DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

School of Engineering Technology and Science (SESL)

Course Title: Database Management System

Course Code: CSC 303

Topic of the Project: Customer Information Management System for Lanka Bangla Securities Limited

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PROJECT TITLE:

Customer Information Management System for Lanka Bangla Securities Limited

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Chapter 01: Introduction

Background of the Organization:

LankaBangla Securities Limited is the top stock brokerage house in Bangladesh currently holding the 1st position for 15 consecutive years in DSE and 14 consecutive years in CSE.
It provides quality, convenience, and reliability at the highest level people can expect from a broker and that is the key to such a strong network of key clients all over the world. Apart from efficient stock brokerage services, it provides state of the art research services to cater to the need of inquisitive investors.The LankaBangla Financial Portal (lankabd.com) is a unique platform that acts as a hive of all sorts of financial and economic data one may look for. Also, the Publication Department has successfully published a monthly magazine named "Market Pulse" since 2007 which is widely appreciated by the stakeholders for its efforts to promote a knowledge based capital market environment in Bangladesh.
LBSL is a subsidiary of LankaBangla Finance Limited.
Mohammad A. Moyeen is the chairman of LankaBangla Finance Limited. Khwaja Shahriar is the CEO and managing director of LankaBangla Finance Limited.
LankaBangla Finance Limited was established in 1997 as a non-banking financial institution by Vanik Incorporation Limited of Sri Lanka and some Bangladeshi investors. It was originally named Vanik Bangladesh Limited but was renamed to LankaBangla Finance Limited in 2003. In 2010, the company planned to go public with LankaBangla Securities Limited.

Background of the project:

The project is about developing a software for LankaBangla Security Limited for managing client data systematically by providing bo forms on an online platform. In this advanced technology era it is essential to have a systematic customer information management method to enhance the experience. There is vast amounts of customer data, including personal information, financial records, and transaction histories. The complexity of this data requires efficient and secure management. The financial services industry is subject to strict regulatory requirements, including Know Your Customer (KYC) and Anti-Money Laundering (AML) regulations and it is a significant responsibility for a company to look up these regulations to prevent financial crimes and ensure customer due diligence. They need systems that can scale seamlessly to accommodate increasing data volumes and user loads. Streamlining internal processes related to customer information management can lead to significant cost savings and improved operational efficiency. Effective decision-making relies on accurate and up-to-date customer data. A tool is required to analyze customer data, track investment preferences, and identify trends in the market. Effective customer information management software helps mitigate risks associated with fraud, identity theft, and regulatory non-compliance.

Objective of the project:

The objective of the project is to make the customer management process efficient, compliant and customer-centric. It will create a centralized repository for storing and managing customer information, making it easily accessible to authorized users within the company. Enable representatives to provide better service by having access to comprehensive customer profiles, transaction histories and communication records. By this project the customer satisfaction and retention will be gained by offering personalized services and quick issue resolution. Also data security and privacy to protect sensitive customer data and market trends will be prioritized. Ensuring the successful development, deployment and adoption of the

software by adhering to project timelines, budgets and quality standards is one of the significant roles.

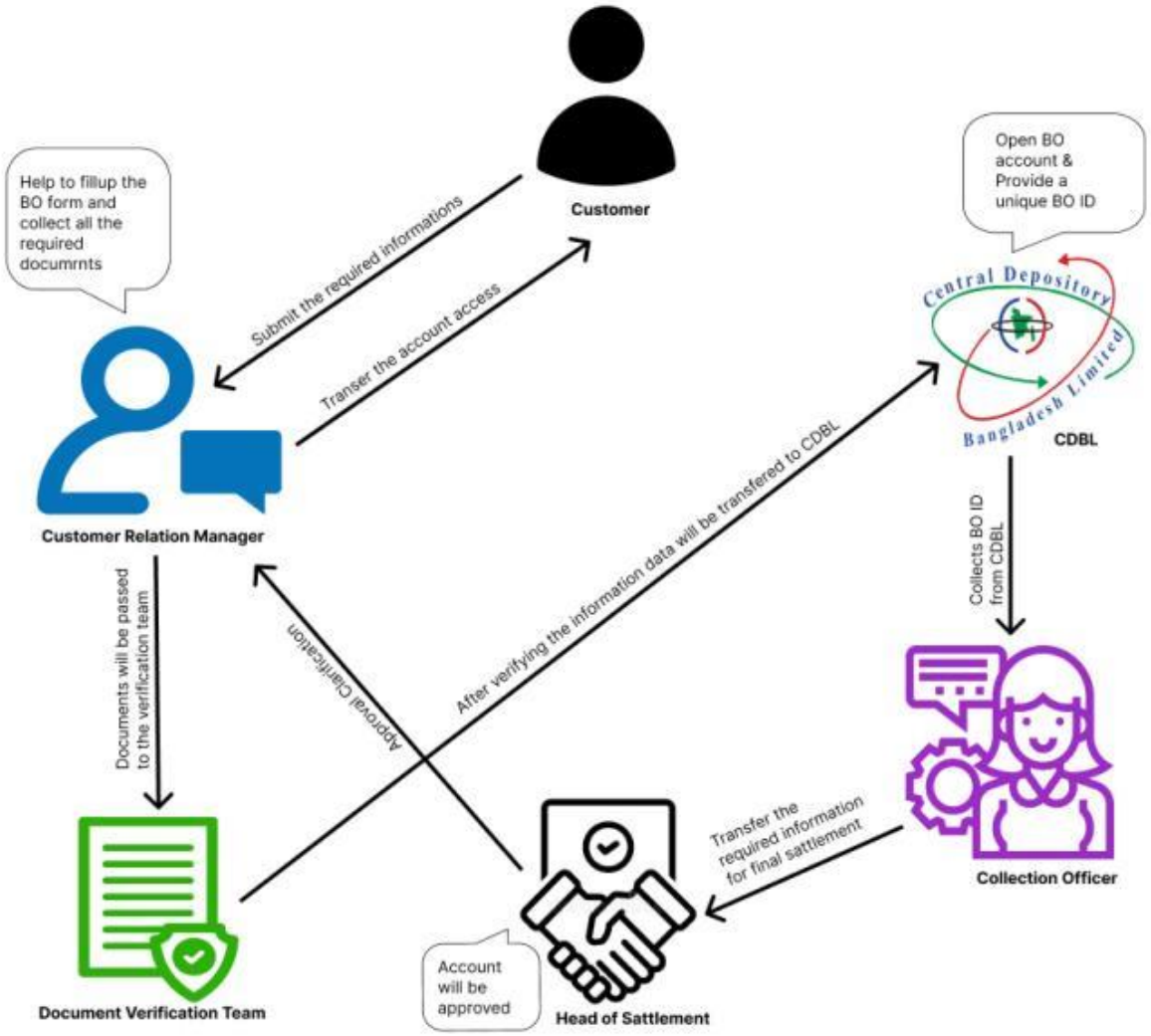
Scope of the project:

The scope is to assist in the effective and efficient implementation of the project through the following task:

- Create centralized database to store customer information securely
- Capture and manage basic customer details.
- Allow for the addition of custom fields to accommodate unique customer data
- Integrate communication tools like email and messaging for seamless communication with customers.
- Track and manage customer accounts, including account types and balances.
- Allow to have more than 2 nominee option
- Enable easy account creation, modification, and closure
- Implement Know Your Customer (KYC) and Anti-Money Laundering (AmL) checks and documentation storage.
- Record and track customer interactions, including calls, emails, meetings and transactions.
- Provide a timeline of customer engagement for better customer service
- Generate reports on customer engagement for better customer service.
- Define user roles with specific permissions to access and modify customer data
- Design the system to accommodate a growing customer base and increasing data volumes.

Chapter 02: Requirement Analysis

Rich Picture (As Is)



Six Element Analysis (As Is)

Process	Human	Non computing Hardware	Computing Hardware	Software	Database	Network and Communication
Fill up form	Customer User: 1.Customer provide information to the relationship manager. Relationship Manager: 1. Relationship manager help to fill up the form and collect all the required documents.	Pen and papers: 1. Pen and papers can be used to fill up the account form.	Computer: 1.All customers data are stored here for future purpose using computer.	Excel sheet: 1.Use to maintain data using excel.	My SQL Server: 1.All valid data will integrate with MS SQL Server.	Internet and Email: 1.Internet and mail are used to received account confirmation message.
Verification of customer information	Relationship manager: 1.Relationship manager receives customer information and verify the documents. 2. Based on the verification, give approval	Pen and paper: 1.Use pen and paper for normal entry.	Computer: Storing all data in the excel sheet.	Excel sheet: Use to check and verify data.	My SQL Server: All data will be check with MS SQL.	Internet and Email: To see the comment.

