Banking Web Application Case Study

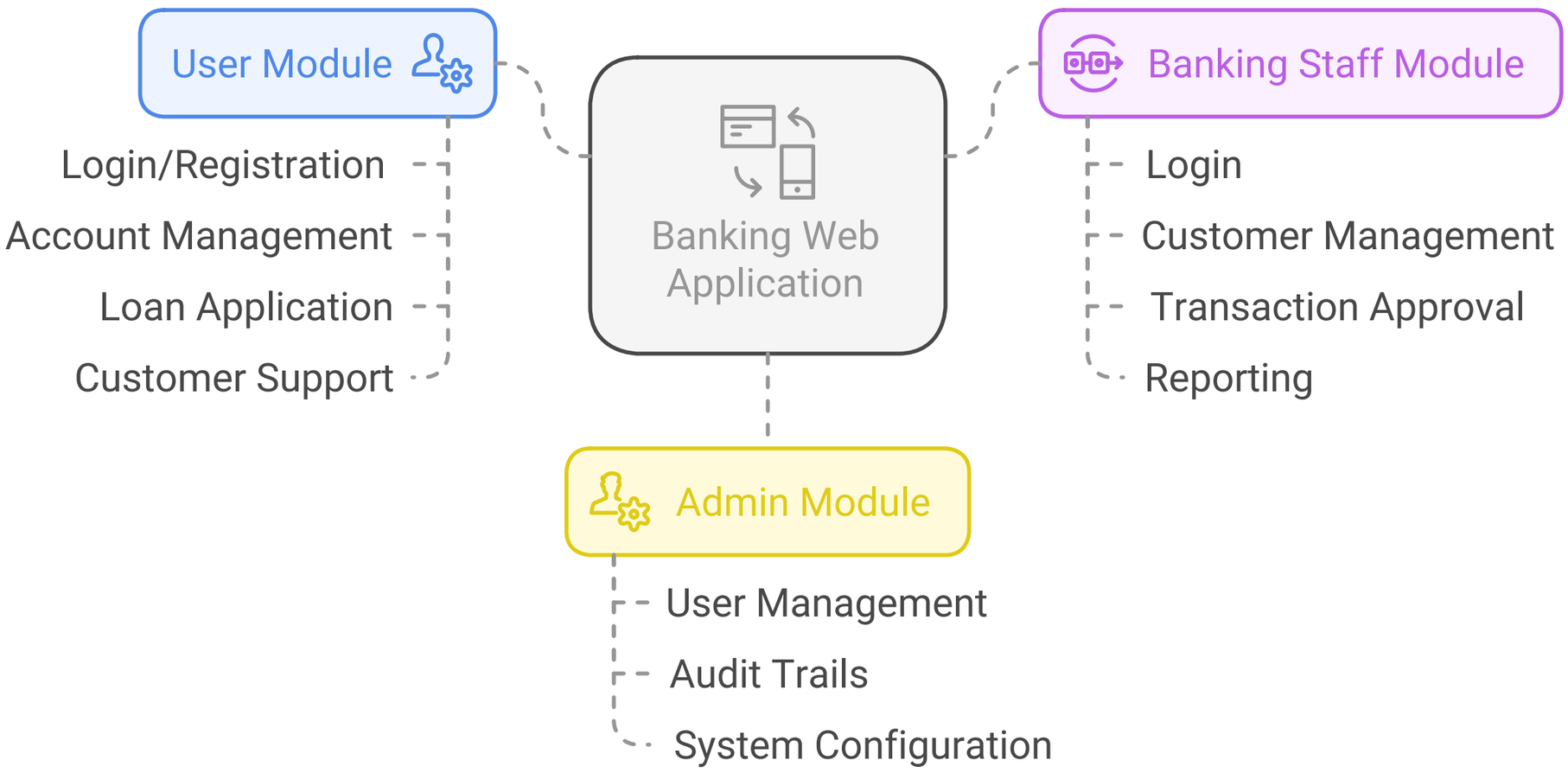
This document presents a comprehensive overview of the development of a robust web application for a bank, aimed at streamlining operations such as account management, loan processing, and customer support. The application is designed to enhance customer satisfaction, ensure secure transactions, and improve operational efficiency through modern technological solutions. The document includes use case diagrams, flow diagrams, and entity-relationship (ER) diagrams that illustrate the various modules and functionalities of the application.

