

Database Management

Summer-2023-CSE303+L

Team Backend_Backbone

Group 31

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Chapter 1: Introduction

A: Background of the Organization

LankaBangla Finance Limited, established in Bangladesh, operates as a licensed non-banking financial entity.^[1] Leading the company is Mohammad A. Moyeen as its chairman,^[2] while Khwaja Shahriar holds the position of CEO and managing director at LankaBangla Finance Limited.

LankaBangla Finance Limited originated in 1997 as a non-banking financial institution through a collaboration between Vanik Incorporation Limited from Sri Lanka and Bangladeshi investors.^{[4][5]} Initially named Vanik Bangladesh Limited, it was rebranded as LankaBangla Finance Limited in 2003,^[5] with Sampath Bank and One Bank Limited acquiring shares that same year^[5].

In 2005, the company introduced the LankaBangla Finance MasterCard to replace the earlier Vanik Card launched in 1998.^[6] By May 2007, a 10 percent cash dividend was distributed to shareholders.^[7]

By 2010, LankaBangla Finance Limited contemplated a public offering in conjunction with LankaBangla Securities Limited.^[8] Mohammed Nasir Uddin Chowdhury assumed the role of managing director for LankaBangla Finance Limited on December 4, 2011.^[9]

On June 1, 2017, Khwaja Shahriar was appointed as the managing director of LankaBangla Finance Limited.^[10]

Despite facing liquidity challenges in the Bangladesh financial market, LankaBangla Finance Limited managed to raise its profit by 14.35 percent in 2019.^[10] An infusion of US\$20 million came from the Islamic Corporation for the Development of the Private Sector,^[11] and in June 2020, a 12 percent dividend was declared.^[12]

In 2022, LankaBangla Finance Limited entered into a memorandum of understanding with Rangs Limited,^[13] and established an agreement with Nagad in June.^[14] LankaBangla Securities remained the top stock broker for 16 consecutive years at the Dhaka Stock Exchange and 15 years at the Chittagong Stock Exchange,^[15] with gratitude expressed to Shibli Rubaiyat-UI-Islam, the chairman of the Bangladesh Securities and Exchange Commission, for endorsing Lanka Bangla's TradeXpress, a broker hosted OMS.^[16] Notably, the company faced classified loans amounting to 4.35 billion BDT in 2022,^[17] and the Government Pension Fund of Norway invested US\$1.76 million in LankaBangla Finance.^[18]

In 2023, LankaBangla Finance Limited solidified an agreement with Trust Axiata Pay (TAP).^[19]

B: Background of the Project

LankaBangla Securities Ltd. is a prominent finance and security company originated from Sri Lanka. Today they have many of their services available for the Republic of Bangladesh.

In summary, the project for LankaBangla Securities Ltd. seeks to create a comprehensive and user-friendly Database Management System (DBMS) that will automate and streamline the management of

C: Objective of the Project

The goal of this project was to implement a system that seeks to fulfill the operating objectives of LankaBangla by providing an internet-based solution that makes Lanka Bangla's services easily accessible to its customers and employees.

D: Scope of the Project

The software must be developed in which the user interface will be able to redirect the page to its corresponding page depending on the stakeholders. The customer entity will be able to create a temporary web application account for the purpose of filling multiple types of forms for LankaBangla services.

Employees such as Relationship Manager and Head-of-Settlements are able to use the webapp for managing and manipulating the data of customers and making informed decisions.

Chapter 2: Requirement Analysis

Requirement analysis, in the realm of software engineering, entails the critical task of comprehending a user's envisioned outcome for a particular product, typically categorized as functional specifications. This intricate process revolves around extensive interactions with system users, fostering clear communication channels to discern their precise needs and desires. Moreover, requirement analysis serves as a vital platform for resolving any conflicts or uncertainties that may arise during the project's inception, striving to produce comprehensive documentation that encapsulates every facet of the project, from its inception to fruition.

The central objective of this endeavor should always prioritize aligning the final system with the expectations and demands of stakeholders. This approach ensures that the final product remains steadfast in meeting its intended purpose, steering clear of unnecessary alterations that may deviate from the original requirements. In essence, requirement analysis serves as the cornerstone for harmonizing the aspirations of users with the ultimate realization of a product, fostering a structured and successful development process.

A: Rich Picture (As Is)

A rich picture serves as a visual representation that encapsulates the essential elements and intricate relationships to be considered within a particular context. It can be likened to a panoramic, high-level overview that captures the essence of a problem in a simplified manner. This multifaceted image incorporates a blend of symbols, text, icons, and images to artistically convey the complexity of the situation.

At its core, the concept behind a rich picture is founded on the belief that a single image can convey a wealth of information and leave a lasting cognitive impression of the issue at hand. This approach harnesses the power of visualization to convey the depth and nuances of a given problem, transcending the limitations of mere words.

In the realm of rich picture analysis, several key dimensions are considered:

1. **Structures:** This entails examining the fundamental components and frameworks that underpin the situation, including organizational hierarchies, systems, and physical infrastructure.
2. **Processes:** Rich picture analysis delves into the various processes and workflows at play, shedding light on how actions and tasks are executed and interrelated.
3. **Climate:** It considers the prevailing atmosphere, culture, and overarching environment within which the situation unfolds, as these factors can significantly impact outcomes.
4. **People:** The human element is a central focus, considering the roles, motivations, and interactions of individuals involved in the scenario.
5. **Conflict:** Rich picture analysis also pays attention to potential conflicts, tensions, or disagreements that may arise, recognizing their influence on the situation's dynamics.

In essence, a rich picture serves as a powerful tool for holistic problem analysis, offering a multidimensional perspective that goes beyond traditional textual descriptions. It enables stakeholders to grasp the complexities of a situation more intuitively and facilitates a deeper understanding of the challenges and opportunities within it.

