The Connection doesn't commit the changes by intention, the DB "resets" when the program restarts.

## Bank Management App

Overview

Request Loan

Open an Account

Send Money

Account

Logout

### Overview

#### Accounts:

1 : Bank A

Savings

Delete

\$1000

2 : Bank A

Checking

Delete

\$5000

#### Loans:

1: Bank A

Approved

\$10000.00

2: Bank A

Pending

\$200000.00

The following pip packages are required to run this project:

- matplotlib for reports

## Bank Management App

Overview

Banks

Branches

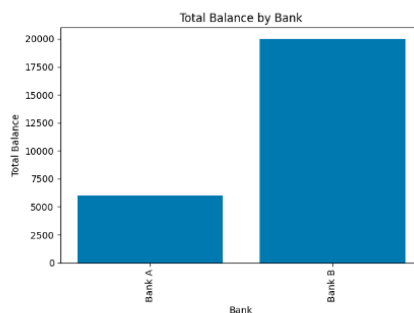
Customers

Loans

Employees

Logout

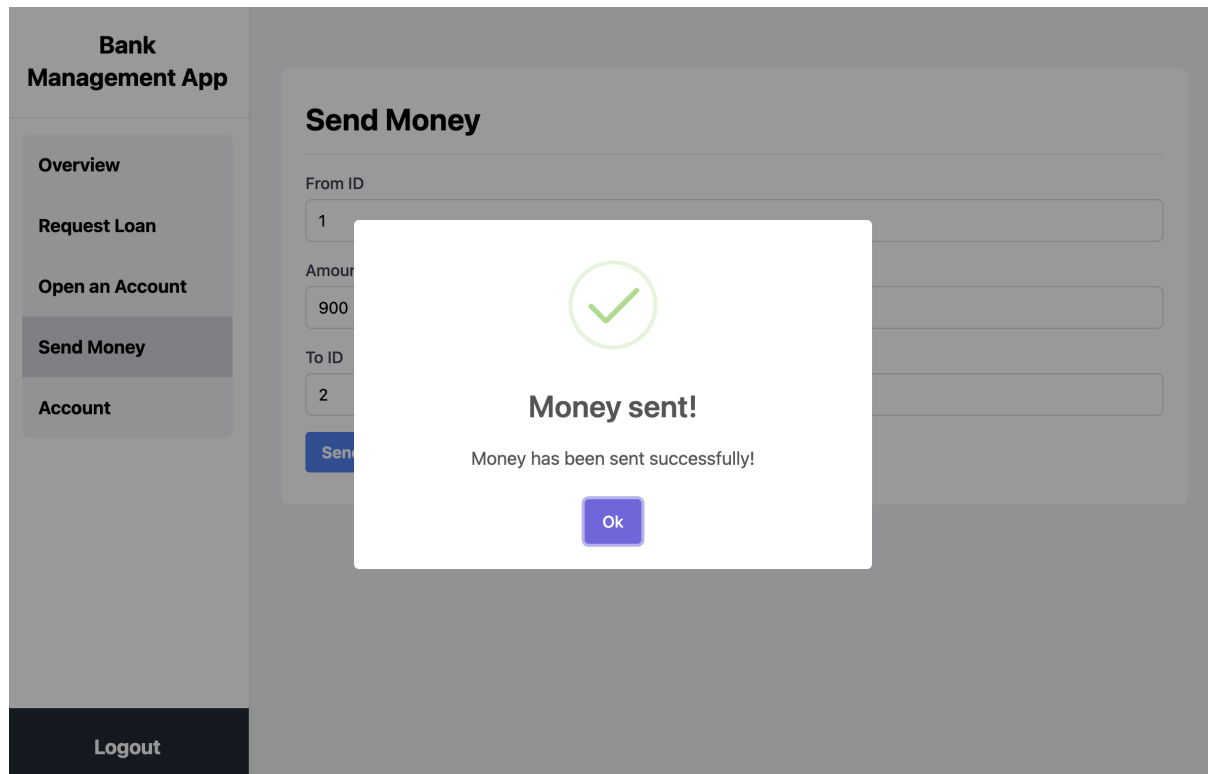
### Overview



- eel (for the GUI)

- pyinstaller (to make the exe)
- pyodbc (to communicate with the database)

Furthermore, the project relies on the inclusion of **ODBC drivers** (included) to operate correctly. They must be installed.

