CS355 – Database Project Proposal Form

Section 1: Metadata

to be filled by the student

1.1. Project Information to be filled by the student

Title: Data Banking	
Section: L1	Instructor: Maria Samad

1.2. Student(s) Information

Name: Humayun Shaikh	ID: hs09949
Section: L1	Batch: 2028

Name: Aquib Ansari	ID: aa06586
Section: L1	Batch: 2028

Name: Shayan Raza	ID: sr09214
Section: L1	Batch: 2027

Submission guideline: Save your project proposal as a pdf file and rename as Project Proposal_L1_ProposedTitle where L1 is to be replaced with your section

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Section 2: The Project

to be filled by the student

2.1. Project Description: *Please provide a brief introduction of the project including its scope.*

The proposed project is a simple **Bank Management System** built as a desktop application using **Python (PyQt6 for UI)** and **SQL Server** as the backend.

The system will have two roles:

- **User (Customer)** – can register, log in, and perform basic banking operations (view account, deposit, withdraw, transfer).
- **Admin (Bank Staff)** – can manage user accounts, approve transactions, and generate summaries.

The scope will be **limited to essential banking operations** so the project remains manageable. The project will include **major transactions** (money transfer between accounts, which involves updating multiple tables: accounts, transactions, and logs) along with some **minor CRUD operations** (account creation, update user info, delete user, etc.).

2.2 Functional Requirements

This section describes each function/feature provided by your system. These functions are logically grouped into modules based on their purposes. The users in your system must be categorized such as client, customer or administrator etc. These users will be accessing the database with the level of access that they are authorized with.

Module 1: User Management

- **Function 1: Register User** – Users can create an account with details (Name, Email, Password). The system stores information in the `Users` table and initializes an `Account` entry.
- **Function 2: User Login** – Registered users log in with credentials to access account functions.
- **Function 3: Admin Login** – Admins log in separately with higher privileges.

Module 2: Banking Transactions

- **Function 1: Deposit Money (Minor Transaction)** – User deposits money, which updates their `Account Balance` and creates a record in the `Transactions` table.
- **Function 2: Withdraw Money (Minor Transaction)** – User withdraws funds if sufficient balance exists. Both `Account` and `Transactions` are updated.
- **Function 3: Transfer Money (Major Transaction)** – User transfers money from one account to another. This transaction updates:
    - **Source Account** balance (deducted)
    - **Destination Account** balance (credited)
    - **Transaction Logs Table** (record of transfer)

Module 3: Admin Functions

- **Function 1: View All Users** – Admin can view a list of all registered users.
- **Function 2: Delete/Deactivate User** – Admin can remove inactive or fraudulent accounts.
- **Function 3: Approve/Monitor Transactions** – Admin can see transaction logs for auditing.

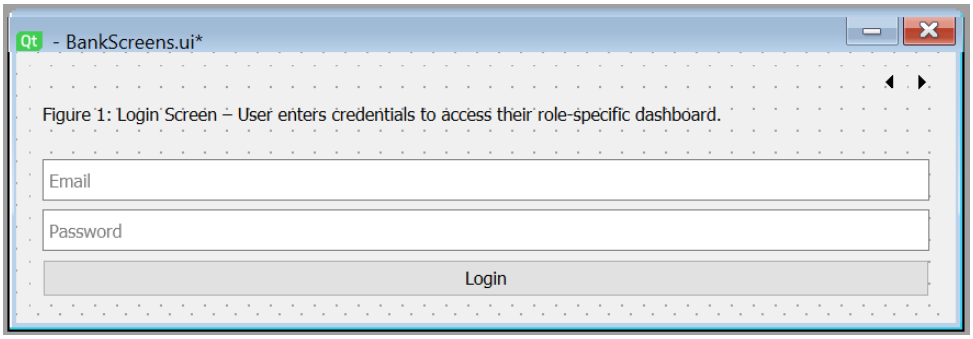
2.3. Planned Schedule: *Kindly list the start/end dates and the timeline for the achievement of any intermediate milestones and the expected contribution to be made by the participant(s).*

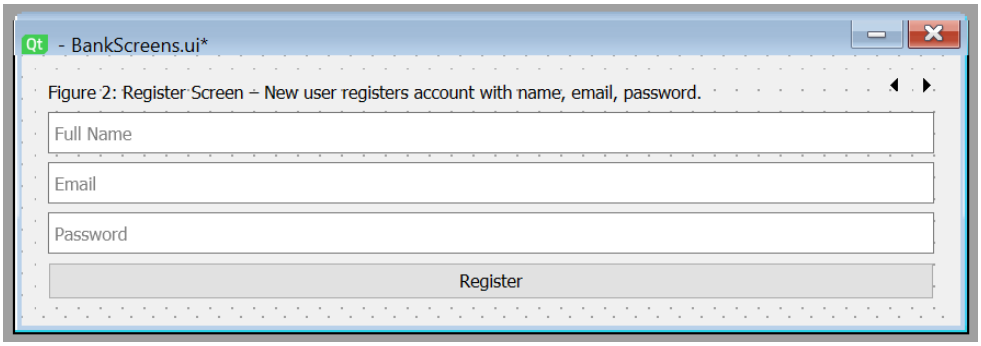
Milestone	Deadline	Details
Project ERD	October 15, 2025	Submission of the Entity–Relationship Diagram (ERD) for database design.
Interim Demo	November 15, 2025	Present most of the work: completed database creation linked with key screens.
Final Presentation	November 27, 2025	Deliver final working application with all planned features and documentation.