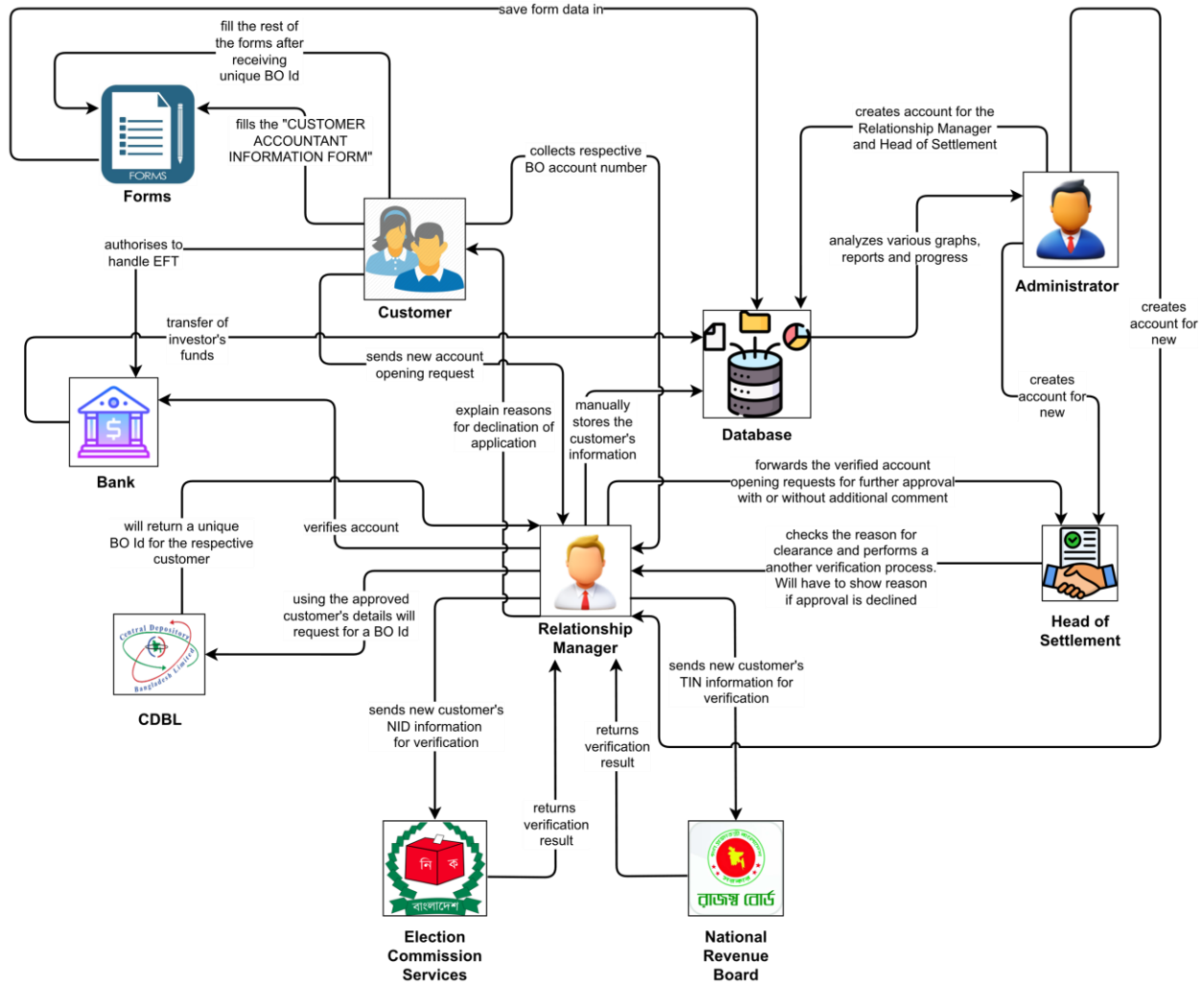


Figure 1 LankaBangla as is rich picture.

B: Six Element Analysis (As Is)

Process	System Roles					
	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication & Network
A new customer contacts with the relationship manager for opening a new BO account	A) Customer Place a request for opening a new BO account to the relationship manager. B) Relationship Manager 1. Accepts the request and provides necessary information regarding account opening,	A) Paper Paper is used by the relationship manager to note down the primary information of the new customer in a physical copy. B) File Holder 1. File holders can be used by the stakeholders to organize and store the information of	A) Computer: Computer is used by the stakeholders to display and input the data into the databases of LankaBangla. B) Printer: Printer is used to print the hardcopy of different agreements and to print the attested form. C) Scanner: Scanner is used to scan	A) Operating system: 1. Operating Systems such as Windows or MacOS are used to run the computers used by the stakeholder. B) Google Chrome: Chrome web browser is used to	A) LankaBangla Database: The corresponding customer's entry in the database is used for information required to make the BO account.	A) Phone: The customer may contact the help and service desk, or the relational manager for direct assistance with opening the BO account. B) Mail: The

	provides forms, and asks for relevant papers.	the potential customers	the form copy and some other agreement of customer and LankaBangla . Scanner helps to keep updating attested paper.	browse the iBroker website so that customers can input their data. Also, it helps administrators to see the ultimate result of overview.		customer may also seek help and assistance using mail.
The relationship manager and head of settlement receives the customers paper set and does verification.	A) Customer: Sends the relevant papers and information that needs to be verified by the employees. B) Relationship Manager:	A) Pen It is used to write down information and sign documents. B) Paper Used to write down extra information regarding the	A) Computer: Computer mostly used to accept form and verifying the customer account. It helps to do analog work more easily in a digital way. B) Printer: Printer helps to print necessary information that helps	A) Operating system: 1. Operating Systems such as Windows or MacOS are used to run the computers used by the	A) National Databases: For verification of the identity of the customer, checks are made against	A) Connection with the National Database: The National database is connected to the Internet, so

	<p>Collects all the necessary papers and information and does primary verification and forwards the set to the Head of Settlement</p> <p>C) Head of Settlement:</p> <p>Does secondary verification and provides his/her final verdict on the acceptance/refusal of the application.</p>	<p>account opening process.</p> <p>C) File Holder</p> <p>Employees use this to keep the document sets organized and to store them safely.</p>	<p>company to have hardcopy of necessary info.</p> <p>C) Scanner: Scanner will help to scan information on existing databases system.</p>	<p>stakeholder</p> <p>·</p> <p>B) Web Browser:</p> <p>Web browser is used to browse the iBroker website so that customers can input their data. Also, it helps administrators to see the ultimate result of overview.</p>	<p>the database of national IDs (NID) and passport, as well as the</p>	<p>Internet access is required for verification.</p>
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C: Existing Problems & their Analysis

The six elemental analyses conducted by the previous stakeholders revealed flaws in various processes. These flaws included repetition and time-consuming effects. To address these issues, we introduced proposed solutions to streamline and manage each of these processes more effectively.