Use Case Diagram

The use case diagram outlines the interactions between users and the system. Below are the primary actors and their respective use cases:

- **Actors:**
    - User
    - Banking Staff
    - Admin

- **Use Cases:**
    - User Module:
        - Login/Registration
        - Account Management
        - Loan Application
        - Customer Support
    - Banking Staff Module:
        - Login
        - Customer Management
        - Transaction Approval
        - Reporting
    - Admin Module:
        - User Management
        - Audit Trails
        - System Configuration

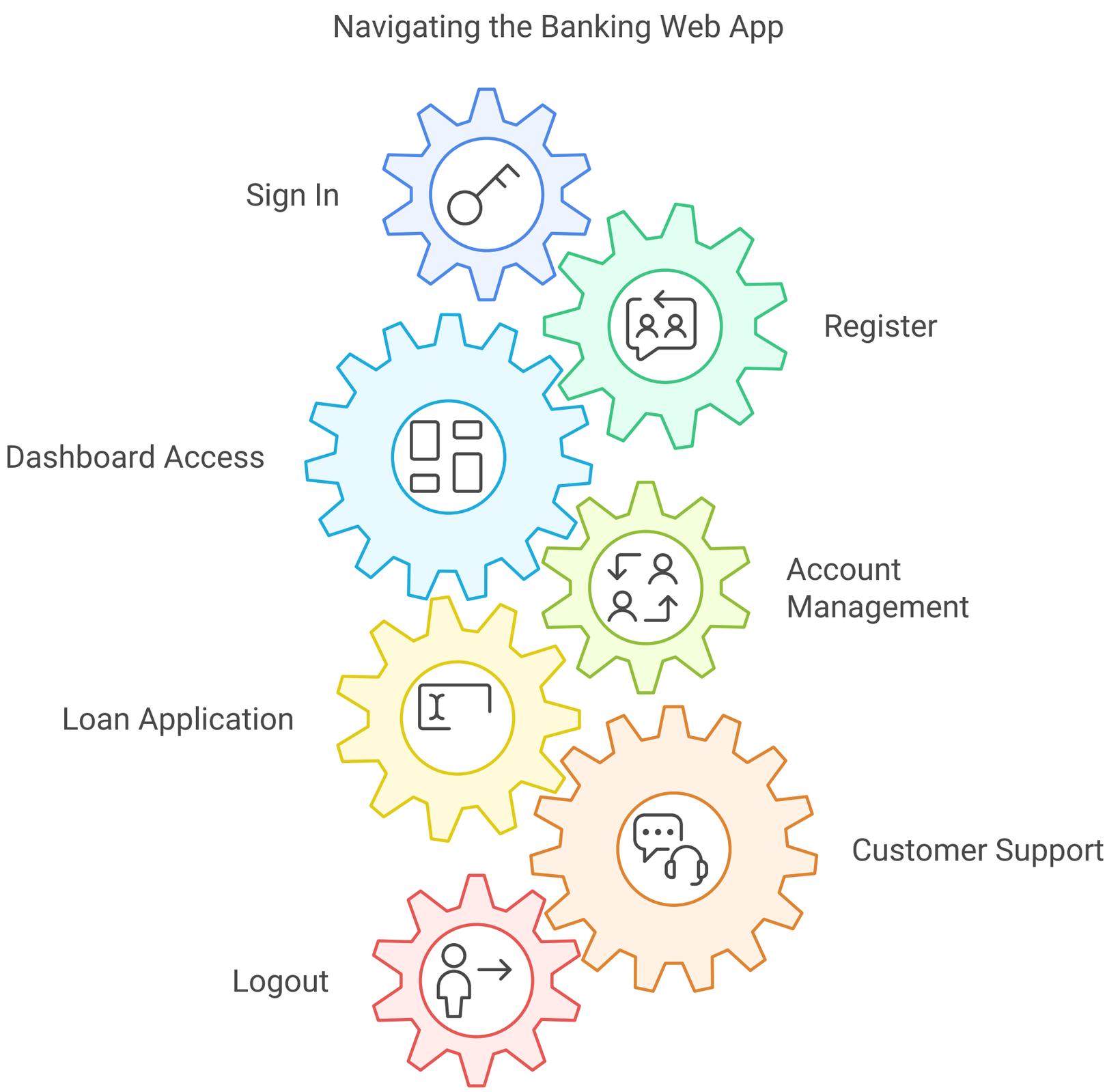


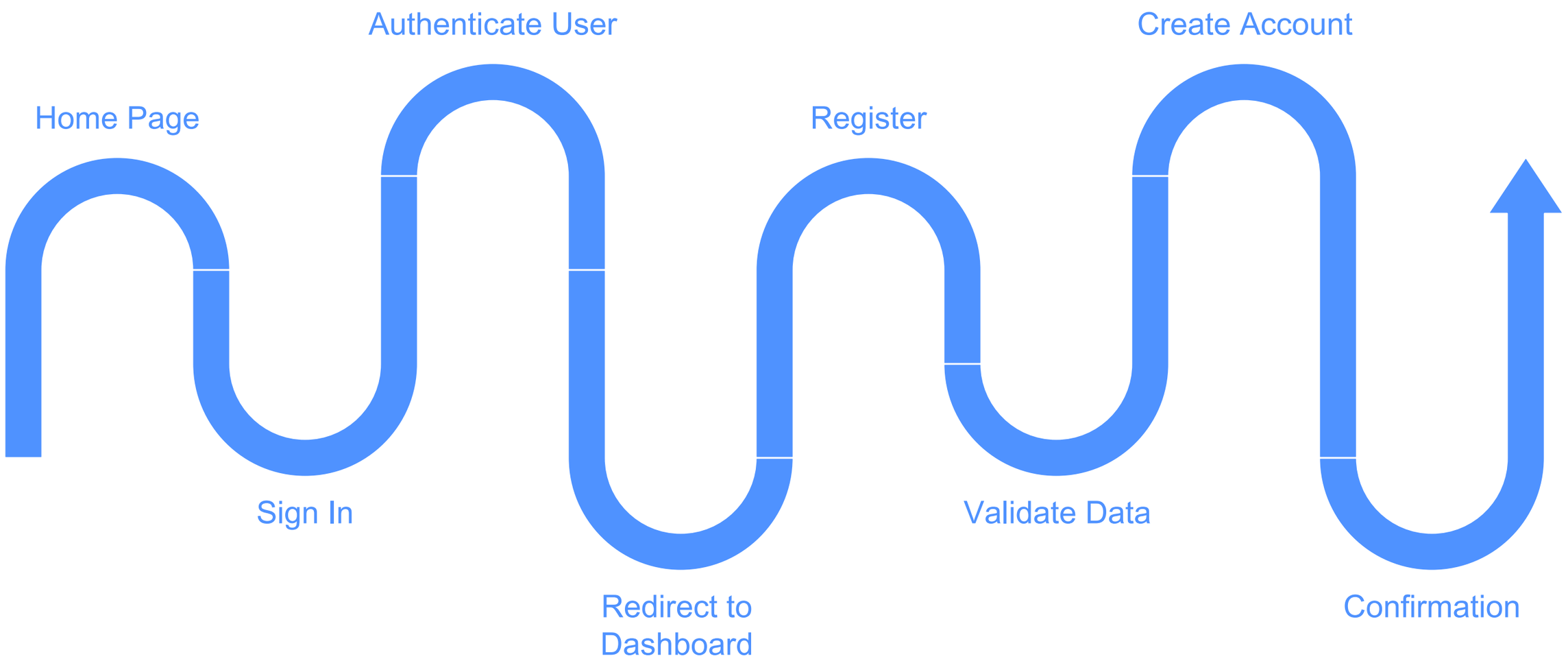

```
[User] --> (Login/Registration)
[User] --> (Account Management)
[User] --> (Loan Application)
[User] --> (Customer Support)

[Banking Staff] --> (Login)
[Banking Staff] --> (Customer Management)
[Banking Staff] --> (Transaction Approval)
[Banking Staff] --> (Reporting)

[Admin] --> (Login)
[Admin] --> (User Management)
[Admin] --> (Audit Trails)
[Admin] --> (System Configuration)
```

Flow Diagram

The flow diagram illustrates the user journey through the application, detailing the steps from the home page to various functionalities.

```
Home Page
   |
   +---> Sign In
   |          |
   |          +---> Input: Username, Password
   |          |          |
   |          |          +---> Actions: Authenticate User
   |          |          |
   |          |          +---> Output: Redirect to User Dashboard
   |
   +---> Register
              |
              +---> Input: Username, Password, Personal Details
              |          |
              |          +---> Actions: Validate Data, Create Account
              |          |
              |          +---> Output: Confirmation, Redirect to Login

User Dashboard
   |
   +---> Account Management
   |          |
   |          +---> View Account Details
   |          +---> Modify Account Settings
   |
   +---> Loan Application
   |          |
   |          +---> Input: Loan Type, Amount, Personal Details
   |          |          |
   |          |          +---> Actions: Validate Loan Application, Submit for
Approval
   |          |          |
   |          |          +---> Output: Loan Status Updates
   |
   +---> Customer Support
              |
              +---> Input: Query Type
              |          |
              |          +---> Actions: Submit Query, Get Assistance
              |          |
              |          +---> Output: Resolution Status, Follow-up Options
   |
   +---> Logout
```


Navigating the Banking Web App
Sign In
Register
Dashboard Access
Account Management
Loan Application
Customer Support
Logout