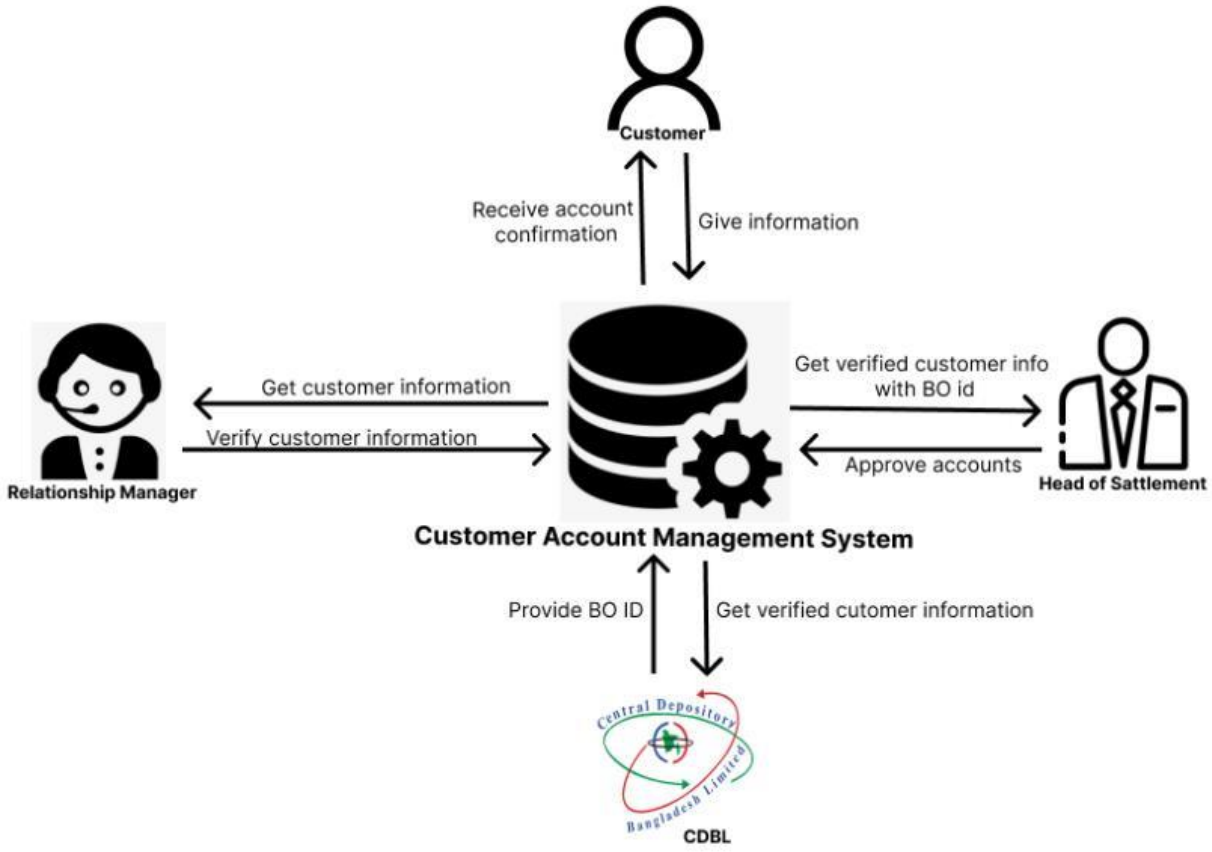
	or disapproval and give a comment. 3.Sent all the information to head of settlement. Head of settlement: 1.View all the information 2. Approve or decline the request 3.Comment the reason of approval or disapproval.					
Provide BO account No	CDBL: 1.All the information are sent by relationship manager and 2.Genarate BO account number based on all the information. 3.Relationship manager return BO account number to the customer.	Pen and paper: Pen and paper are used to initially store data.	Computer: Computers are used for providing BO account number.	Excel sheet: Used to store BO account number.	MY SQL server: Get the BO account through system and added manually in the MY SQL Server.	Internet and Email: 1.Internet is used for creating BO account. 2. Account number will sent through email.

Problem Analysis (As Is)

Process Name	Existing System Problems	Proposed Solution
User Interface and Experience	Users need a seamless and intuitive interface to trade stocks and securities efficiently.	Design a user-friendly interface with easy navigation and clear instructions. Provide real-time market data and charts for informed decision-making. Implement responsive design to ensure a consistent experience across devices.
Implementing Data Model and Storage	Users may need to add more than 2 nominees for each BO account.	Modify the database schema to allow for a dynamic number of nominees. Redesign the nominee management section of the user interface to accommodate an arbitrary number of nominees. This might involve a scrollable list, tabs, or other navigation patterns.
Implementing User Support and Education	Users may need assistance with using the platform and understanding financial concepts.	Provide responsive customer support through various channels (email, chat, phone).

		Implement a knowledge base to address common user queries. Offer comprehensive user guides and tutorials.

Rich Picture (To Be)



Six Element Analysis (To Be)

Process	Human	Non computing Hardware	Computing Hardware	Software	Database	Network and Communication
Fill up form	Customer User: 1.Customer gives all the information through the system. 2.Add nominee and provide information regarding it. Relationship Manager: 1. Relationship manager	Pen and papers: Users can use paper for printing purposes to keep a manual database. PDF: The data report can be viewed on a PDF format.	Computer device: Computer, mouse and keyboards used by LankaBangla users for displaying, selecting and inputting data on the system. Database servers are used by the CISM system for users for data entries.	CIMS: 1.It is an interface which stores data and is used by the LankaBangla users for data entries. Operating system: Any Operating system used by both the users and the data sourcing team like Mac, Windows, Linux.	Database system of CIMS: 1.Collection of data is updated into a database system of CISM by the LankaBangla users. MS Excel files/My SqL: MS Excel and MySql files can be used to	Internet Connection: Internet connection used by users that enable users to access the platform and submit information online. Mail: Mails can be exchanged between users and Admin for communication or notify about important information.

Verification of customer information	views customer information from the system. Relationship manager: 1.Relationship manager receives all customer information from the system and verify the documents 2. Based on the verification, give approval or disapproval and give a comment	Pen and paper: Pen and paper can be used for noting down the contacts or important notes. Printed Version: Officials might want to store a	Computer Device: Computing devices can be used by officials to view,verify and update the data in the CISM system. Data can be stored in the computer as a backup. Printer:	CISM: The CISM system is used by the officials to access the data provided by the users. It is used to input verification data It is also used for updating the verified data and commenting about it. Operating System: Any operating	restore the data by the data sourcing team. Database system of CISM: The CISM database is used by officials to verify data that is provided by users. The CISM database is used to input the validated data that was reviewed.	Internet: The Internet is used for reviewing the forms and reports submitted by the data sources from CISM databases The Internet is used to validate the forms and reports in the database. Telecommunication: Telecommunication methods like phone calls to confirm the information

