**Bank Management System: Project Overview**

**Objective:**

The goal of this project is to create a bank management system where users can manage their bank accounts, perform transactions, and keep track of their finances. With the use of Python for frontend development and MySQL for backend database management, this project aims to be an efficient and user-friendly platform for both bank employees and account holders.

**Requirements:**

**Software:**

1. **Python (Latest Version)**: The primary programming language that will drive the frontend logic and the interaction with the backend.
2. **Visual Studio Code**: A lightweight and powerful code editor that will assist in writing, debugging, and running the Python code.
3. **MySQL**: A relational database management system for storing, retrieving, and managing user data and transaction records.
4. **Python MySQL Connector**: A library that facilitates the connection between Python and MySQL, enabling seamless data exchange.

**Modules:**

For the Python code, the following modules will be used:

1. **datetime**: To manage and manipulate date-time data, helping in recording timestamps of transactions, account creation, etc.
2. **mysql.connector**: To establish a connection between the Python code and the MySQL database, enabling CRUD (Create, Read, Update, Delete) operations.

**Architecture:**

**Frontend (Python):**

The frontend will be developed using Python, which will offer the following features:

1. **User Authentication**: Registration, Login, and Logout functionalities for both bank employees and account holders.
2. **Account Management**: Options to open a new bank account, close an existing account, or update account details.
3. **Transaction Management**: Capability to deposit, withdraw, and transfer money between accounts, with all transactions timestamped using the **datetime** module.
4. **Balance Inquiry**: Allows users to check their current account balance.
5. **Transaction History**: Provides users with a list of their recent transactions.

**Backend (MySQL):**

The MySQL database will contain tables and relationships to support the following:

1. **User Details**: Information about both bank employees and account holders including credentials for authentication.
2. **Account Details**: Data related to the bank accounts such as account number, type, balance, etc.
3. **Transaction Records**: Logs of all transactions, including details like amount, transaction type, timestamp, involved accounts, etc.

**Conclusion:**

The Bank Management System is an integral project for a second-year computer science student as it encompasses the use of both programming logic and database management. It gives an insight into real-world applications and the challenges faced in managing and manipulating vast amounts of data in real-time. As students progress through the project, they'll grasp the essentials of system design, data integrity, and user experience, all of which are crucial in the modern IT landscape.

Top of Form