

## **Software Requirement Engineering (SE-301-A)**

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Topic:

**Project (Banking Application)**

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**BS Software Engineering (III)**

**GIFT University, Gujranwala**

# Project Proposal

## **Introduction:**

Our project aims to revolutionize modern banking by introducing an innovative banking application. In response to the evolving needs of users, we're dedicated to crafting a secure, intuitive, and efficient platform. This proposal outlines our vision to redefine the banking experience through cutting-edge software engineering.

## **Purpose:**

Our project aims to develop a comprehensive banking application that offers efficient, secure, and user-friendly banking services to customers.

## **Project description:**

This project involves the development of a user-centric banking application equipped with essential features, providing a seamless and secure platform for banking transactions and services.

## **Key Features:**

- **Account Management:** Allows users to create, manage, and monitor their accounts easily.
- **Transaction Processing:** Enables seamless and secure fund transfers, bill payments, and transaction history tracking.
- **Security Measures:** Implements robust security protocols to safeguard user data and transactions.
- **User Interface:** Offers an intuitive and user-friendly interface for smooth navigation.

## **Benefits for Users:**

The software project aims to revolutionize the banking experience by offering:

- **Convenience:** Access banking services anytime, anywhere.
- **Security:** Ensuring the safety of users' financial information.
- **Efficiency:** Streamlining banking transactions and processes for enhanced user experience.

## **Functional Requirements**

### **1. User Authentication and Authorization:**

- The system should authenticate users securely through methods like password authentication, biometrics, or two-factor authentication.
- Users should have different access levels based on roles (admin, customer) with appropriate permissions.

### **2. Account Management:**

- Users should be able to create, modify, and delete their accounts.
- Account details should include account type, account number, balance, and transaction history.

**3. Funds Transfer & Payment:**

- The system must allow users to transfer funds between their own accounts or to other users.
- It should facilitate bill payments to registered billers or utilities.

**4. Transaction History:**

- The system should maintain a comprehensive transaction log detailing all financial activities.

**5. Notifications & Alerts:**

- Users should receive notifications for successful transactions, balance updates, or any security-related alerts.

**6. Security Measures:**

- Encryption of sensitive data during transmission and storage.
- Regular security audits and updates to ensure system robustness.

**7. Customer Support:**

- The system should feature a customer support module allowing users to contact the bank for assistance or queries.
- It should include options for live chat, email support, or a helpline.

**8. Multi-Currency Support:**

- For international transactions, the system should support multiple currencies and provide real-time exchange rates.
  - It should allow users to view balances and conduct transactions in various currencies.
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# **Vision and Scope Document**

**for**

## **A Banking App**

**Version 1.0 approved**

**The Banking App**

**5<sup>th</sup> February, 2024**

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## Revision History

Name	Date	Reason For Changes	Version

## 1. Business Requirements

**Business requirements** serve as the fundamental basis and guide for developing detailed requirements. They encompass the needs and objectives of a project, sourced from stakeholders such as senior management, executive sponsors, visionaries, product managers, and marketing departments. These requirements outline the purpose of the project and the value it aims to deliver to both the business and its customers

## **1.1. Background**

The rapid evolution of technology and customer preferences in the banking sector necessitates the development of a modern banking application. This application aims to offer customers a seamless banking experience with advanced features and security measures.

## **1.2. Business Opportunity**

The banking industry is witnessing a shift towards digital banking solutions. With the increasing adoption of smartphones and internet banking, there is a significant market opportunity to develop a user-friendly and feature-rich banking application that caters to the needs of modern customers.

## **1.3. Business Objectives**

- Enhance customer satisfaction by providing a convenient and efficient banking experience.
- Increase market share by offering innovative features and services.
- Improve operational efficiency and reduce costs through digital automation
- Strengthen brand reputation and loyalty through superior service delivery.

## **1.4. Success Metrics**

- Increase in the number of active users.
- Improvement in customer retention rates.
- Growth in transaction volume and revenue.
- Positive feedback and ratings from users.
- Compliance with regulatory requirements.

## **1.5. Vision Statement**

Our banking app aims to revolutionize the way customers manage their finances by offering a comprehensive suite of digital banking services. We envision a future where banking is effortless, secure, and tailored to meet the diverse needs of our customers, empowering them to achieve their financial goals with confidence.

## **1.6. Business Risks**

- Market competition from existing banking applications
- Security threats and data breaches
- Technological challenges in integrating with legacy systems
- Regulatory compliance requirements
- User adoption and acceptance of new features.

## **1.7. Business Assumptions and Dependencies**

Assumption:

The target market is receptive to digital banking solutions.

Dependency:

Integration with third-party payment gateways and financial institutions.

Assumption:

Adequate resources and budget allocation for development and marketing efforts.

Dependency:

Availability of skilled technical personnel for software development and maintenance.

## 2. Scope and Limitations

**Project scope** outlines the concept and boundaries of the proposed solution. It defines what will be included in the product and, equally importantly, what won't. By clarifying limitations, it manages stakeholder expectations and serves as a reference point for evaluating feature requests and requirement changes. If a proposed requirement falls outside the scope, it should be rejected unless its benefits warrant expanding the scope (with adjustments to budget, schedule, or resources)

### 2.1. Major Features

- Account Management
- Fund transfer and Payments
- Bill Payments and Reminders
- Mobile Check Deposit
- Budgeting and Financial Planning Tools
- Card Management and Security Features.