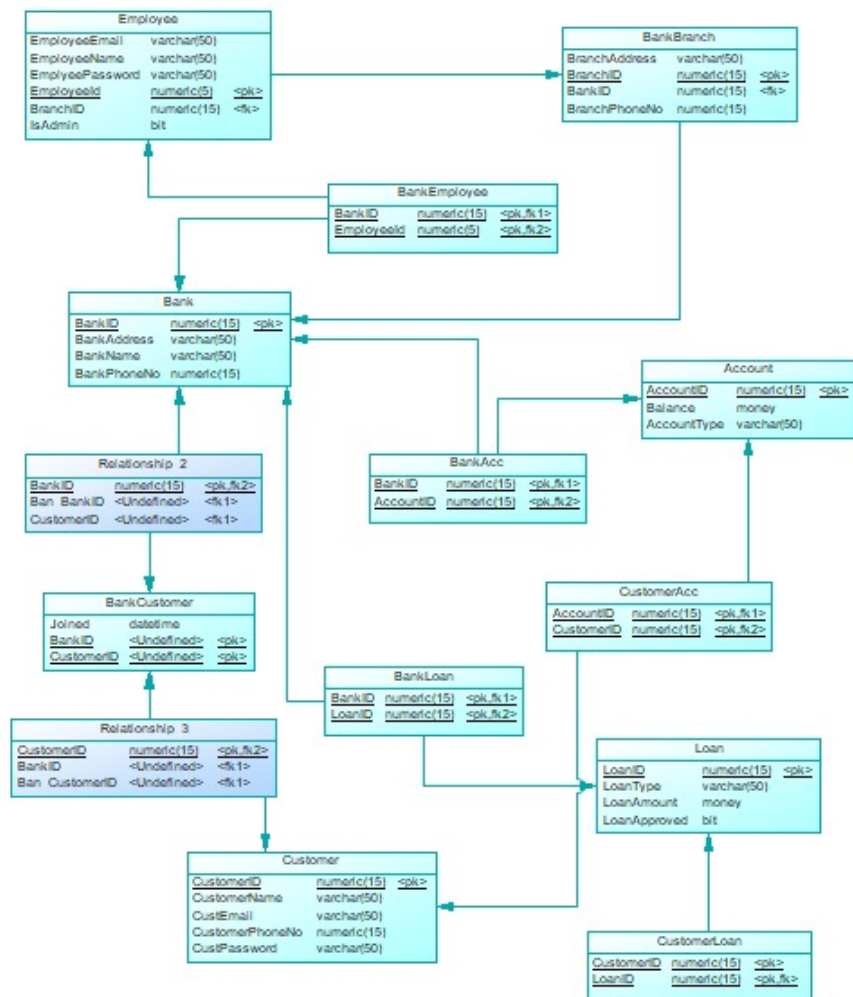


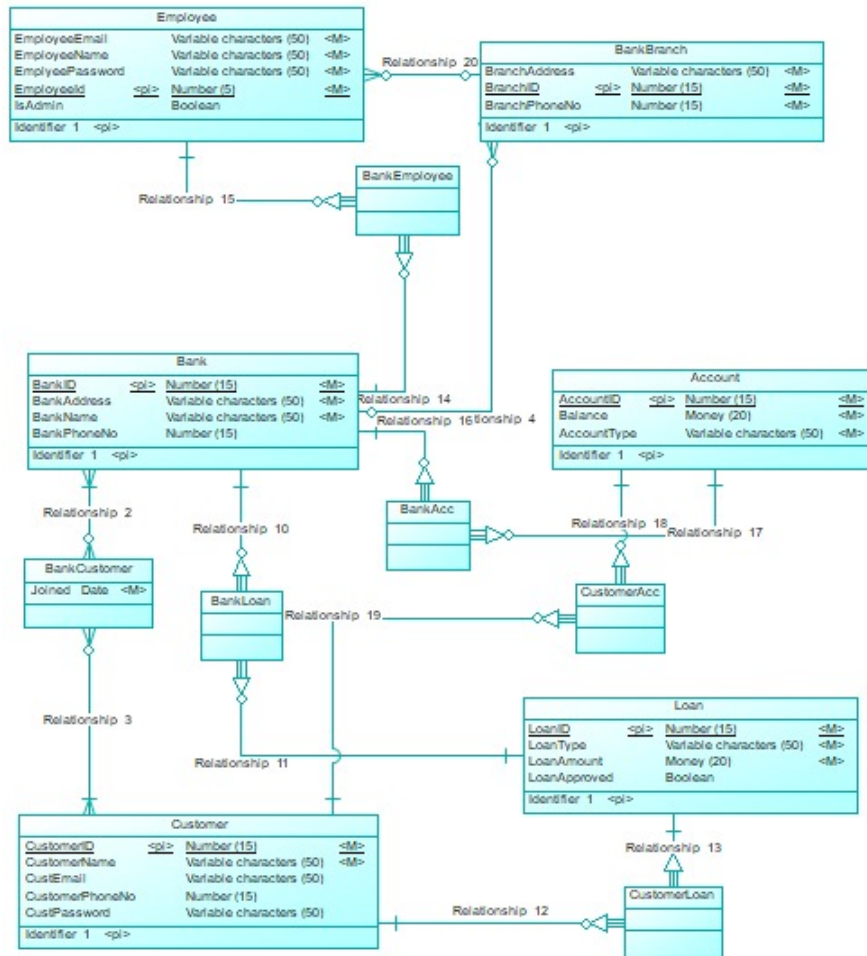
## SQL

The user provided a database schema with several tables: ACCOUNT, BANK, BANKACC, BANKBRANCH, BANKCUSTOMER, BANKEMPLOYEE, BANKLOAN, CUSTOMER, CUSTOMERACC, CUSTOMERLOAN, EMPLOYEE, LOAN, RELATIONSHIP\_2, and RELATIONSHIP\_3.

The schema contains several weak entities which rely on other entities to exist. There are also many-to-many relationships.

The schema applies 2NF and 3NF normalization to ensure that each table has a primary key and that there are no repeating groups or transitive dependencies.





## Functionality

The system offers a wide range of features for both users and admins to manage their banking activities. Here is a breakdown of the system's functionality:

### User Functionality

1. **View Loans and Accounts:** Users can see their loans and their statuses, their accounts, and the associated banks. This feature provides a comprehensive overview of the user's financial status.
2. **Update Personal Information:** Users can update their personal details such as name, address, contact information, etc. This feature adds a layer of convenience for users and ensures their information is always up-to-date.
3. **Send Money:** Users can send money to other users within the system. This function enables quick and easy money transfer between users.

4. **Open an Account:** Users can open a new account within the system. This feature is useful for users who require multiple accounts for various purposes.
5. **Request a Loan:** Users can request a loan within the system. This feature simplifies the loan application process and allows users to monitor the status of their loan request.
6. **Delete an Account:** Users can delete an account within the system. This feature enables users to close accounts that are no longer required.

## Admin Functionality

1. **Add Banks and Branches:** Admins can add new banks and branches to the system. This feature enables the system to expand and include new financial institutions.
2. **Add Users:** Admins can add new users to the system. This function is useful for admins who need to create accounts on behalf of users or add additional users to the system.
3. **View Reports:** Admins can view reports within the system. This feature provides valuable insights into the system's performance.
4. **Accept/Deny Loans:** Admins can approve or reject loan applications within the system. This feature enables admins to manage the loan application process effectively.
5. **Add Employees/Admins:** Admins can add new employees or admins to the system. This feature enables the system to expand and include new team members.

The system's features are designed to provide users and admins with a comprehensive banking experience. Users can easily manage their finances, while admins can effectively manage the system's operations and performance.

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