Process Name	Stakeholder	Concerns (Problems)	Analysis (Reason of the problem)	Proposed Solution
Customer physically contacting with the Relationship Manager for opening a new account.	1.Customer 2.Relationship Manager.	1.Same information of 'how to open a new account' is passed down to each Customer every time with physical consultation sessions.	1. Potential customers must physically contact the Relationship Manager to find out about the process of opening a new account. 2. Customers may need to wait a long time for the required information depending on the availability of the Relationship Manager prolonging the process.	1. Introducing a web application interface will allow the company to store its account opening information there, reducing the need for the Relationship Manager to explain the same set of information over and over. 2. Allowing a new Customer to create a temporary web account through which he/she can send relevant queries directly to the Relationship Manager.
Providing feedback on the reason for refusal of a proposed BO account opening application for a particular customer	1. Customer 2. Relationship Manager 3. Head of Settlement Officer	1. When a BO account opening application is denied the relationship manager must contact the customer to provide reasoning for the refusal	1. If a BO account opening application is denied for a customer the relationship manager must contact the customer and let him/her know about the reason	1. Through the web application system, both the relationship manager and the head of settlement can promptly transmit their denial reasons directly to

		<p>which may take unnecessary time.</p>	<p>of refusal denoted by the Head of Settlement.</p> <p>2. This process takes time as it requires the customer to be available when the relationship manager is trying to contact him/her.</p> <p>3. Information passed down to the relationship manager from the head of settlement about the exact reasons for refusal may be lost.</p> <p>4. Relationship manager must repeat the same information provided by the head of settlement to the customer alongside his/her own reasons.</p>	<p>the customer's dashboard.</p> <p>2. Providing the customer with a temporary web application account and a personal dashboard will enable them to access denial reasons directly from their dashboard.</p> <p>3. Since the process no longer needs the stakeholders to be free simultaneously, it will streamline the process and reduce the unnecessary time required.</p>
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D: Rich Picture (To Be)