### 2.2. Scope of Initial Release

- Account creation and login functionality
- Basic account management features (view balance, transaction history).
- Fund transfer between accounts.
- Bill payment and scheduling
- Mobile check deposit feature.

### 2.3. Scope of Subsequent Releases

- Enhanced security features (biometric authentication, two-factor authentication).
- Advanced budgeting and financial planning tools.
- Integration with external financial services (investment platforms, loan applications).
- Personalized offers and rewards programs for customers.

### 2.4. Limitations and Exclusions

- Complex financial products such as mortgages and investment portfolios will not be available initially.
- Limited support for international transactions and currency conversions in the initial release.

- Third-party integrations with specific service providers may be subject to availability and compatibility constraints.

### 3. Business Context

**Business context** summarizes some of the business issues around the project, including profiles of major customer categories, assumptions that went into the project concept, and the management priorities for the project

#### 3.1. Stakeholder Profiles

Stakeholder	Major Value	Attitudes	Major interests	Constraints
Account Holder	Security and convenience are primary, followed by transparency and reliability.	Trust, quality expectations, desire for control, and preference for personalization.	Financial management tools, easy access to information, and competitive offerings.	Security concerns, technical limitations, regulatory compliance, and accessibility issues.
Bank Employees	Efficiency and accuracy in task performance, streamlined communication, and access to comprehensive customer information.	Emphasis on userfriendliness, reliability, and security to enhance customer service and productivity.	Real-time customer data access, robust reporting, analytics features, task management tools.	Security protocols, technical glitches, and resistance to change from traditional banking methods.



Shareholders and Investors	Maximizing ROI, ensuring long-term profitability	Focus on the bank's stability, growth potential to maintain confidence in their investment.	Market increase, share revenue growth	Market volatility, regulatory changes impacting profitability
Regulatory Bodies	Enforcing regulatory standards for financial stability.	Committed to legal compliance and consumer protection.	Monitoring compliance, assessing promoting conduct. risk, fair	Limited enforcement resources, balancing innovation with regulation.

### 3.2. Project Priorities

<i>Dimension</i>	<i>Driver (state objective)</i>	<i>Constraint (state limits)</i>	<i>Degree of Freedom (state allowable range)</i>
<i>Customer Satisfaction</i>	Ensuring a positive experience	Implement features to enhance customer satisfaction such as user friendly interfaces	Iterative improvements based on feedback
Revenue Growth	Increasing sales and profitability.	Focus on revenue-generating features and revenue streams and initiatives, such as expanding service offerings and optimizing pricing strategies	Exploring innovative revenue streams and partnerships while balancing investments Costs to maximize returns.
Regulatory compliance	Adhering to legal requirements and standards.	Ensuring strict compliance with transportation regulations, safety standards, and data privacy laws.	Collaborating with regulatory authorities to stay abreast of evolving compliance requirements and proactively address any regulatory changes
<i>Operational efficiency</i>	Streamlining process for cost saving	Implementing measures to optimize fleet management, fuel consumption, and operational workflows to reduce expenses.	Investing in technologies and training programs that enhance operational efficiency and employee productivity
<i>Employee Satisfaction</i>	Providing a conducive work environment for staff	Ensuring employee well-being, training, professional development opportunities to foster job satisfaction and productivity. retention.	Implementing employee feedback mechanisms and recognition programs to boost morale and productivity

### 3.3. Deployment Considerations

Deployment considerations for the vision and scope of a banking application involve:

- **User Accessibility:** Ensure that the application is accessible to all users, including those with disabilities, and across different devices and platforms.
- **Scalability:** Design the application to accommodate potential future growth in user base and transaction volume.
- **Security:** Implement robust security measures to protect sensitive financial data and prevent unauthorized access.
- **Regulatory Compliance:** Ensure that the application complies with relevant banking regulations and data protection laws.
- **Integration:** Plan for seamless integration with existing banking systems and third-party services to provide a comprehensive banking experience.
- **Training and Support:** Provide training and support resources for users and staff to ensure smooth adoption and operation of the application.
- **Testing:** Conduct thorough testing of the application to identify and resolve any bugs or issues before deployment.
- **Data Migration:** Plan for the migration of existing data from legacy systems to the new application, ensuring data integrity and accuracy.
- **Change Management:** Implement strategies to manage organizational change and ensure stakeholders are prepared for the transition to the new application.
- **Feedback Mechanisms:** Establish mechanisms for collecting feedback from users and stakeholders to continuously improve the application post-deploy

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# **Planning elicitation on your project**

**for**

## **A Banking App**

**Version 1.0 approved**

**The Banking App**

**5<sup>th</sup> February, 2024**

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## Revision History

Name	Date	Reason For Changes	Version

# Requirements Elicitation

## Elicitation objectives

### Overall Objectives:

- Understand the banking app market and customer needs.
- Define key functionalities for the Banking Solutions app.
- Identify requirements for integration with financial institutions.

### Objectives for Interviews and Surveys:

- Conduct in-depth interviews with customers to explore preferences for banking app features.
- Do surveys to gather insights from a broader customer base on digital banking adoption barriers.
- Interview financial experts to understand their needs, challenges, and preferences for integration.