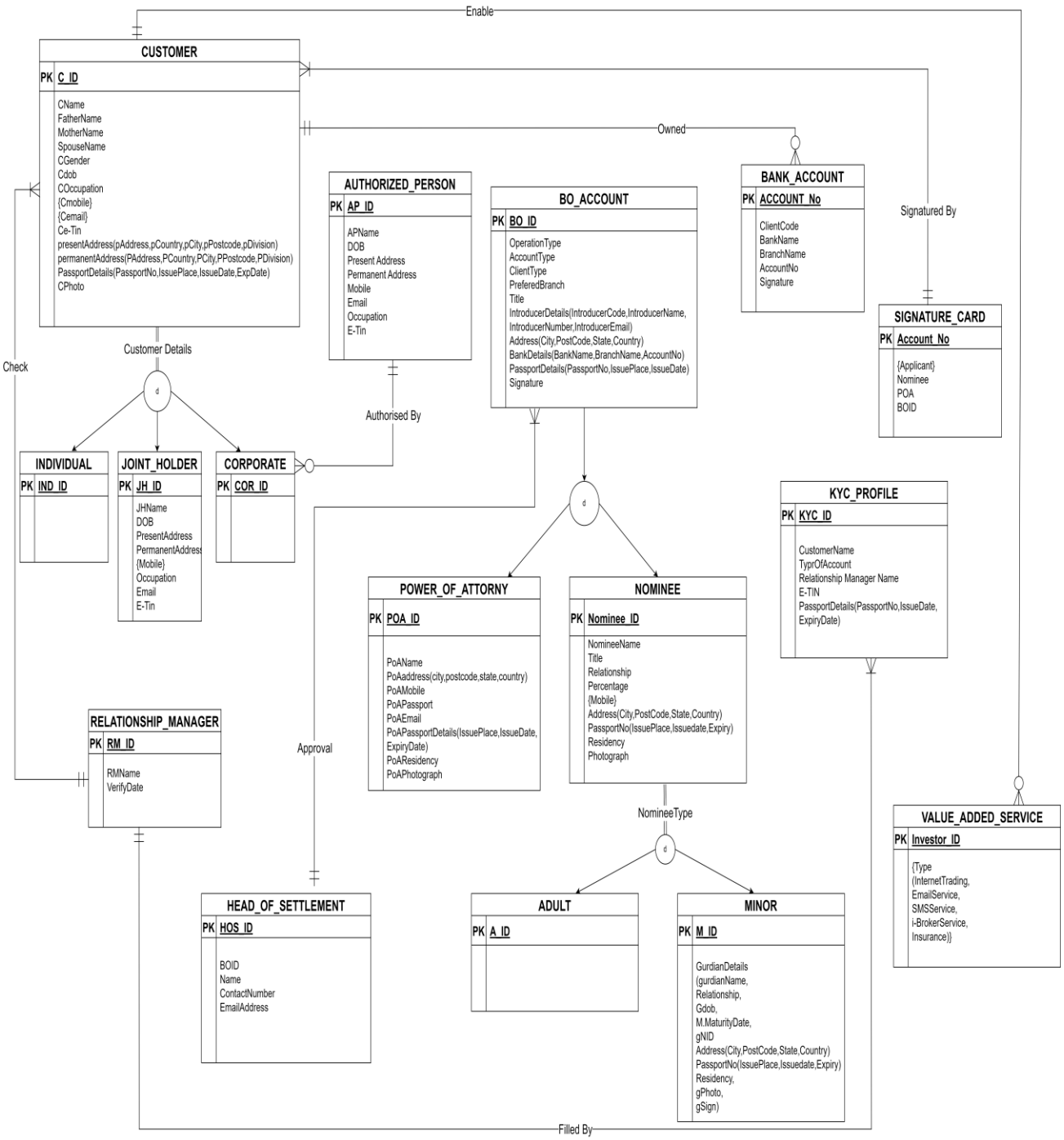
	through the system. 3.update all the information to the system. Head of settlement : 1.View all the information through the system 2. Approve or decline the request 3.Comment the reason for approval or disapproval.	Printed version of before and after version for execution of the verification Seal stamps: Seal stamps are used to verify the printed documents with official seals.	For printing the data sheet for manual backup by LankaBangla users. Application Software : Application Office or any other application is used to review, validate	system used by the LankaBangla users and the Policy Makers like Mac, Windows, Linux.	The CISM database is used to update the data which is already provided by the data sources. Excel File: Excel files are used to keep track of the reviewed , validated and updated data.	and details provided by the data sources. Mail: Mails can be exchanged between users and data sources for the verification process.

Provide BO account No Get notification	CDBL: 1.All the information are update by relationship manager 2.Generate BO account number based on all the information. 3.Relationship manager returns BO account number to the system. customer: 1.customer receives confirmation sms or email and get other notificatio	Pen and paper: 1. Pen and paper might be needed for storing manual reports of approval info. 2.Seal Stamps : seal stamps might be needed for the approval sign.	Computer device: Computers are used by RM to view the approval data and give a bo account in the CISM system.	CISM: 1.The CISM database validates the access of employees. 2.The CISM stores the list of approval and disapproval list. 3.The BO account number is returned to the customer through CISM.	Database : The CISM database stores the information of the BO account.	Internet: The Internet is used to view the list and to provide BO accounts.

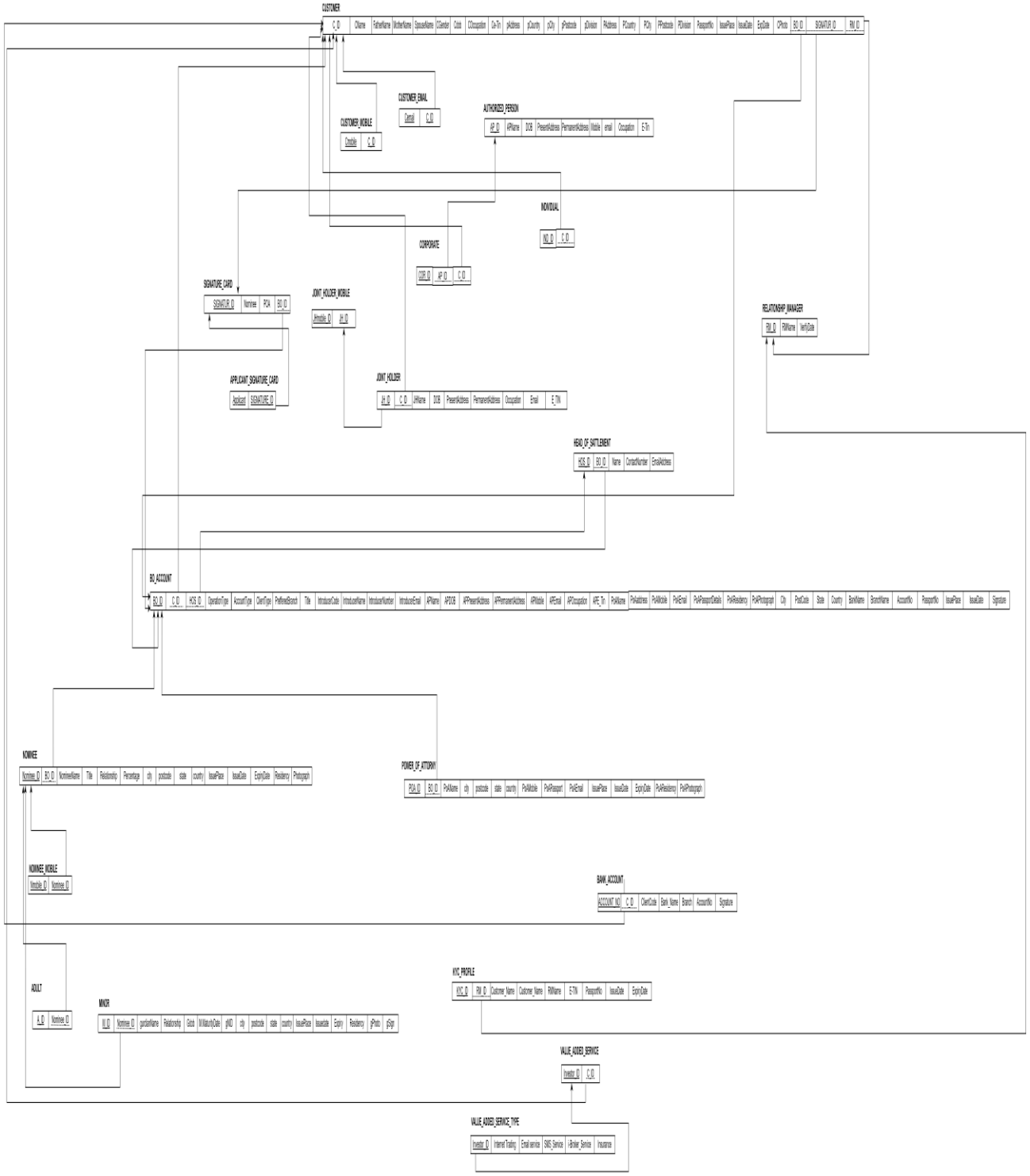
	ns from the system.					