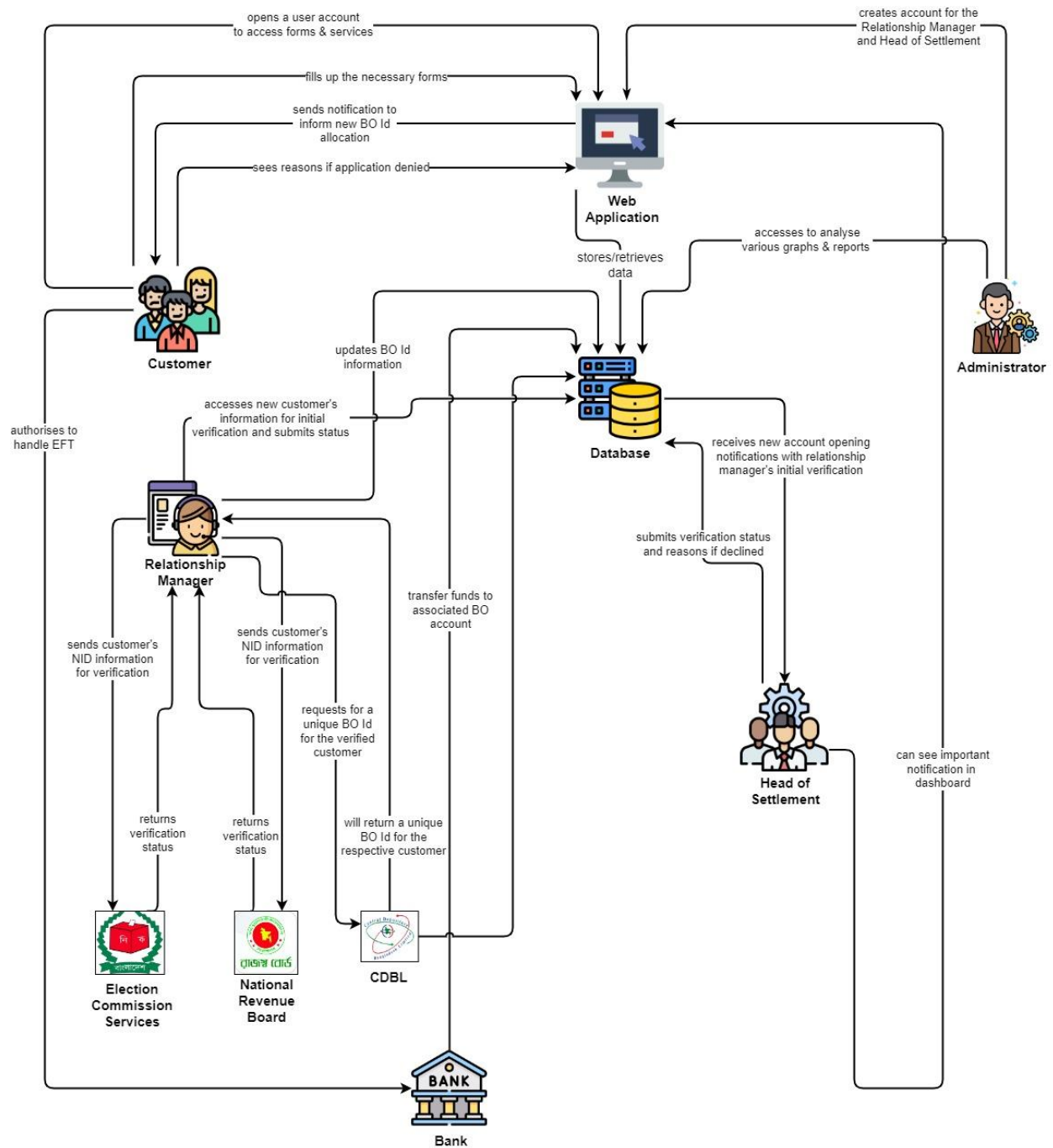


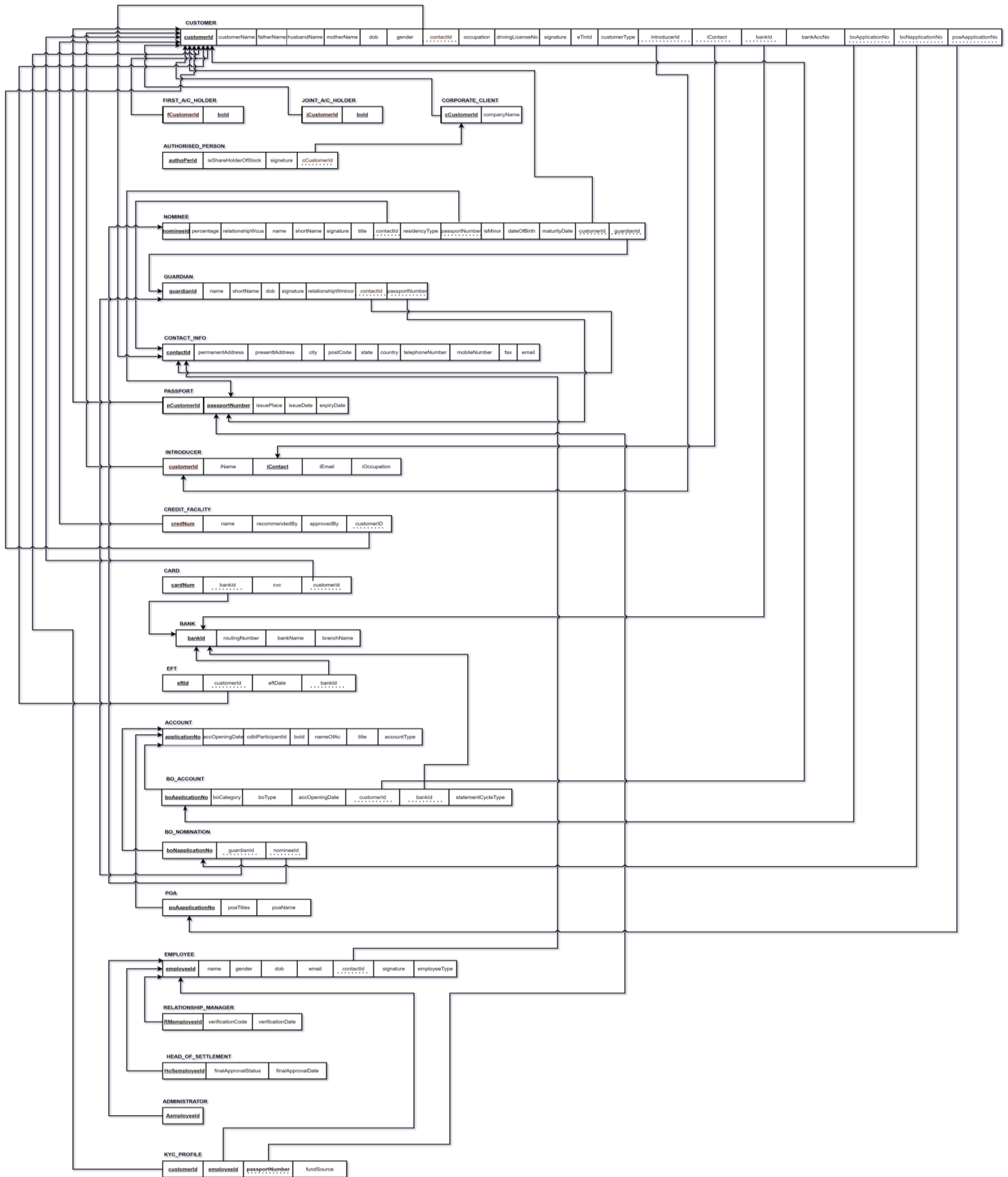
Figure 2 Proposed LankaBangla rich picture.

E: Six Elements Analysis (To Be)

Process	System Roles					
	Human	Non-Computing Hardware	Computing Hardware	Software	Databases	Communication & Network
Customer can now place account opening requests from their own web application dashboard	<p>A) Customer Can now create a temporary web interface account through which he/she can place an account opening request directly to the relationship manager.</p> <p>B) Relationship Manager Can view the requests from customers in his/her own dashboard in</p>		<p>A) Computer and Peripherals 1. Used by the stakeholders to access the web interface.</p> <p>B) Router, Server Router or other networking devices used by the stakeholders to use the system.</p>	<p>A) Operating system: Operating Systems used by the consumer /customer are now also of concern, care must be taken to ensure that these systems are properly targeted.</p>	<p>A) Database The database stores the customer's information to be used by employees for creating new BO accounts.</p>	<p>A) Notification: Communication is done with customers through the comments by HoS and RM. And the employees get notified on the website to stay up to date about the data.</p>

	notification format.					

B: Relational Schema



Team Backend Backbone

C: Normalization

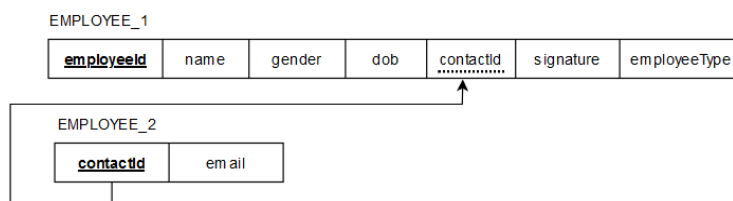
For the schema above, we will normalize every table to BCNF.

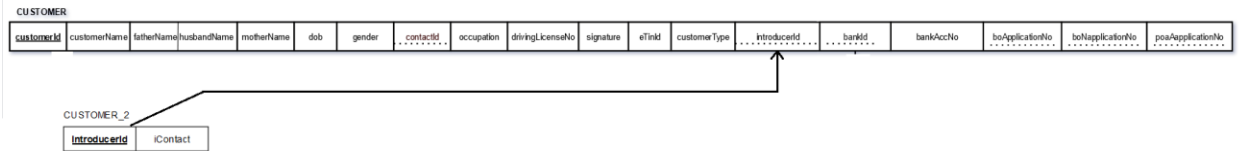
Because we designed our tables from the ground up using business rules, we were able to think up of scenarios where redundancy might have appeared and created contingencies against them (for example creating the CONTACT_INFO table to reduce redundant fields in multiple entities such as Customer and Employee since we need to store the same data of them both.). This caused the resultant tables before normalization to be *mostly* normalized already. However, some tables benefited from a final normalization check.

The following tables are already in BCNF.

- FIRST_AC_HOLDER
- JOINT_AC_HOLDER
- CORPORATE_CLIENT
- AUTHORISED_PERSON
- GUARDIAN
- CONTACT_INFO
- INTRODUCER
- CREDIT_FACILITY
- CARD
- BANK
- EFT
- NOMINEE
- GUARDIAN
- CONTACT_INFO
- PASSPORT
- ACCOUNT
- BO_ACCOUNT
- BO_NOMINATION
- POA
- RELATIONSHIP_MANAGER
- HEAD_OF_SETTLEMENT
- ADMINISTRATOR
- KYC_PROFILE

Below are the remaining tables in BCNF.