## Elicitation strategy and planned techniques

### Stakeholder Groups and Techniques:

#### Customers:

- Techniques: In-depth interviews, targeted surveys.

#### Financial Experts:

##### Techniques:

- Individual interviews, tailored surveys.
- Executives and Regulatory Bodies:

- **Techniques: Conduct expert-level interviews for high-level insights**
- ## Schedule and resource estimates

### Participants:

- Customers for interviews and surveys.
- Financial experts for interviews and surveys.
- Executives and regulatory representatives for key discussions.

### Resource Estimates:

- Prepare and conduct interviews - 2 weeks
- Survey distribution and collection - 3 weeks

- Analysis of information - 1 week
- Estimated effort and time for team members - 6 weeks

## **Documents and systems needed for independent elicitation**

### **Materials Required:**

- Customer profiles and contact information for interviews and survey distribution.
- Online survey tools for efficient data collection.
- Interview guides for structured and consistent questioning.

## **Expected products of elicitation efforts**

### **Anticipated Deliverables:**

- Detailed information from customer interviews regarding app preferences.
- Survey results providing quantitative data on adoption barriers.
- Financial expert feedback and requirements gathered from interviews.

## **2.0. Activities for a single requirements elicitation session**

### **1. Requirements Elicitation - Interview Technique**

#### **Prepare for Elicitation**

- Elicitation Objectives
- Get deep insights from customers about what they want in a banking app.
- Understand the specific requirements and expectations of financial experts.
- Elicitation Scope and Agenda

#### **Scope:**

- Talk to different customers in open conversations.
- Have one-on-one discussions with financial experts.

#### **Agenda:**

##### **Week 1: Preliminary Discussions**

- Set the stage by introducing the project and its goals.

##### **Week 2-3: Customer Elicitation**

- Conduct individual interviews with customers from different demographics.

#### **Week 4: Financial Expert Discussions**

- Schedule one-on-one discussions with financial experts.
- Resources Preparation

#### **Participants:**

- Invite key stakeholders for each interview session.
- Confirm availability of financial experts for one-on-one discussions.

#### **Materials:**

- Prepare simple interview guides.
- Make sure we can record the talks.

- Questions Preparation

#### **Customer Interviews:**

- Ask open questions to know what features they desire in a banking app.
- Find out if there are any concerns about digital banking.

#### **Financial Expert Interviews:**

- Develop questions to get their thoughts on app features and integration needs.
- Encourage them to share any challenges or ideas.
- Straw Man Models
- Create basic mockups of possible Banking Solutions features.
- Use these mockups to help in the interviews.

#### **Questions from Financial Experts:**

- What features do you think are most important for a banking app to offer its users?
- How can a banking app help users better manage their finances?
- What do you believe are the main challenges users face when using banking apps?
- How can a banking app provide value-added services to its users?
- What regulations or standards should a banking app adhere to?

#### **Questions from Cyber-Security Experts:**

- What are the main security concerns associated with banking apps?

- How can a banking app ensure the safety of users' personal and financial information?
- What security measures do you think are essential for a banking app to have?
- How can a banking app educate users about staying safe online?
- How can a banking app respond to security breaches effectively?

### **Questions from End-Users:**

- What features do you like to see in a banking app?
- What challenges do you face when using banking apps?
- How important is ease of use in a banking app for you?
- How do you feel about the security of banking apps?
- What improvements would you like to see in banking apps?

### **Perform elicitation activities**

- Elicitation Session

### **Preliminary Discussions**

- Welcome participants and share a brief overview of the Banking Solutions project.
- Conduct icebreaker activities to create a positive atmosphere.

### **Answers after performing Interview Technique**

#### **Customer Elicitation**

- Easy navigation, quick access to account information, secure fund transfer options, mobile check deposit, budgeting tools, customizable alerts.
- Concerns about security and privacy, occasional glitches, difficulty finding features, slow loading times.
- Prefer intuitive interfaces, clear instructions, streamlined processes for tasks like fund transfer, bill payment.
- Expect prioritized security measures, strong authentication, data encryption, proactive alerts for unusual activity.
- Faster performance, enhanced customization, robust security, better integration, improved customer support.



### **Financial Expert Discussions**

- Easy fund transfer, bill payment, account balance check, financial tracking tools.
- Budgeting tools, spending analysis, financial goal tracking, personalized financial advice.
- Security concerns, complicated interfaces, limited functionality, unreliable network.
- Personalized recommendations, investment opportunities, rewards, partnerships.
- Adherence to data protection laws, PCI DSS, GDPR, and relevant financial regulations.

### **Cyber-Security Expert Discussions**

- Unauthorized access, data breaches, malware, phishing, insecure networks.
- Robust authentication, data encryption, regular audits, user education.
- Secure authentication, data encryption, regular updates, monitoring, strong policies.
- In-app notifications, onboarding tips, educational content, proactive alerts.
- Timely detection, containment, transparent communication, swift actions, post-incident analysis.

### **Closing:**

- Thank participants for their valuable input.
- Summarize key findings and express excitement for the project's success.