Chapter 03: Logical System Design

Entity Relationship Diagram



Entity Relationship Diagram to Relational Schema



Normalization

Adult Nominee- AD

Corporate Customer - CC

Joint Customer- JC

Joint Holder - JH
INDIVIDUAL Customer - IC

Nominee - N

Power of Attorney - PA

Relationship Manager - RM

Head Of Settlement - HOS

Value Added Service - VAS

KYC Profile - KP

Signature Card - SC

Bank Account - BA

BO- B

Authorized person- AP

Customer-C

1NF

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13
C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26
AP1	AP2	AP3	AP4	AP5	AP6	AP7	AP8	AP9	**B1**	B2	B3	B4
B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
B31	B32	B33	B34	B35	B36	BA1	BA2	BA3	BA4	BA5	SC1	SC2
SC3	SC4	KP1	KP2	KP3	KP4	KP5	KP6	VAS1	VAS2	VAS3	VAS4	VAS5
VAS6	HOS1	HOS2	HOS3	HOS4	RM1	RM2	RM3	PA1	PA2	PA3	PA4	PA5
PA6	PA7	PA8	PA9	PA 10	PA 11	PA 12	PA 13	PA 14	N1	N2	N3	N4
N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	IC1	CC1
JC1	JC2	JC3	JC4	JC5	JC6	JC7	JC8	JC8	AD1	MN1	MN2	MN3
MN4	MN5	MN6	MN7	MN8	MN9	MN10	MN11	MN12	MN13	MN14	MN15	MN16

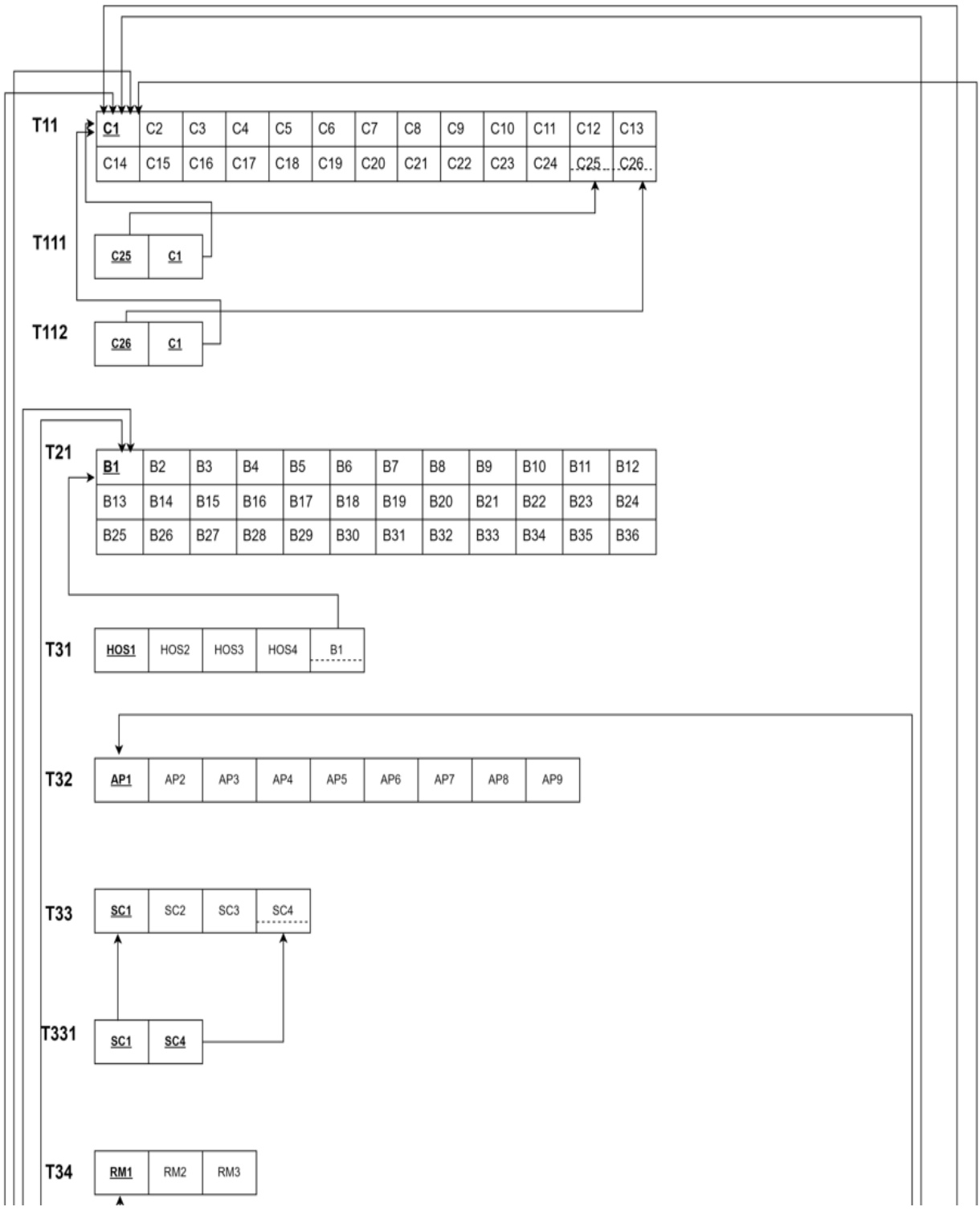
2NF

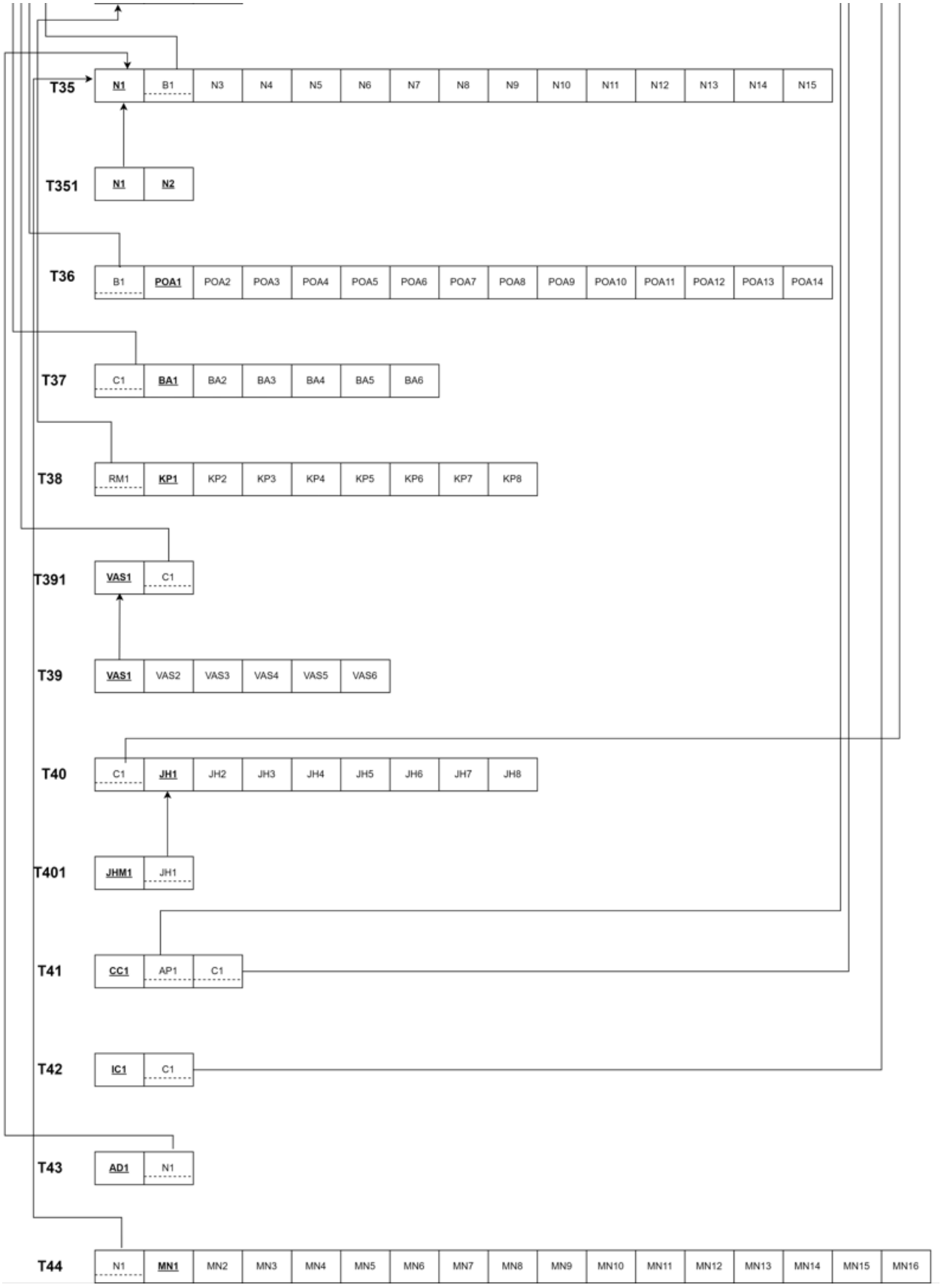
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13
C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26