D: Data Dictionary

CUSTOMER:

Name	Data Type	Size	Remark
customerID	Number	11	This is the primary key of the CUSTOMER table. It contains ID of customers. e.g., 1234
customerName	Text	100	This contains the name of the customer. e.g., 'David Crowley'
fatherName	Text	100	It contains the name of the customer's father.
motherName	Text	100	It contains the name of the customer's mother.
husbandName	Text	100	It contains the name of the customer's husband.
dob	Datetime	"DD/MM/YYYY"	It contains the date of birth of the customer. e.g., '28/09/1999'
gender	Text	10	It contains the customer's gender. e.g., 'male'.
contactID	Number	11	It's a foreign key which refers to CONTACT_INFO table.
occupation	Text	50	It contains the occupation of the

			customer. e.g., 'Engineer'.
drivingLicenseNo	Text	30	It contains a driving license number.
signature	Text	2MB	It contains the signature of the customer as image form.
eTinID	Text	50	It contains eTinID. e.g., '324571873214'
customerType	Text	20	It contains the type of customer. e.g., 'first account holder'.
introducerID	Number	11	It's a foreign key which refers to the INTRODUCER table. It's the introducer's id who himself is a customer.
iContact	Text	15	It contains the introducer's contact ID. It refers to the INTRODUCER table.
bankID	Number	10	It contains the customer's bank ID. It's a foreign key which refers to the bankId attribute from the BANK table.
bankAccNo	Text	30	It contains the bank account number of the customer. e.g., '23456'
boApplicationNo	Number	11	It contains the number of BO Application form. It's a foreign key which refers to the BO_ACCOUNT table.
boNominationNo	Number	11	It contains the BO Nomination application number. It's a foreign key

			which refers to the BO_NOMINATION table. e.g., 23456
poApplicationNo	Number	11	It contains the application number of Power of Attorney form. It's a foreign key which refers to the 'poApplicationNo' attribute from POA table.

FIRST_A/C HOLDER:

Name	Data Type	Size	Remark
fCustomerId	Number	11	It's part of the composite primary key and it's a foreign key as well which refers to the 'customerId' attribute from CUSTOMER table.
bold	Number	11	It's part of the composite primary key .

JOINT_A/C HOLDER:

Name	Data Type	Size	Remark
jCustomerId	Number	11	It's part of the composite primary key and it's a foreign key as well which refers to the 'customerId' attribute from CUSTOMER table
bold	Number	11	It's part of the composite primary key .

CORPORATE_CLIENT:

Name	Data Type	Size	Remark
cCustomerId	Number	11	It's the primary key and it's a foreign key as well which refers to the 'customerId' attribute from CUSTOMER table
companyName	Text	200	It contains the name of the company. e.g., Grameenphone.

AUTHORISED_PERSON:

Name	Data Type	Size	Remark
authoPerId	Number	11	It's the primary key of AUTHORISED_PERSON . It contains the ID of that person. e.g., 6754
isShareHolderOfStock	Bool	1	It contains the data whether the shareholder is of stock or not.
signature	Text	2MB	It contains the signature of the customer as image form.
ACcustomerId	Number	11	It contains the customer ID of an Authorized person. It's a foreign key which refers to the 'CcustomerId' attribute from CORPORATE_CLIENT table.

NOMINEE:

Name	Data Type	Size	Remark
nomineeld	Number	11	It contains the ID of the nominee. It's the primary key of NOMINEE. e.g., 15678
percentage	Number	11,6	It contains the percentage share the nominee gets. E.g., 34.6
relationshipWcus	Text	50	It contains the relationship with csutomer. e.g., 'son'
name	Text	100	It contains the name of the nominee
shortName	Text	50	Short name of the nominee. E.g., Istiaq
signature	LONGBLOB	2MB	Contains signature as image form
title	Text	50	Title of the nominee. E.g., Mr.
contactId	Number	11	It contains the Contact ID of the nominee. It's a foreign key which refers to CONTACT_INFO table.
residencyType	Text	20	It contains the type of residence of the nominee. e.g., 'non-resident'
passportNumber	Text	20	It contains the passport number of the Nominee. It's a foreign key which refers to PASSPORT table.
isMinor	Bool	1	It contains the data whether the

			nominee is minor or not.
dateOfBirth	Datetime	"DD/MM/YYYY"	It contains date of birth.
maturityDate	Datetime	"DD/MM/YYYY"	It's the date of nominee's maturity.
customerId	Number	11	It's the ID of the customer for the nominee. It's a foreign key which refers to the CUSTOMER table.
guardianId	Number	11	It's the ID of guardian. It's a foreign key which refers to the GUARDIAN table.

GUARDIAN:

Name	Data Type	Size	Remark
guardianID	Number	11	It's the primary key of GUARDIAN . It contains the ID of the guardian.
name	Text	100	It contains the full name of the guardian.
shortName	Text	50	It contains the short name of the guardian.
dob	Datetime		It contains the date of birth of guardian.
relationshipWithMinor	Text	20	It contains the relationship of guardian with minor. e.g., 'uncle'
passportNumber	Text	10	It contains the passport number of the Guardian. It's a foreign key which refers to PASSPORT table.
contactID	Number	11	It's the contact ID of the guardian. It's a foreign key which refers to the table CONTACT_INFO
signature	Text	2GB	Contains signature as image form

CONTACT_INFO:

Name	Data Type	Size	Remark
contactID	Number	11	It contains the contact ID of users. It's the primary key of the

			CONTACT_INFO table.
presentAddress	Text	400	It contains the present address of the users.
permanentAddress	Text	400	It contains the permanent address of the users. e.g., Rajshahi
mobileNumber	Text	20	It contains the mobile number of the users.
city	Text	20	It contains the city name of the users.
postcode	Text	20	It contains the postcode of the users. e.g., 1229
state	Text	20	It contains the state name of the users. e.g., Dhaka
country	Text	20	It contains the country name of the users.
fax	Text	20	It contains the fax of the users.
email	Text	100	It contains the email of the users. e.g., rahathasan@gmail.com
telephoneNumber	Text	20	It contains the telephone number of the users.

PASSPORT:

Name	Data Type	Size	Remark
pCustomerId	Number	11	It contains the customer ID who holds passport. It's part of the composite primary key of PASSPORT. It's

			also a foreign key which refers to CUSTOMER table.
passportNumber	Text	10	It's the number of the passport and it's the part of the composite primary key of PASSPORT.
issuePlace	Text	100	It contains the name of the place where the passport has been issued.
issueDate	Datetime	"DD/MM/YYYY"	It contains the date when the passport has been issued
expiryDate	Datetime	"DD/MM/YYYY"	It contains the expiry date of the passport

INTRODUCER:

Name	Data Type	Size	Remark
introducerID	Number	11	It contains the ID of the introducer and it's the part of the composite primary key of INTRODUCER
iName	Text	100	It contains the name of the introducer.
iContact	Text	20	It contains the number of the introducer. It's part of the composite primary key .
iEmail	Text	100	It contains the email of the introducer.
iOccupation	Text	50	It contains the occupation of the introducer.

CREDIT_FACILITY:

Name	Data Type	Size	Remark
creNum	Text	20	It's the primary key of this table.
name	Text	100	It's the name of the credit facility.
recommendedBy	Text	100	It contains the person's name who recommended.
approvedBy	Text	100	It contains the name of the person who has approved.
customerID	Number	11	It's a foreign key which refers to the customerID from the CUSTOMER table.