## **Follow up after elicitation**

### **Follow up on the Answers of Asked Questions:**

- We will add feature such as advanced payment history to provide all transaction history
- We will add feature of more reliable customer support for swift assistance of user.
- We will add feature of card settings so that user can without any hurdle control their debit/credit card.
- We will only push tailored and important information in notifications to avoid user's from getting disturbed while the are using or not using the app.
- We will make a different section for our promotions and marketing to avoid user from getting distracted.

### **Discuss any Query/Field related jargons:**

- Ask all the former present stake holders about any confusion or problem in the elicited requirements. If there is some conversation left on an open end, discuss it thoroughly to avoid later complications.
- Mostly there is no more detail left now, but if there is still something that needs your focus discuss it to avoid future disruptions.

#### **Share notes:**

- Compile detailed reports from interview transcripts.
- Analyze findings to inform app development.
- Share insights with the development team for further action.

#### **Document Open Issues:**

1. **Digital Banking Concerns:** Some customers expressed reservations about the security of digital banking. Need to explore ways to enhance security measures.
2. **Integration Challenges:** Financial experts highlighted the need for seamless integration with existing financial systems. Further analysis is required to understand specific integration requirements.
3. **App Features:** Diverse opinions on essential features. Need to prioritize features based on customer and financial expert feedback.
4. **Recording Talks:** Ensure the legality and ethical considerations of recording interviews. Establish a clear policy and inform participants.

## **2. Requirements Elicitation - Existing System Analysis Technique**

#### **Prepare for Elicitation**

- Understand the current functionalities and limitations of the existing banking app.
- Gather insights from users and stakeholders on pain points and areas for improvement

#### **Scope:**

- Analyze the functionality, usability, and security of the current banking app.
- Conduct interviews with end-users, customer service representatives, and technical staff.

#### **Agenda:**

### **Week 1: Preliminary Discussions**

- Introduce the purpose of analyzing the existing banking app and its goals.

### **Week 2-3: Customer Elicitation**

- Gather feedback from users on their experiences with the current app, focusing on usability and functionality.

### **Week 4: Financial Expert Discussions**

- Engage with stakeholders to understand their perspectives on the strengths and weaknesses of the existing system.

#### **Participants:**

- Invite key stakeholders including representatives from IT, customer service, and end-users.
- Ensure recording capabilities for interviews and discussions.

#### **Materials:**

- Prepare simple interview guides.
- Make sure we can record the talks.

#### **Questions from Financial Experts:**

- What features did you think were most important for a banking app to offer its users?
- How can existing banking app help users better manage their finances?
- What do you believe are the main challenges users face when using existing banking apps?
- How can a banking app provide value-added services to its users?
- What regulations or standards should a banking app adhere to?

#### **Questions from Cyber-Security Experts:**

- What are the main security concerns associated with certain banking apps?
- How can a banking app ensure the safety of users' personal and financial information?
- What security measures do you think are essential for a banking app to have?
- How can a banking app educate users about staying safe online?
- How can a banking app respond to security breaches effectively?

#### **Questions from End-Users:**

- What features do you like to see in a banking app?
- What challenges do you face when using banking apps?
- How important is ease of use in a banking app for you?
- How do you feel about the security of banking apps?
- What improvements would you like to see in banking apps?

## **Perform elicitation activities**

### **Elicitation Session**

#### **Week 1: Preliminary Discussions**

- Introduce the analysis process and its importance for enhancing the banking app.
- Discuss initial observations or pain points identified by the team.

#### **Week 2-3: User Interviews and System Evaluation**

- Gather feedback from users on their experiences with the current app, focusing on usability and functionality.
- Assess the system's performance metrics, such as response times and error rates.

#### **Week 4: Cyber-Security Expert Discussions**

- Engage stakeholders in a dialogue about their expectations for improvements and desired features.
- Compile insights from user interviews and system evaluation to inform future requirements.

### **Closing:**

- Thank participants for their valuable input.
- Summarize key findings and express excitement for the project's success.

### **Follow up after elicitation**

- Organize and share notes

### **Discuss any Query/Field related jargons:**

- Address any uncertainties or discrepancies in the elicited requirements with former stakeholders to ensure clarity.

**Share notes:**

- Compile detailed reports from interview transcripts.
- Address open issues and prioritize requirements based on stakeholder feedback and system analysis.

## **Document Open Issues**

1. **Digital Banking Concerns:** Some customers expressed reservations about the security of digital banking. Need to explore ways to enhance security measures.
2. **Integration Challenges:** Financial experts highlighted the need for seamless integration with existing financial systems. Further analysis is required to understand specific integration requirements.
3. **App Features:** Diverse opinions on essential features. Need to prioritize features based on customer and financial expert feedback.
4. **Recording Talks:** Ensure the legality and ethical considerations of recording interviews. Establish a clear policy and inform participants.

## **Follow up on the Answers of Asked Question:**

- The Question session with financial experts led us to conclusion that we should follow the standards that are already used by other apps that are already in market so that we don't face any kind of regulatory issues.
- The Question session with Cybersecurity experts made us clear that in our app we should only use advanced data protection and encryption methods to protect users personal information and use same as the existing systems in market have to avoid any kind of problem and may lean towards better and secure option if any available in market than what existing systems are using.
- The session with users cleared all concerns regarding Easy navigation, quick access to account information, secure fund transfer options, mobile check deposit, budgeting tools, customizable alerts etc. and made clear for us how to design the system to avoid hurdles in completion of task done by user.