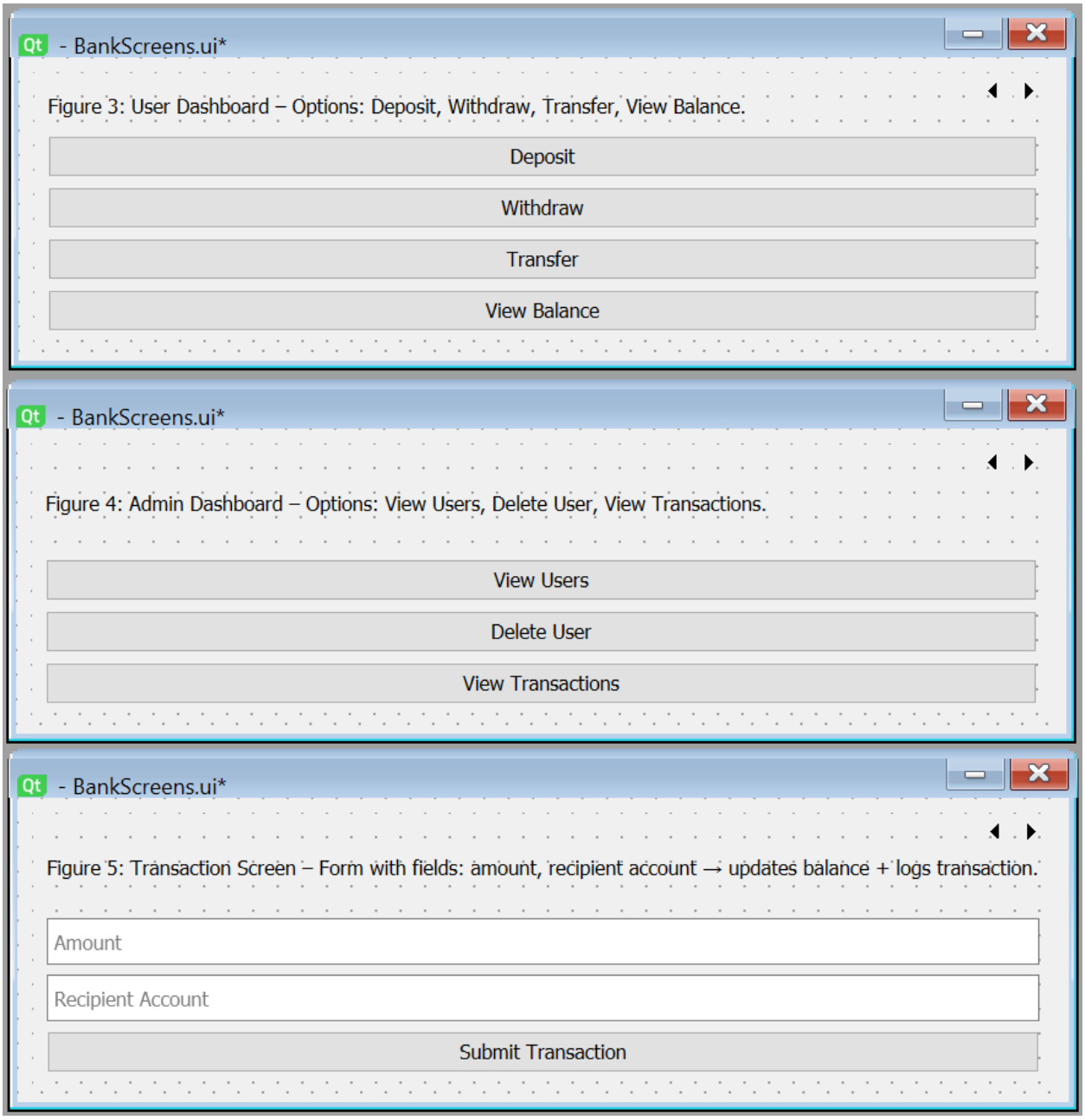
2.4. Technology Stack: *If you are utilizing any language or database besides PyQt and SQL Server, please complete this section; otherwise, leave it blank. Specify the programming language and database management system intended for constructing this application, as well as the application type (Desktop, Web, or Mobile).*

- **Programming Language**: Python
- **UI Framework**: PyQt6 + Qt Designer
- **Database**: SQL Server
- **Application Type**: Desktop

2.5. Screens: *Provide images of all application screens, showcasing clear input and corresponding outputs. Ensure each image includes a concise caption explaining user action and expected/observed output. You can create these screens using Qt Designer.*






Qt - BankScreens.ui*
Figure 3: User Dashboard – Options: Deposit, Withdraw, Transfer, View Balance.
Deposit
Withdraw
Transfer
View Balance
Qt - BankScreens.ui*
Figure 4: Admin Dashboard – Options: View Users, Delete User, View Transactions.
View Users
Delete User
View Transactions
Qt - BankScreens.ui*
Figure 5: Transaction Screen – Form with fields: amount, recipient account → updates balance + logs transaction.
Amount
Recipient Account
Submit Transaction