CARD:

Name	Data Type	Size	Remark
cardNum	Text	20	It contains the number of the card. It's the primary key of cardNum.
bankId	Number	10	It's a foreign key which refers to the bankId from BANK table.
cvc	Number	11	It contains the cvc of the credit.
customerId	Number	11	It's a foreign key which refers to the customerID from the CUSTOMER table.

BANK:

Name	Data Type	Size	Remark
bankId	Number	10	It's the id of the bank. It's the primary key of the BANK table.
routingNumber	Text	20	It contains the routing number.
bankName	Text	100	It contains the name of the bank. e.g., AB Bank.
branchName	Text	100	It contains the branch name of the bank. e.g., AB Bank, Mohakhali Branch.

EFT:

Name	Data Type	Size	Remark
eftId	Number	11	It contains the eft id and it's the primary key of EFT.
customerId	Number	11	It's a foreign key which refers to the customerId from the CUSTOMER table
eftDate	Datetime	"DD/MM/YYYY"	It contains the date of eft.
bankId	Number	10	It contains the name of the bank. It's also a foreign key which refers to the bankId from BANK table.

ACCOUNT:

Name	Data Type	Size	Remark
applicationNO	Number	11	It's the application number of the account and it's the

			primary key of ACCOUNT.
accOpeningDate	Datetime	"DD/MM/YYYY"	It's the date of opening the account.
cdblParticipantId	Number	11	It contains the cdblparticipantId.
bold	Number	11	It contains the BO id.
nameOfAc	Text	30	It contains the name of the account owner.
title	Text	30	It contains the title of the account owner.
accountType	Text	20	It contains the type of account.

BO_ACCOUNT:

Name	Data Type	Size	Remark
boapplicationNo	Number	11	It contains application no. Of BO form. It's the primary key of BO_ACCOUNT and it's also a foreign key which refers to the applicationNo from ACCOUNT table.
boCategory	Text	20	It's the category of beneficiary owner.
boType	Text	20	It contains the type of BO.
accOpeningDate	Datetime	"DD/MM/YYYY"	It's the date of opening the account.
customerId	Number	11	It contains the customer id and it's the foreign key which refers to customerId from CUSTOMER table.
bankId	Number	10	It's a foreign key that refers to bankId

			attribute from BANK table.
statementCycleType	Text	25	It contains the type of statement cycle.

BO_NOMINATION:

Name	Data Type	Size	Remark
boNApplicationNo	Number	11	It contains bo nomination application number. It's the primary key of BO_NOMINATION and it's also a foreign key which refers to applicationNo from ACCOUNT table.
guardianId	Number	11	It's a foreign key that refers to guardianId from GUARDIAN table.
nomineeId	Number	11	It's the id of the nominee. It's a foreign key which refers to nomineeId from NOMINEE table.

POA:

Name	Data Type	Size	Remark
poApplicationNum	Number	11	It contains the number of Power of Attorney and it's the primary key of poApplicationNum.
poaTitles	Text	20	It contains the title of the POA. E.g., 'Ms.'
poaName	Text	100	It contains the name of the power of attorney.

EMPLOYEE:

Name	Data Type	Size	Remark
employeeId	Number	11	It contains the ID of the employee and it's the primary key of EMPLOYEE. e.g., 134678
name	Text	100	It contains the name of the employee
gender	Text	10	It contains the gender of the employee
dob	Datetime	"dd/mm/yy"	It contains the Birthdate of the employee
email	Text	100	It contains the email of the employee
contactId	Number	11	It contains the contact id of the employee and it's a foreign key which refers to contactId from CONTACT_INFO table
signature	LONGBLOB	2MB	It contains signature in image form
employeeType	Text	100	It's the type of employee e.g., 'Relationship Manager'

RELATIONSHIP_MANAGER:

Name	Data Type	Size	Remark
rmemployeeID	Number	11	It contains the ID of the relationship manager and it's the primary key of the Relationship Manager table. And

			it's also a foreign key which refers to the employeeId from EMPLOYEE table.
verificationCode	Number	4	It contains the verification code.
verificationDate	Datetime	"DD/MM/YYYY"	It contains the verification date.

HEAD_OF_SETTLEMENT:

Name	Data Type	Size	Remark
hoEmployeeId	Number	11	It contains the ID of the Head of Settlement and it's the primary key of HEAD_OF_SETTLEMENT table. And it's also a foreign key which refers to the employeeId from EMPLOYEE table.
finalApprovalStatus	Text	300	It contains the status of approval
finalApprovalDate	Datetime	"DD/MM/YYYY"	It contains the date of approval.

ADMINISTRATOR:

Name	Data Type	Size	Remark
aemployeeId	Number	11	It's the ID of the administrator. It's the primary key of ADMINISTRATOR and the foreign key which refers to employeeId from EMPLOYEE table.

KYC_PROFILE:

Name	Data Type	Size	Remark
customerId	Number	11	It contains the ID of the customer. It's part of the composite primary key of KYC_PROFILE and a foreign key which refers to customerId from CUSTOMER table.
employeeId	Number	11	It contains the ID of the employee. It's part of the composite primary key of KYC_PROFILE and a foreign key which refers to employeeId from EMPLOYEE table.
passportNumber	Number	11	It contains the number of passports. It's a foreign key which refers to passportNumber from PASSPORT table.
fundSource	Text	200	It contains the source of funds.

Chapter 4: Physical System Design

Administrator Login

Growing Together...

Sign In

USERNAME

PASSWORD

☒ Remember Me [Forgot Password](#)

Not a member? [Sign Up](#)