## **3. Requirements Elicitation – Questionnaire/Survey Technique**

### **Prepare for Elicitation**

- Understand the scope and agenda of your project before starting the elicitation process.
- Prepare resources like questions such as:

- On a scale of 1 to 5, how frequently do you use banking apps for managing your financial activities?

1: Never

2: Rarely

3: Occasionally

4: Frequently

5: Very frequently

- On a scale of 1 to 5, how valuable do you collectively find the features or functionalities offered by banking apps?

1: Not valuable at all

2: Somewhat valuable

3: Moderately valuable

4: Very valuable

5: Extremely valuable

- On a scale of 1 to 5, how satisfied are you collectively with the current banking apps available in the market?

1: Not satisfied at all

2: Slightly satisfied

3: Moderately satisfied

4: Very satisfied

5: Completely satisfied

- On a scale of 1 to 5, how important is it for you collectively to have access to personalized financial advice within a banking app?

1: Not important at all

2: Somewhat important

- 3: Moderately important
- 4: Very important
- 5: Extremely important

- On a scale of 1 to 5, how likely are you collectively to recommend improvements in banking apps to better meet your financial needs?

- 1: Not likely at all
- 2: Slightly likely
- 3: Moderately likely
- 4: Very likely
- 5: Extremely likely

### **Perform elicitation activities**

- Elicitation Session
- After discussing the scope and agenda perform the questionnaire process
- **Answers/Result after performing Questionnaire**
  - They use banking applications too frequently (4 on a scale of 1-5)
  - They find it difficult to find features (2 on a scale of 1-5)
  - They are moderately satisfied with the other applications in market (3 on a scale of 1-5)
  - It is not important for them collectively to have access to financial advice within the application (2 on a scale of 1-5)
  - There is a high need of improvement in the former applications in the market (4 on a scale of 1-5)