B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36

C1	**B1**	BA1	BA2	BA3	BA4	BA5	AP1	AP2	AP3	AP4	AP5
AP6	AP7	AP8	AP9	SC1	SC2	SC3	SC4	KP1	KP2	KP3	KP4
KP5	KP6	VAS1	VAS2	VAS3	VAS4	VAS5	VAS6	HOS1	HOS2	HOS3	HOS4
RM1	RM2	RM3	PA1	PA2	PA3	PA4	PA5	PA6	PA7	PA8	PA9
PA10	PA11	PA12	PA13	PA14	N1	N2	N3	N4	N5	N6	N7
N8	N9	N10	N11	N12	N13	N14	N15	IC1	CC1	JC1	JC2
JC3	JC4	JC5	JC6	JC7	JC8	AD1	MN1	MN2	MN3	MN4	MN5
MN6	MN7	MN8	MN9	MN10	MN11	MN12	MN13	MN14	MN15	MN16	

3NF


T11
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13
C14 C15 C16 C17 C18 C19 C20 C21 C22 C23 C24 C25 C26
T111
C25 C1
T112
C26 C1
T21
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12
B13 B14 B15 B16 B17 B18 B19 B20 B21 B22 B23 B24
B25 B26 B27 B28 B29 B30 B31 B32 B33 B34 B35 B36
T31
HOS1 HOS2 HOS3 HOS4 B1
T32
AP1 AP2 AP3 AP4 AP5 AP6 AP7 AP8 AP9
T33
SC1 SC2 SC3 SC4
T331
SC1 SC4
T34
RM1 RM2 RM3


T35
N1
B1
N3
N4
N5
N6
N7
N8
N9
N10
N11
N12
N13
N14
N15
T351
N1
N2
T36
B1
POA1
POA2
POA3
POA4
POA5
POA6
POA7
POA8
POA9
POA10
POA11
POA12
POA13
POA14
T37
C1
BA1
BA2
BA3
BA4
BA5
BA6
T38
RM1
KP1
KP2
KP3
KP4
KP5
KP6
KP7
KP8
T391
VAS1
C1
T39
VAS1
VAS2
VAS3
VAS4
VAS5
VAS6
T40
C1
JH1
JH2
JH3
JH4
JH5
JH6
JH7
JH8
T401
JHM1
JH1
T41
CC1
AP1
C1
T42
IC1
C1
T43
AD1
N1
T44
N1
MN1
MN2
MN3
MN4
MN5
MN6
MN7
MN8
MN9
MN10
MN11
MN12
MN13
MN14
MN15
MN16

BCNF

All the relations that are in 3NF, are also in BCNF as no non-key identifies the PK or part of the PK.

Data Dictionary

tbl_customer

Name	Data type	Size	Remark
C_ID	INT	12	This is the primary key of this relationship. This contains the ID of CUSTOMER Example: “23700658”
CName	VARCHAR	150	This is the name of the Customer Example: “Durjoy Jacob”
FatherName	VARCHAR	150	This is the name of the Customer’s father.
MotherName	VARCHAR	150	This is the name of the Customer’s Mother.
SpouseName	VARCHAR	150	This is the name of the Customer’s Spouse.
CGender	VARCHAR	8	It helps to identify whether the customer is male or female. E.g. “Female”
Cdob	DATE	DD MM YYYY	This is the date of birth of Customer E.g.. “17/12/2001”
COccupation	VARCHAR	60	This is the occupation of the Customer
Ce-tin	VARCHAR	15	This is the Tin Number of the customer.
pAddress	VARCHAR	150	This represents the customer's residence where they live.

pCountry	VARCHAR	30	This represents the customer's country where they live.
pCity	VARCHAR	30	This represents the customer's city where they live.
pPostCode	VARCHAR	15	This represents the postal code of where they live.
pDivision	VARCHAR	20	This represents the customer's division where they live.
ParAddress	VARCHAR	150	This represents the customer's permanent residence where they stay.
ParCountry	VARCHAR	30	This represents the customer's permanent country where they live.
ParCity	VARCHAR	30	This represents the customer's permanent city where they live
ParPostCode	NUMERIC	15	This represents the postal code of permanent residence where they live.
ParDivision	VARCHAR	20	This represents the customer's permanent division where they live.
CPhoto	VARCHAR	255	This represents the customer’s photo.

tbl_customerMobile

Name	Data type	Size	Remark
Cmobile	VARCHAR	20	This is the mobile number of the customer and also the primary key of this relationship.. E.g.-”01944555765”

C_ID	VARCHAR	12	This is the primary key of this relationship. This contains the ID of CUSTOMER Example: “23700658”

tbl_customeremail

Name	Data type	Size	Remark
CEmail	VARCHAR	30	This is the customer's email address and the relationship's primary key. E.g.- “pqr@iub.edu.bd”
C_ID	VARCHAR	40	This is the primary key of this relationship. This contains the ID of CUSTOMER Example: “23700658”

tbl_individual

Name	Data type	Size	Remark
IND_ID	INT	11	This is the primary key of this relationship. This contains the ID of INDIVIDUAL. Example: “23774558”

tbl_jointholder

Name	Data type	Size	Remark
JH_ID	INTEGER	12	This is the primary key of this relationship. This contains the ID of Joint Holder. Example: “45774558”

JHName	VARCHAR	60	This is the name of the Joint Holder. Example: “Abdun Noor”
DOB	DATE	DD MM YYYY	This is the date of birth of the Joint Holder. E.g.. “17/2/1995”
PresentAddress	VARCHAR	150	This represents the joint holder’s residence where they live. E.g.-12/3,Middle Badda,Dhaka-1212
PermanentAddress	VARCHAR	150	This represents the joint holder's permanent residence where they stay. E.g.- House No-5,RoadNo-3,Uttara,Dhaka.
Occupation	VARCHAR	60	This is the occupation of the Joint holder. E.g.-”Teacher”.
E-mail	VARCHAR	30	This is the email address of the Joint Holder. E.g.- “xyz@iub.edu.bd”
E-tin	VARCHAR	20	This is the Tin Number of the Joint holder. E.g.-”45673899288”
JHPhoto	VARCHAR	255	This represents the JHPhoto.

tbl_JHMobile

Name	Data type	Size	Remark
JH_ID	INT	12	This is the primary key of this relationship. This contains the ID of Joint Holder. Example: “45774558”

JHMobile	VARCHAR	15	This is the mobile number of the joint holder. E.g.-”01944555765”

tbl_Corporate

Name	Data type	Size	Remark
COR_ID	INT	12	This is the primary key of this relationship. This contains the ID of Corporate. Example: “45774558”

tbl_AuthorizedPerson

Name	Data type	Size	Remark
AP_Id	INT	12	This is the primary key of this relationship. This contains the ID of Authorized person. Example: “78774558”
APName	VARCHAR	150	This is the name of the Authorized Person. E.g.: ”Sakibul Hasan”
DOB	DATE	DD MM YYYY	This is the date of birth of Customer E.g.. “21/12/1999”
PresentAddress	VARCHAR	150	This represents the joint holder’s residence where they live. E.g.-12/3,Middle Badda,Dhaka-1212
PermanentAddress	VARCHAR	150	This represents the joint holder's permanent residence where they stay.