Figure 3 Log in Scene

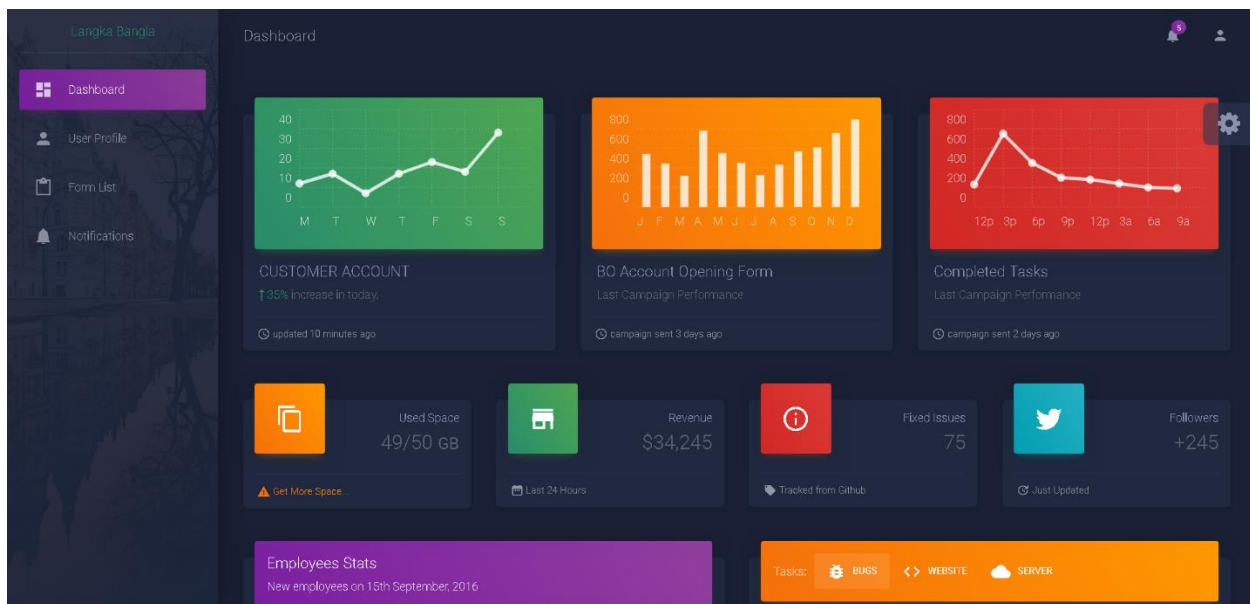


Figure 4 Admin Dashboard

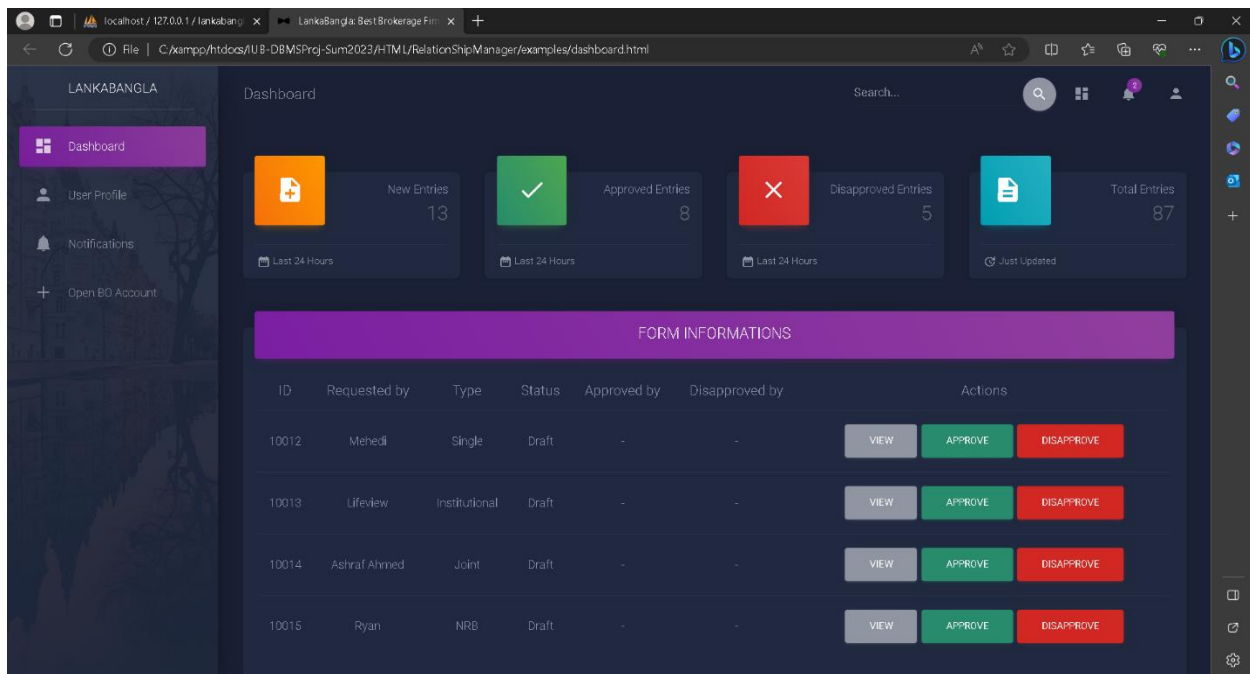


Figure 5 Relationship Manager Dashboard

Account Type
Cash

Date
mm / dd / yyyy

Client Code
Enter Client Code

Link Code
Enter Link Code

First Account Holder

Name of the Customer: _____ Father's/Husband's Name: _____ Mother's Name: _____

Date Of Birth: mm / dd / yyyy ☐ Male ☐ Female Enter Nationality: _____

Present Address: _____ Mobile Number: _____ Tel Number#: _____

Permenant Address: _____ Tel Number#: _____ E-Mail ID: _____

Occupation: _____ E-Tin#: _____

Joint Account Holder

Name of the Customer: _____ Father's/Husband's Name: _____ Mother's Name: _____

Figure 6 CAI Form

[Lanka Bangla](#) [Home](#) [CAI FORM](#) [BOAO Form](#) [BOAN Form](#) [POA Form](#)

BO Account Opening Form

Please complete all details in CAPITAL letters. Please fill all names correctly. All communications shall be sent only to the First Named Account Holder's correspondence address.

Application ID	Date	Customer ID
<input type="text"/>	<input type="text" value="mm / dd / yyyy"/>	<input type="text"/>
Bank ID	<input type="text"/>	