### **Follow up after elicitation**

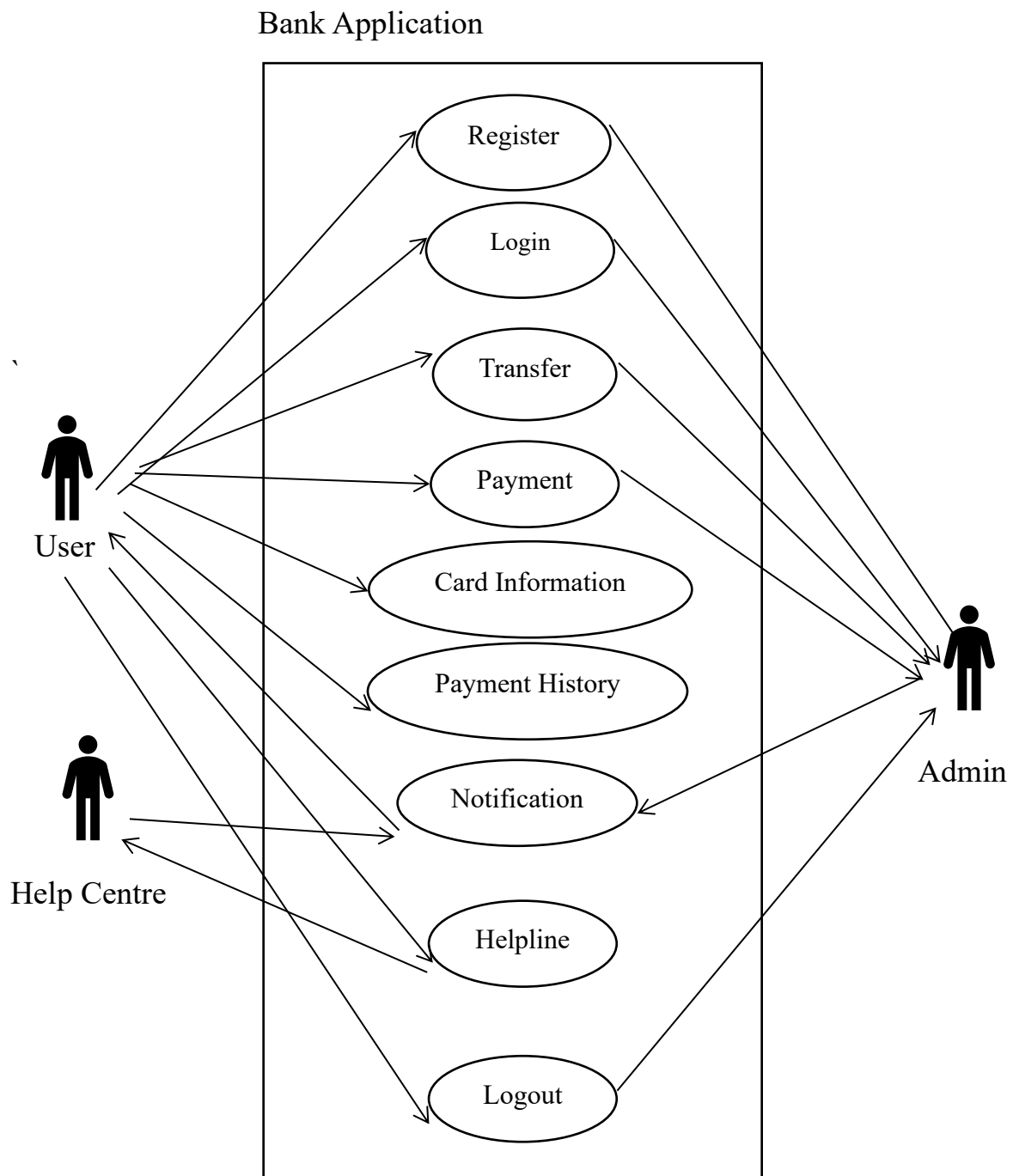
- Organize and share notes
  
- The follow up session includes all the result from the questionnaire and the requirement elicited from these are now short listed to be included in the new upcoming application.
  - The requirements state that end users are facing difficulty in finding features which means there is a need for improvement in UI designs.
  - They do not like other applications in the market so it is not much helpful to gather/elicit information from those applications rather they should elicit requirements to some other techniques.
  - They use these applications too often, so it is useful to add more features and provide the customers, this will help in reducing man power and increasing the flow of digital cash. It will also greatly help in reducing the incidents where the money is stolen or left somewhere.
  - They do not like the idea of getting financial advices from the banks rather they would like offers or discounts given on their accounts after a certain monthly spending limit or after huge cash flows. This will increase the business and attract more new customers to the respective bank.

### **Follow up on the Answers of Asked Question:**

- We will improve the UI design of our application.
  
- Providing more Advanced Data Security and Encryption System and methods such as Triple Data Encryption Standard (3DES) or Advanced Encryption Standards (AES).
  
- Create features such as payment history and qr scan features that are of great ease and importance so that user has ease of use and help us retaining customers.
  
- Give value adding features in our bank that our client finds helpful and pleases them such as providing them discounts and deals on various shopping platforms and eateries making it a value adding feature.



## Use Case:



## **User Stories:**

### **1. Registration:**

- As a new customer, I want to register for an account with my personal information, email, and password so that I can access the banking services.
- As a user, I want the registration process to include account verification steps to ensure the security of my information.

### **2. Login:**

- As a registered user, I want to log in securely using my username/email and password to access my account information.
- As a user, I want the option for biometric authentication (fingerprint, face ID) for a more secure and convenient login experience.

### **3. Transfer:**

- As a user, I want to transfer funds between my accounts or to other bank accounts, including internal and external transfers.

- As a customer, I want to be able to schedule future transfers or recurring transfers for convenience.

#### **4. Card Information:**

- As a user, I want to view my card details including card number, expiration date, and CVV for reference.
- As a customer, I want to be able to report a lost or stolen card and request a replacement through the app.

#### **5. Payment History:**

- As a user, I want to view a detailed history of my transactions including payments, transfers, and purchases.
- As a customer, I want to be able to filter and search my payment history by date, type, or amount for better tracking.

#### **6. Helpline:**

- As a customer, I want to have access to a helpline or customer support feature within the app to get assistance with any issues or queries.
- As a user, I want to be able to initiate a chat or call with a customer support representative directly from the app interface.

#### **7. Notification:**

- As a user, I want to receive real-time notifications for account activities such as transactions, payments, and security alerts.
- As a customer, I want to be able to customize notification preferences, including opting in/out of specific types of notifications.

#### **8. Logout:**

- As a user, I want to be able to securely log out of my account to prevent unauthorized access.
- As a customer, I want the option to automatically log out after a period of inactivity for added security.

## Functional Requirements:

Features	Actors	<i>Functional Requirements</i>
Register	User, Admin	<ul style="list-style-type: none"><li>• The system shall provide a registration feature for users to create new accounts.</li><li>• The system shall require users to provide necessary details including Name, CNIC, Email, Password, and verify these details.</li><li>• The system shall validate the provided information during registration.</li><li>• The system shall create a new account upon successful validation of user information.</li></ul>
Login	User, Admin	<ul style="list-style-type: none"><li>• The system shall provide a login feature for users to access their accounts.</li><li>• The system shall require users to enter their credentials, including Email/username and password, for login.</li><li>• The system shall validate the entered credentials during the login process.</li><li>• The system shall allow users to log in only if the provided credentials are correct.</li></ul>
Funds Transfer	User, Admin	<ul style="list-style-type: none"><li>• The system shall provide a functionality for users to transfer funds between accounts.</li><li>• The system shall support both intra-bank and inter-bank fund transfer.</li><li>• The system shall verify the availability of sufficient balance in the user's account before processing the fund transfer.</li><li>• The system shall require user confirmation, possibly through OTP verification or biometric verification, for completing the fund transfer.</li></ul>
Payment	User, Admin	<ul style="list-style-type: none"><li>• The system shall provide a feature for users to pay utility bills and institute fees online.</li><li>• The system shall verify the availability of sufficient balance in the user's account before processing bill payments.</li></ul>