			E.g.- House No-5,RoadNo-3,Uttara,Dhaka.
Mobile	VARCHAR	15	This is the mobile number of the joint holder. E.g.- “01784555765”
Email	VARCHAR	25	This is the email address of the Joint Holder. E.g.“str@iub.edu”
Occupation	VARCHAR	30	This is the occupation of the Authorized Person. E.g.- “ Executive Officer”
E-tin	VARCHAR	15	This is the Tin Number of the Authorized Person. E.g.-”45673899288”

tbl_BOAccount

Name	Data type	Size	Remark
Bo_ID	INT	12	This is the primary key for BO Account. Example: “5576745”
OperationType	VARCHAR	15	This represents the type of operational action. E.g.- “Individual”
AccountType	VARCHAR	15	This represents the type of account. E.g.- “Direct trading with no margin”
ClientType	VARCHAR	15	This represents the type of client. E.g.- “Regular”

PreferredBranch	VARCHAR	15	This represents the preferable branch of which the customer wants to open an account. E.g.- “Dhanmondi”
Tittle	VARCHAR	15	This represents the title of any designation of a customer. E.g.- “Dr.”
IntroducerCode	VARCHAR	12	This represents the introducer code. E.g.- “6665i”
IntroducerName	VARCHAR	100	This represents the name of the introducer. E.g.- “Tasfiq Jahid”
IntroducerNumber	VARCHAR	15	This is the mobile number of the Introducer. E.g.- “01748487531”
IntroducerEmail	VARCHAR	20	This is the email address of the Joint Holder. E.g.- “xyz@iub.edu.bd”
City	VARCHAR	15	This represents the customer's city where they live which originated from the customer table. E.g.- “Dhaka”
PostCode	VARCHAR	10	This represents the customer's post code which originated from the customer table. E.g.- “1217”
State	VARCHAR	20	This represents the customer's state which originated from the customer table.

Country	VARCHAR	20	This represents the customer's country where they live which originated from the customer table. E.g.- “Bangladesh”
BankName	VARCHAR	50	This is the name of the bank from which a customer wants to deposit money. E.g.- “Janata Bank”
BranchName	VARCHAR	20	It represents the branch name of the Bank. E.g.- “Gulshan”
AccountNo	INT	12	It represents the account no of the Bank. E.g.- “57483838”
PassportNo	INT	15	This is the passport no. of the customer. E.g.- “564773388383”
IssuePlace	VARCHAR	20	It represents the place from where the passport is issued. E.g.- “Dhaka”
IssueDate	DATE	DD MM YYYY	It represents the date when the passport is issued. E.g.- “5/4/2021”
Signature	VARCHAR	255	It represent the signature of customer.

tbl_PowerofAttorney

Name	Data type	Size	Remark
PoA_ID	INT	12	This is the primary key for this relationship that represents the ID of power of attorney. Example: “4566745”
PoAName	VARCHAR	60	This represents the name of the power of attorney. E.g.- “Toki Tahmid”
City	VARCHAR	20	This represents the city where the power of attorney lives. E.g.- “Dhaka”
Postcode	VARCHAR	4	This represents the postcode of the area where the power of attorney lives. E.g.- “1212”
State	VARCHAR	20	This represents the state where the power of attorney stays.
Country	VARCHAR	20	This represents the country where the power of attorney lives. E.g.- “Bangladesh”
PoAMobile	VARCHAR	15	This is the mobile number of the joint holder. E.g.- “01633244253”
PoAPassport	VARCHAR	10	This is the passport no. of the power of attorney. E.g.- “564773388383”
PoAEmail	VARCHAR	30	This is the email address of the Joint Holder. E.g.- “pqr@iub.edu.bd”

IssuePlace	VARCHAR	20	It represents the place from where the passport is issued. E.g.- “Dhaka”
IssueDate	DATE	DD MM YYYY	It represents the date when the passport is issued. E.g.- “5/4/2021”
ExpiryDate	DATE	DD MM YYYY	It represents the date when the passport will expire. E.g.- “5/4/2021”
PoAResidency	VARCHAR	20	It helps to identify the residency. E.g.- “Resident”
PoAPhotograph	VARCHAR	100	

tbl_Nominee

Name	Data type	Size	Remark
Nominee_Id	INT	12	This is the primary key for this relationship that represents the ID of the nominee. Example: “3466745”
NomineeName	VARCHAR	120	This represents the name of the nominee. E.g.- “Sadia Rafa”
Tittle	VARCHAR	5	This represents the title of any designation of a customer. E.g.- “Engr.”
Relationship	VARCHAR	10	It represents the relationship with the client. E.g.- “Son”

Percentage	VARCHAR	4	It represents the percentage of shares. E.g.- “45%”
Mobile	VARCHAR	15	This is the mobile number of the nominee. E.g.- “01344743567”
City	VARCHAR	20	This represents the city where the nominee lives. E.g.- “Barisal”
PostCode	VARCHAR	20	This represents the postcode of the area where the nominee lives. E.g.- “1212”
State	VARCHAR	20	This represents the state where the nominee stays.
Country	VARCHAR	20	This represents the country where the nominee lives. E.g.- “Bangladesh”
IssuePlace	VARCHAR	20	It represents the place from where the passport is issued. E.g.- “Dhaka”
IssueDate	DATE	DD MM YYYY	It represents the date when the passport is issued. E.g.- “5/4/2021”
ExpiryDate	DATE	DD MM YYYY	It represents the date when the passport will expire. E.g.- “5/4/2021”
Residency	VARCHAR	20	It helps to identify the residency. E.g.- “Non-Resident”
Photograph	VARCHAR	100	It represents the photo of the nominee.

tbl_Adult

Name	Data type	Size	Remark
A_ID	INT	12	This is the primary key for this relationship that represents the ID of the Adult nominee. Example: “3466745”

tbl_Minor

Name	Data type	Size	Remark
M_ID	INT	12	This is the primary key for this relationship that represents the ID of the Adult nominee. Example: “3466745”
GuardianName	VARCHAR	150	This is the name of the guardian. E.g.: ”Sakibul Hasan”
Relationship	VARCHAR	150	It represents the relationship with the client. E.g.- “Father”
Gdob	DATE	DD MM YYYY	This is the date of birth of the guardian. E.g.. “21/12/1999”
M_MaturityDate	DATE	DD MM YYYY	It represents the date when the minor will be matured for the account. E.g.- “5/4/2028”

gNID	VARCHAR	20	This is the Tin Number of the guardian. E.g.- “7523485729374”
City	VARCHAR	20	This represents the city where the guardian lives. E.g.- “Barisal”
PostCode	VARCHAR	10	This represents the postcode of the area where the guardian lives. E.g.- “1212”
State	VARCHAR	20	This represents the state where the nominee stays.
Country	VARCHAR	20	This represents the country where the guardian lives. E.g.- “Bangladesh”
IssuePlace	VARCHAR	20	It represents the place from where the passport is issued. E.g.- “Dhaka”
IssueDate	DATE	DD MM YYYY	It represents the date when the passport is issued. E.g.- “5/4/2021
ExpiryDate	DATE	DD MM YYYY	It represents the date when the passport will expire. E.g.- “5/4/2021”
Residency	VARCHAR	15	It helps to identify the residency. E.g.- “Non-Resident”
gPhoto	VARCHAR	100	It represents the photo of the guardian.
gSign	VARCHAR	20	It represents the signature of the guardian.

tbl_RelationashipManager

Name	Data type	Size	Remark
RM_ID	INT	12	This is the primary key for this relationship that represents the ID of the Relational Manager. Example: “3466745”
RMName	VARCHAR	60	This is the name of the guardian. E.g.: ”Sanjida Nadia”
VerifyDate	DATE	DD MM YYYY	It represents the date when the account will be verified. E.g.- “Dhaka”

tbl_HeadofSettlement

Name	Data type	Size	Remark
HOS_ID	INT	12	This is the primary key for this relationship that represents the ID of the Head of Settlement. Example: “6746745”
BO_ID	INTEGER	12	This contains the ID of BO Account. Example: “583758”
Name	VARCHAR	100	This is the name of theHead Of Settlement. E.g.: ”Durjoy Jacob”
ContactNumber	VARCHAR	15	This is the contact number of the Head of settlement. E.g.- “01344743567”

EmailAddress	VARCHAR	20	This is the email address of the Head of settlement. E.g.- “str@iub.edu.bd”

tbl_BankAccount

Name	Data type	Size	Remark
Account No	INT	12	It represents the account no of the Bank. E.g.- “57483838”
ClientCode	VARCHAR	15	This represents the ClientCode E.g.- “6665i”
BankName	VARCHAR	50	This is the name of the bank from which a customer wants to deposit money. E.g.- “Janata Bank”
Branchname	VARCHAR	70	This is the name of the branch from which a customer wants to deposit money. E.g.- “Motijheel”
Signature	VARCHAR	255	It represents the signature of the guardian.

tbl_SignatureCard

Name	Data type	Size	Remark
SignatureId	INT	12	This is the primary key for this relationship that represents the SignatureId Example: “3466745
Nominee	VARCHAR	100	It represents the signature of the nominee.
POA	VARCHAR	100	It represents the signature of the power of attorney.