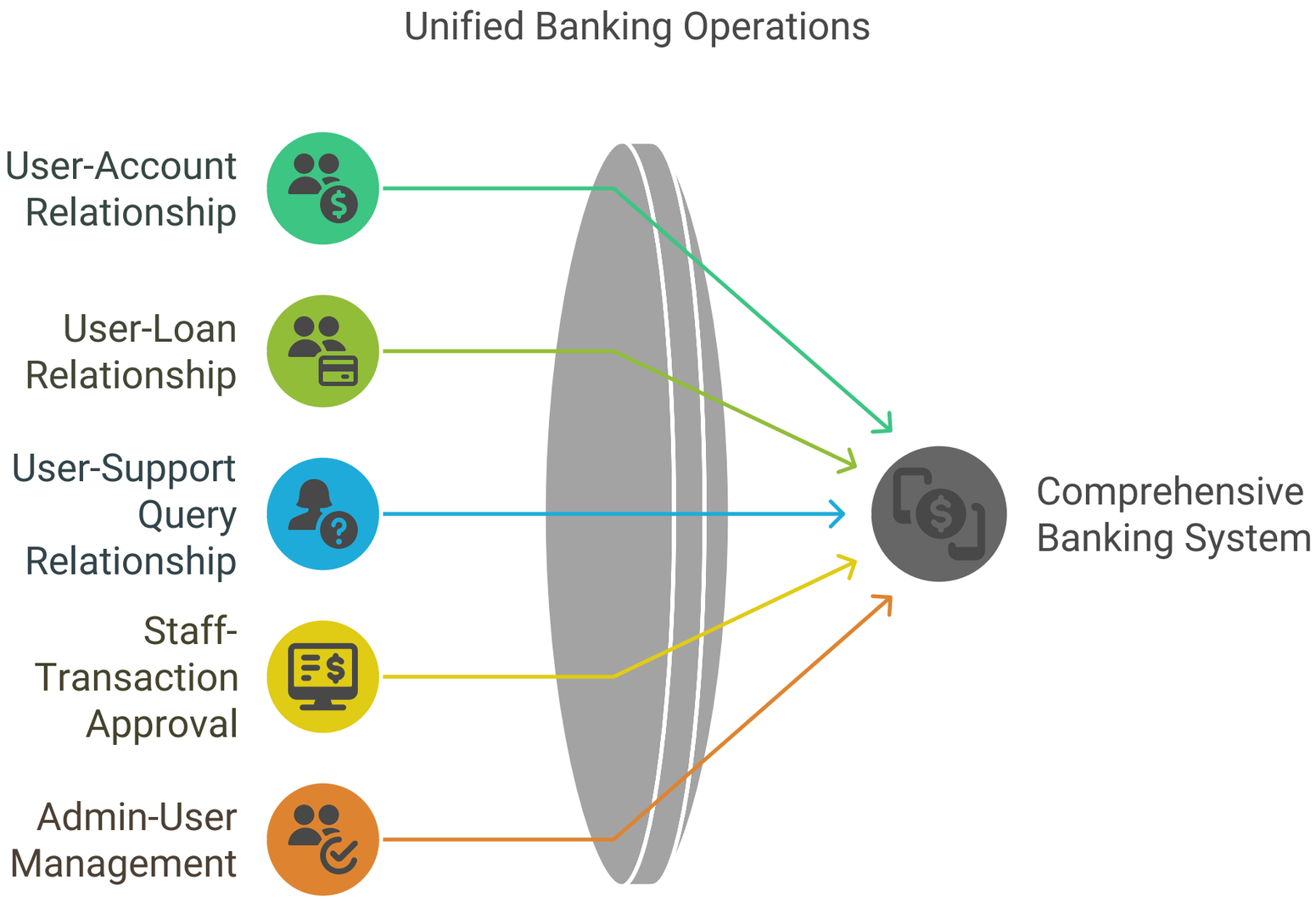
Entity-Relationship (ER) Diagram

The ER diagram represents the data model of the banking application, showcasing the relationships between different entities.

- **Entities:**
    - User
        - Attributes: UserID, Username, Password, PersonalDetails
    - Account
        - Attributes: AccountID, UserID, Balance, TransactionHistory
    - Loan
        - Attributes: LoanID, UserID, LoanType, Amount, Status
    - SupportQuery
        - Attributes: QueryID, UserID, QueryType, ResolutionStatus
    - BankingStaff
        - Attributes: StaffID, Username, Role
    - Admin
        - Attributes: AdminID, Username, Permissions

```
[User] 1 ---- * [Account]
[User] 1 ---- * [Loan]
[User] 1 ---- * [SupportQuery]
[BankingStaff] 1 ---- * [TransactionApproval]
[Admin] 1 ---- * [UserManagement]
```

Banking Web Application Relationships



Conclusion

The banking web application is designed to provide a user-friendly and secure platform for managing banking operations. By implementing modern technologies and robust security features, the application aims to enhance customer experience and operational effectiveness. The diagrams presented in this document serve as a visual representation of the application's architecture and functionalities, guiding the development process.