		<ul style="list-style-type: none"> <li>The system shall support various utility bill categories for payments.</li> </ul>
Card Information	User	<ul style="list-style-type: none"> <li>The system shall allow users to view their card information.</li> <li>The system shall allow users to block their cards in case of theft or loss.</li> </ul>
Payment History	User	<ul style="list-style-type: none"> <li>The system shall provide users with access to their transaction history or E-Statement.</li> <li>The system shall allow users to view and download transaction history.</li> </ul>
Notification	User, Admin, Help Center	<ul style="list-style-type: none"> <li>The system shall provide users with transaction notifications.</li> <li>The system shall allow users to set up notification preferences.</li> </ul>
Customer Support	User	<ul style="list-style-type: none"> <li>The system shall provide a feature for users to contact customer support.</li> <li>The system shall generate support tickets for user inquiries or issues.</li> </ul>
Logout	User, Admin	<ul style="list-style-type: none"> <li>The system shall provide a logout feature for users to securely log out of their accounts.</li> <li>The system shall prompt users to confirm their intention to logout before proceeding with the logout action.</li> </ul>

## User Case Description/Scenario

UC-01: Registration	
<b>Primary Actors:</b> User	<b>Secondary Actors:</b> Admin
<b>Feature:</b> Registration	
<b>Use case Id:</b>	UC-01

<b>Description:</b>		Allows users to create a new account easily.
<b>Pre-condition:</b>		Must have an active internet connection.
<b>Scenarios</b>		
<b>Step#</b>	<b>Action</b>	<b>Software Reaction</b>
1.1	User navigates to the registration page.	
1.2	User provides necessary details (Name, CNIC, Email, Password, Verification of these details).	
1.3	User clicks on the “Register” button.	System validates the information and creates a new account.
<b>Alternate Scenarios:</b>		
The provided information is not eligible i.e. user in under 18.		
<b>Exceptional Scenarios:</b>		
<ol style="list-style-type: none"> <li>1. The entered username/email is already used.</li> <li>2. The entered details is in wrong format.</li> <li>3. The system detects suspicious activity.</li> <li>4. Verification of email/phone number was not completed in time.</li> </ol>		
<b>Post Conditions:</b>		
<b>Step#</b>	<b>Description</b>	
1	User’s account is successfully created.	
<b>User Interface reference</b>		Registration Page

UC-02: Login		
<b>Primary Actors:</b> User		<b>Secondary Actors:</b> ,Admin
<b>Feature:</b> Login		
<b>Use case Id:</b>	UC-02	
<b>Description:</b>	Allows Users to create a new account easily.	
<b>Pre-condition:</b>	<div>1.    User must have an active internet connection.</div> <div>2.    User’s account is already registered in the system.</div>	
<b>Scenarios</b>		
<b>Step#</b>	<b>Action</b>	<b>Software Reaction</b>
<b>2.1</b>	User Navigates to the login page.	

<b>2.2</b>	User enters his details (Email/username, password).	
<b>2.3</b>	User clicks on the “Login” button.	System validates the information and logs into the account.
<b>Alternate Scenarios:</b>		
<b>1.</b> User uses saved information to login		
<b>Exceptional Scenarios:</b>		
<b>1.</b> User entered incorrect credentials <b>2.</b> User’s account is suspended due to inactivity. <b>3.</b> User is logging in from a new device.		
<b>Post Conditions:</b>		
User gets logged into the account after successful verification.		
<b>Step#</b>	<b>Description</b>	
<b>1</b>	User’s account is successfully Logged in.	
<b>User Interface reference</b>		Login Page

UC-03: Fund Transfer		
<b>Primary Actors:</b> User		<b>Secondary Actors:</b> Admin
<b>Feature:</b> Fund Transfer		
<b>Use case Id:</b>		UC-03
<b>Description:</b>		Allows User to transfer funds between accounts.
<b>Pre-condition:</b>		User is logged into the application using his credentials.
<b>Scenarios</b>		
<b>Step#</b>	<b>Action</b>	<b>Software Reaction</b>
3.1	User navigates to the transfer of funds functionality.	
3.2	User selects the type of transaction i.e. intra-bank/inter-bank.	
3.3	User enters the receivers’ account number and amount confirms to send.	System verifies if enough balance is available in his account.
3.4	After fetching the final details, user confirms the transaction using OTP verification/biometric verification.	System completes the transaction and updates the account balance.
<b>Alternate Scenarios:</b>		



1. Account balance is not enough.	
<b>Exceptional Scenarios:</b>	
1. User has exceeded transfer limit. 2. Payee's or Payor's account is locked/on hold. 3. User gave duplicate transfer requests.	
<b>Post Conditions</b>	
<b>Step#</b>	<b>Description</b>
1	Funds are successfully transferred within the User account.
<b>User Interface reference</b>	Home Page, Transfer Section

UC-04: Payments		
<b>Primary Actors:</b> User		<b>Secondary Actors:</b> Admin
<b>Feature:</b> Payments for bills, school fees etc.		
<b>Use case Id:</b>		UC-04
<b>Description:</b>		Allows user to pay utility bills and institute fee online.
<b>Pre-condition:</b>		User is logged into the account.
<b>Scenarios</b>		
<b>Step#</b>	<b>Action</b>	<b>Software Reaction</b>
4.1	User navigates to the bill payment option.	
4.2	User selects the utility bill category.	
4.3	User provides necessary bill details and confirms the payment.	System verifies if enough balance is available in his account.
4.4	After fetching all the details, user completes the payment using OTP Verification/Biometric Verification.	System completes the transaction, pays the bill and updates the account balance.
<b>Alternate Scenarios:</b>		
1.    User did not have enough balance in his account.		
<b>Exceptional Scenarios:</b>		
None		
<b>Post Conditions</b>		
<b>Step#</b>	<b>Description</b>	
1	Utility bills are successfully paid online.	