BO ID	INTEGER	12	This contains the ID of BO Account. E.g.;“45774558”

tbl_ApplicantSignatureCard

Name	Data type	Size	Remark
SignatureId	INT	12	
Applicant	VARCHAR	100	It represents the signature of the applicant.

tbl_KYCProfile

Name	Data type	Size	Remark
KYC_ID	INT	12	This is the primary key for BO KYC Profile. Example: “5555745”
CustomerName	VARCHAR	150	This represents the name of the introducer. E.g.- “Tasfiq Jahid”
TypeofAccount	VARCHAR	50	This represents the account type E.g.- “individual/joint”
Relational Manager Name	VARCHAR	100	This represents the name of the introducer. E.g.- “Utpal Mondal”

E-tin	VARCHAR	15	This is the Tin Number of the Customer. E.g.- ”45673899288”
PassportNo	VARCHAR	15	This represents the passport number of the customer E.g.. 2565487212
IssueDate	DATE	DD MM YYYY	This represents the passport issue date of the customer E.g.. 15/11/2001
ExpiryDate	DATE	DD MM YYYY	This represents the passport expiry date of the customer E.g.. 15/11/2010

tbl_ValueAddedService

Name	Data type	Size	Remark
Investor_Id	INT	12	This is the primary key for investors. Example: “2210456987”

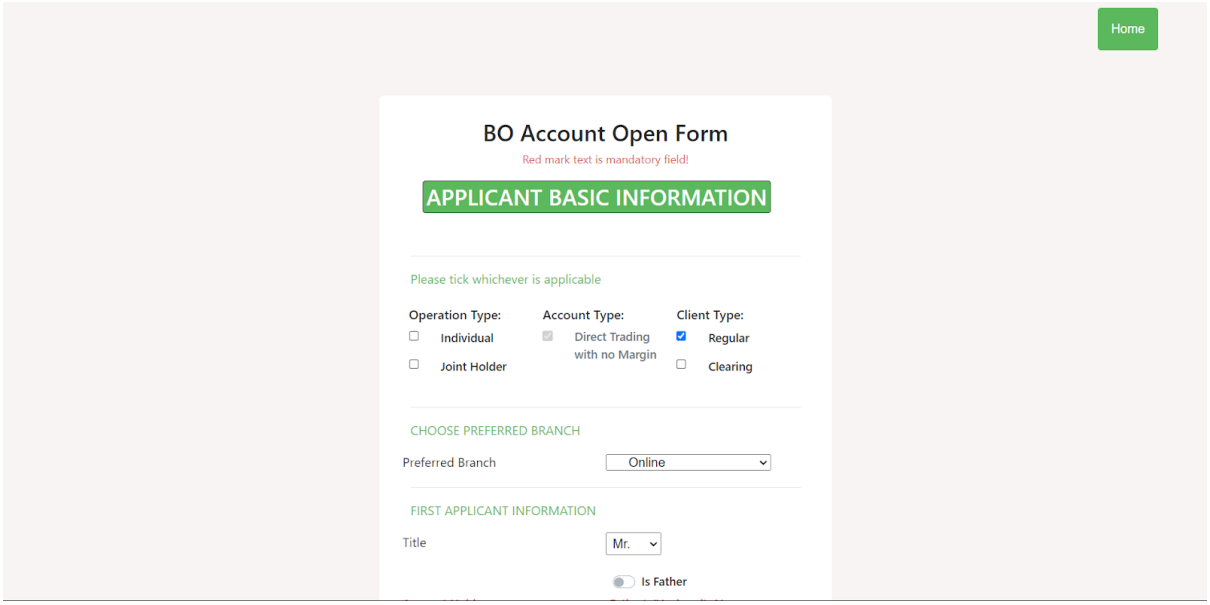
tbl_ValueAddedService_Type

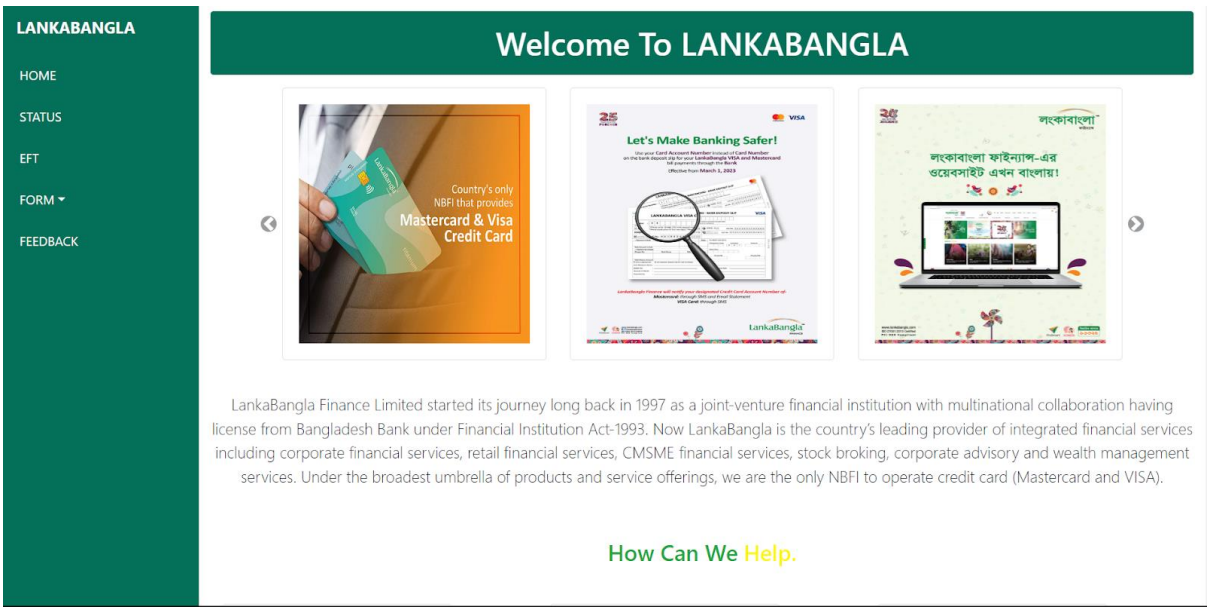
Name	Data type	Size	Remark
Type	VARCHAR	50	This represents the name of a service called VAS. Customer can activate the service if he wishes.

InternetTrading	VARCHAR	5	This attribute indicates whether the customer avails internet trading service or not.
EmailService	VARCHAR	5	This attribute indicates whether the customer avails Email service or not.
SMSService	VARCHAR	5	This attribute indicates whether the customer avails SMS service or not.
I-brokerService	VARCHAR	5	This attribute indicates whether the customer avails i-broker service or not.
Insurance	VARCHAR	5	This attribute indicates whether the customer avails insurance service or not.