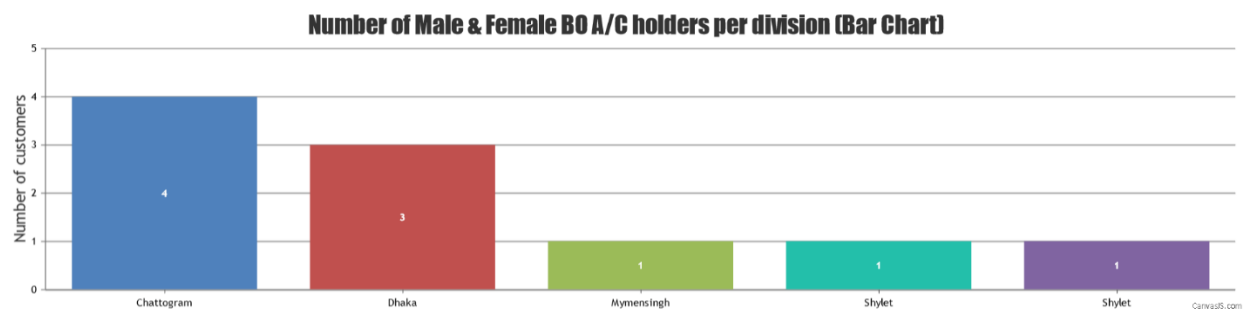
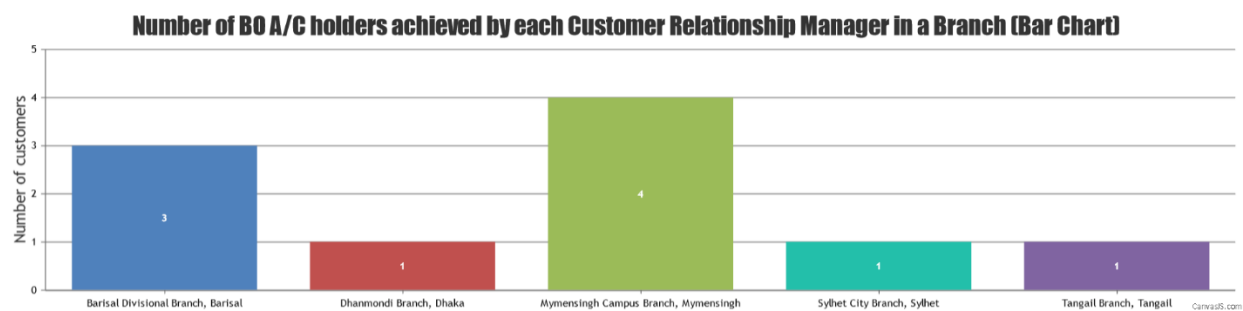
Please Tick whichever is:

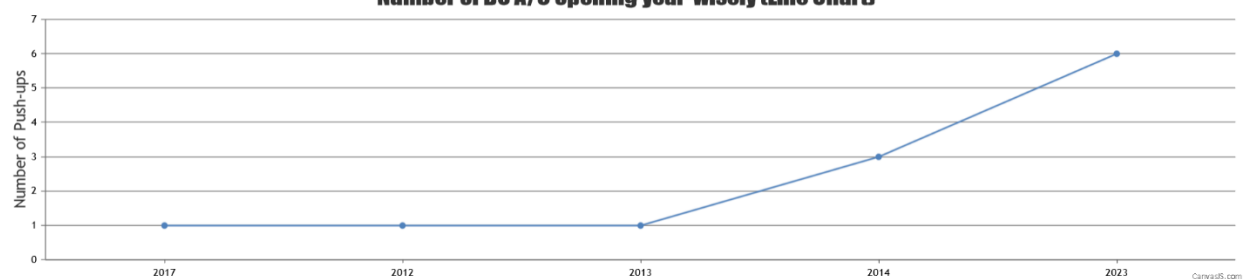
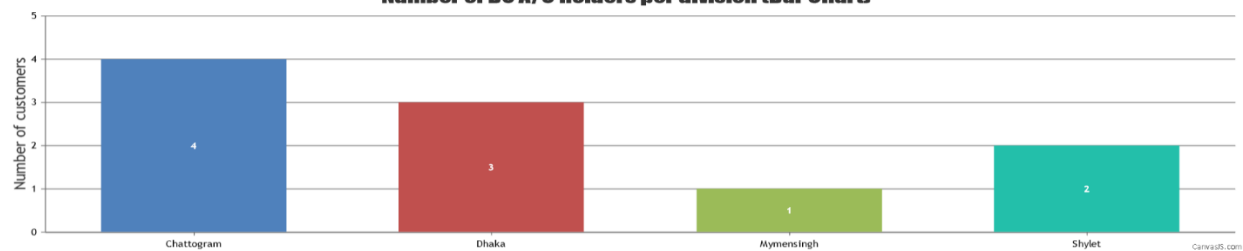
BO Category :	<input type="radio"/> Regular <input type="radio"/> Omnibus <input type="radio"/> Clearing	BO Type :	<input type="radio"/> Individual <input type="radio"/> Company <input type="radio"/> Joint Holder
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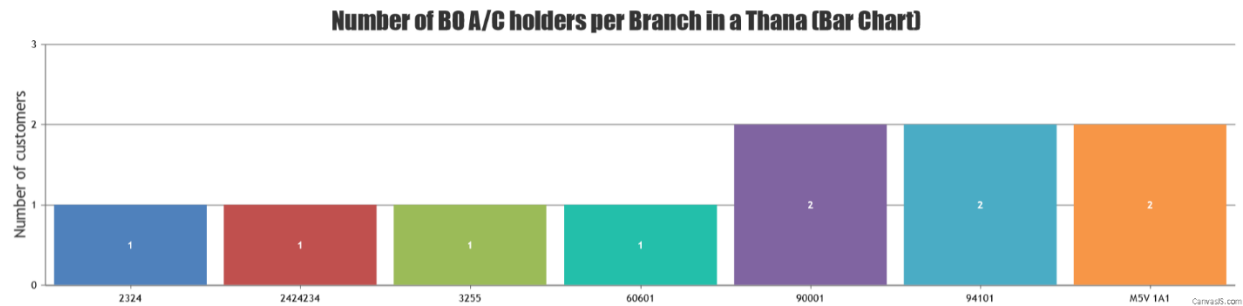
Name of CDBL Participant : LankaBangla Securities Ltd.

CDBL Participant ID	BO ID	Date Account Opened
<input type="text"/>	<input type="text"/>	<input type="text" value="mm / dd / yyyy"/>

Figure 7 BO Account Opening Form



Number of BO A/C opening year-wisely (Line Chart)**Number of BO A/C holders per division (Bar Chart)**



Chapter 5: Conclusion

During the analysis phase, obtaining clear and authentic organic data was a challenge. Consequently, much of the information used to construct the rich picture and conduct the 6 elemental analyses was derived from the Q&A session with LankaBangla and observations gathered from online resources. To address this limitation, feedback from each stakeholder was sought to ensure a more comprehensive perspective.

The implementation phase of this project presented several noteworthy challenges. The database was established using PhpMyAdmin MariaDB, which posed difficulties for developers without actual IP addresses to share the database with their team members. Consequently, a disproportionate burden fell on a select few individuals responsible for database-related tasks.

To prevent such issues in future projects, adopting SQLite and seeking in-depth guidance from experienced experts are essential steps to consider. This approach can help streamline collaboration and enhance the efficiency of database-related work across the team.

Additional Enhancements and Features:

- In future developments, it is imperative to implement a system where the server exclusively delivers data to the respective client. This approach allows clients to dynamically generate their corresponding web pages. By adopting this strategy, we can significantly enhance the scalability of the website, accommodating multiple clients seamlessly.

- It is crucial to establish a system that incorporates robust Student Performance Management Systems (SPMS) and automation for academic processes. Deploying such a system can streamline administrative tasks, enhance efficiency, and provide better support for academic operations.

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