<b>User Interface reference</b>	Bill Payment Section
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UC-05: Card Information		
<b>Primary Actors:</b> User		<b>Secondary Actors:</b> None
<b>Feature:</b> Card Information		
<b>Use case Id:</b>	UC-05	
<b>Description:</b>	Allows user to view and block their card.	
<b>Pre-condition:</b>	<div>1. User is logged into the account.</div> <div>2. User already is a debit/credit card holder.</div>	
<b>Scenarios</b>		
<b>Step#</b>	<b>Action</b>	<b>Software Reaction</b>
<b>5.1</b>	User navigates to the card's information option.	
<b>5.2</b>	User selects between his cards and reveal its information.	System prompts the user to verify though some pin/biometric verification and copies the details to the clipboard of device.
<b>5.3</b>	User blocks the card in case of stolen/lost.	System after verification blocks the card.
<b>Alternate Scenarios:</b>		
None		
<b>Exceptional Scenarios:</b>		
<div>1. User has not issued a card.</div> <div>2. User's card was marked stolen.</div> <div>3. User's card was blocked due to suspicious activity.</div>		
<b>Post Conditions</b>		
<b>Step#</b>	<b>Description</b>	
<b>1</b>	User manages his card's information and usability.	
<b>User Interface reference</b>		Cards Information Section

UC-06: Payment History/E-Statement		
<b>Primary Actors:</b>	User	<b>Secondary Actors:</b> None
<b>Feature:</b>	Payment History/E-Statement	
<b>Use case Id:</b>	UC-06	

<b>Description:</b>		Allows user to view his previous transactions.
<b>Pre-condition:</b>		User is logged into his account.
<b>Scenarios</b>		
<b>Step#</b>	<b>Action</b>	<b>Software Reaction</b>
6.1	User navigates to the payment history option.	
6.2	User selects the from/to dates to view the details of transactions during that period.	System displays all the history of the former transactions to the user and generates pdf file to download.
<b>Alternate Scenarios:</b>		
None		
<b>Exceptional Scenarios:</b>		
<ol style="list-style-type: none"> <li>1. User enters the date in wrong format.</li> <li>2. User demands data that is not available.</li> </ol>		
<b>Post Conditions</b>		
<b>Step#</b>	<b>Description</b>	
1	User can view and download his transaction history/E-Statement	
<b>User Interface reference</b>		Payment History Section

UC-07: Transaction Notifications		
<b>Primary Actors:</b> User		<b>Secondary Actors:</b> Admin
<b>Feature:</b> Alerts and Notifications		
<b>Use case Id:</b>	UC-07	
<b>Description:</b>	Allows User to receive notifications for every transaction and any update about system maintenance etc.	
<b>Pre-condition:</b>	User is successfully registered in the system.	
<b>Scenarios</b>		
<b>Step#</b>	<b>Action</b>	<b>Software Reaction</b>
7.1	User sets up transaction notification preferences.	System sends notifications for transactions exceeding a defined threshold.
<b>Alternate Scenarios:</b>		
1. User has disabled receiving notifications option.		
<b>Exceptional Scenarios:</b>		

1. The user has not provided an email/phone number for notifications.		
<b>Post Conditions</b>		
<b>Step#</b>	<b>Description</b>	
<b>1</b>	User receives timely notifications for transactions and scheduled system maintenance.	
<b>User Interface reference</b>		Notification Preferences

UC-08: Contact Customer Support		
<b>Primary Actors:</b> User		<b>Secondary Actors:</b> Help Centre
<b>Feature:</b> Customer Support		
<b>Use case Id:</b>		UC-08
<b>Description:</b>		Allows customers to contact customer support for assistance.
<b>Pre-condition:</b>		User is a registered account holder in the system.
<b>Scenarios</b>		
<b>Step#</b>	<b>Action</b>	<b>Software Reaction</b>
8.1	Customer initiates a support request through the system.	
8.2	Customer provides details of the issue or inquiry.	System generates a support ticket and notifies the customer.
<b>Alternate Scenarios:</b>		
None		
<b>Exceptional Scenarios:</b>		
None		
<b>Post Conditions</b>		
<b>Step#</b>	<b>Description</b>	
1	Customer's support request is successfully logged.	
<b>User Interface reference</b>		Customer Support Section

UC-09: Logout		
<b>Primary Actors:</b> User		<b>Secondary Actors:</b> Admin
<b>Feature:</b> Logout		
<b>Use case Id:</b>	UC-09	

<b>Description:</b>		Allows user to logout securely.
<b>Pre-condition:</b>		User was already logged into the account.
<b>Scenarios</b>		
<b>Step#</b>	<b>Action</b>	<b>Software Reaction</b>
<b>9.1</b>	User navigates and selects the "Logout" button.	Prompts the user to confirm their intention to logout.
<b>9.2</b>	User confirm their action again.	Log the user out of their account.
<b>Alternate Scenarios:</b>		
None		
<b>Exceptional Scenarios:</b>		
None		
<b>Post Conditions:</b>		
<b>Step#</b>	<b>Description</b>	
<b>1</b>	User is successfully logged out of their account.	
<b>User Interface reference</b>		Logout