Chapter 04: Physical System Design

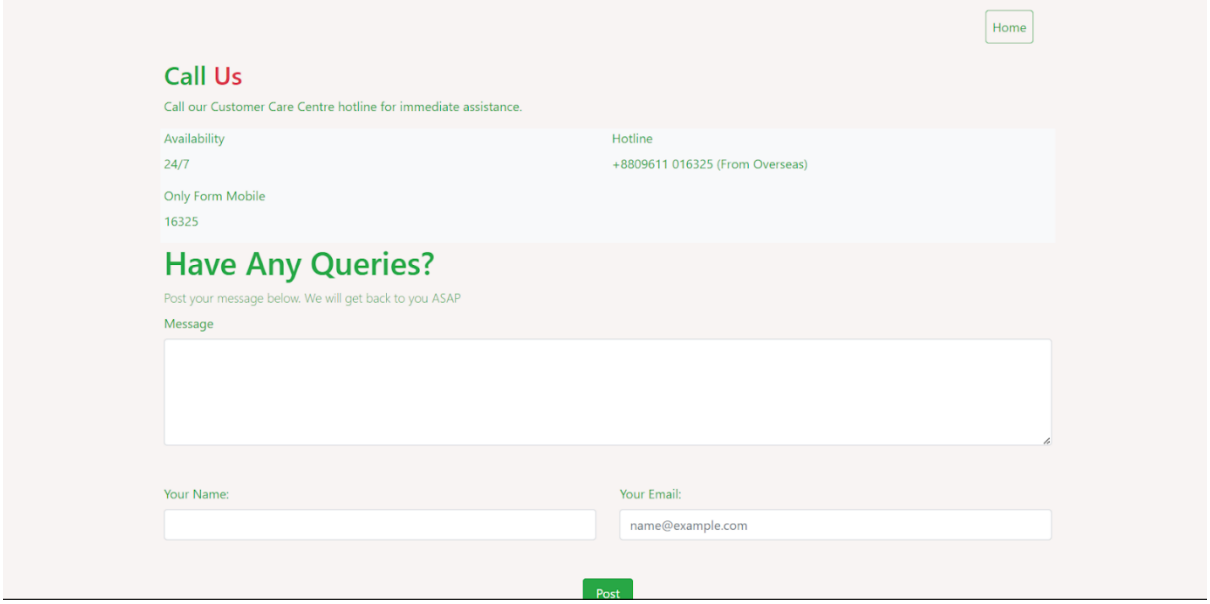
Creating customer Table:





SQL:

```
CREATE TABLE tbl_customer ( C_ID int(12) UNSIGNED NOT NULL
PRIMARY KEY, CName varchar(150) NOT NULL, FatherName varchar(150)
NOT NULL, MotherName varchar(150) NOT NULL, SpouseName varchar(150)
NOT NULL, CGender varchar(8) NOT NULL, Cdob date NOT NULL,
COccupation varchar(60) NOT NULL, Ce-tin varchar(15) NOT NULL, pAddress
varchar(150) NOT NULL, pCountry varchar(30) NOT NULL, pCity varchar(30)
NOT NULL, pPostCode varchar(15) NOT NULL, pDivision varchar(20) NOT
NULL, ParAddress varchar(150) NOT NULL, ParCountry varchar(30) NOT
NULL, ParCity varchar(30) NOT NULL, ParPostCode varchar(15) NOT NULL,
ParDivision varchar(20) NOT NULL, CPhoto varchar(255) NOT NULL
);
```



Creating customermobile table:

CREATE TABLE tbl_customermobile (C_ID int(12) UNSIGNED NOT NULL FOREIGN KEY (C_ID) REFERENCES tbl_customer (C_ID), Cmobile varchar(20) NOT NULL
);

Creating customeremail table:

CREATE TABLE tbl_customeremail (C_ID int(12) UNSIGNED NOT NULL FOREIGN KEY (C_ID) REFERENCES tbl_customer (C_ID), CEmail varchar(40) NOT NULL);

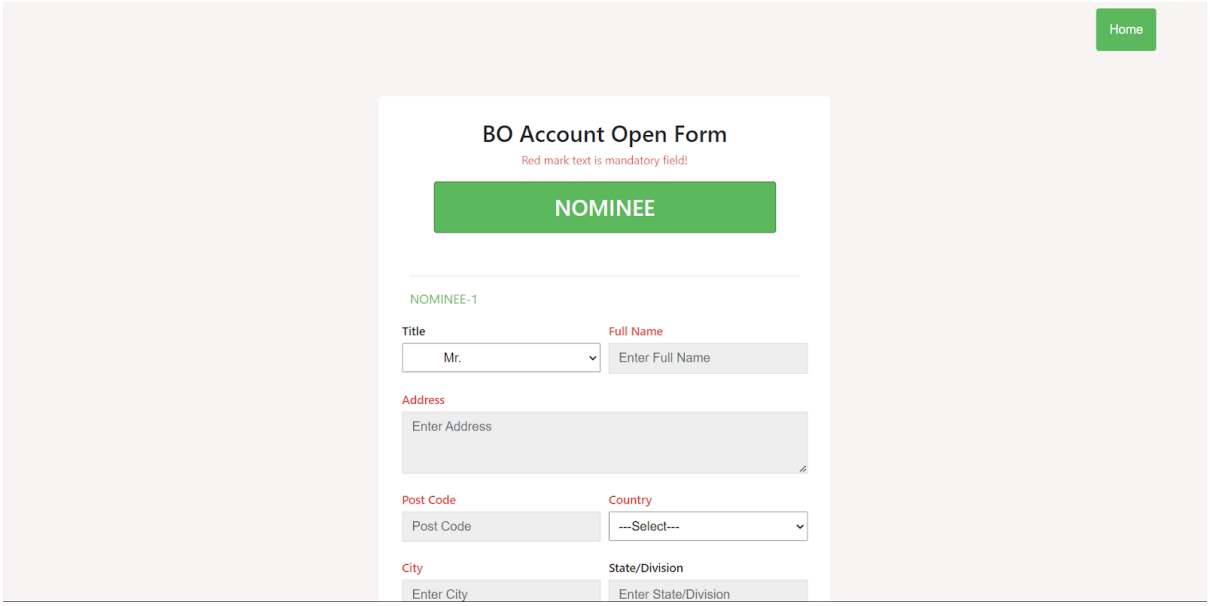
Creating boaccount table:

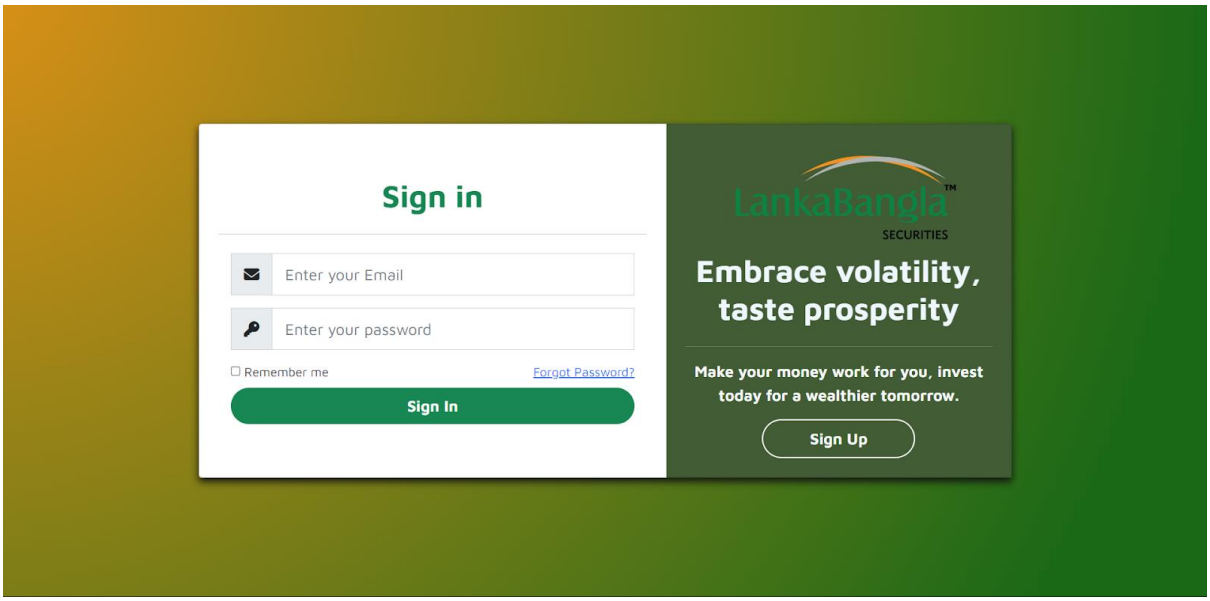
-

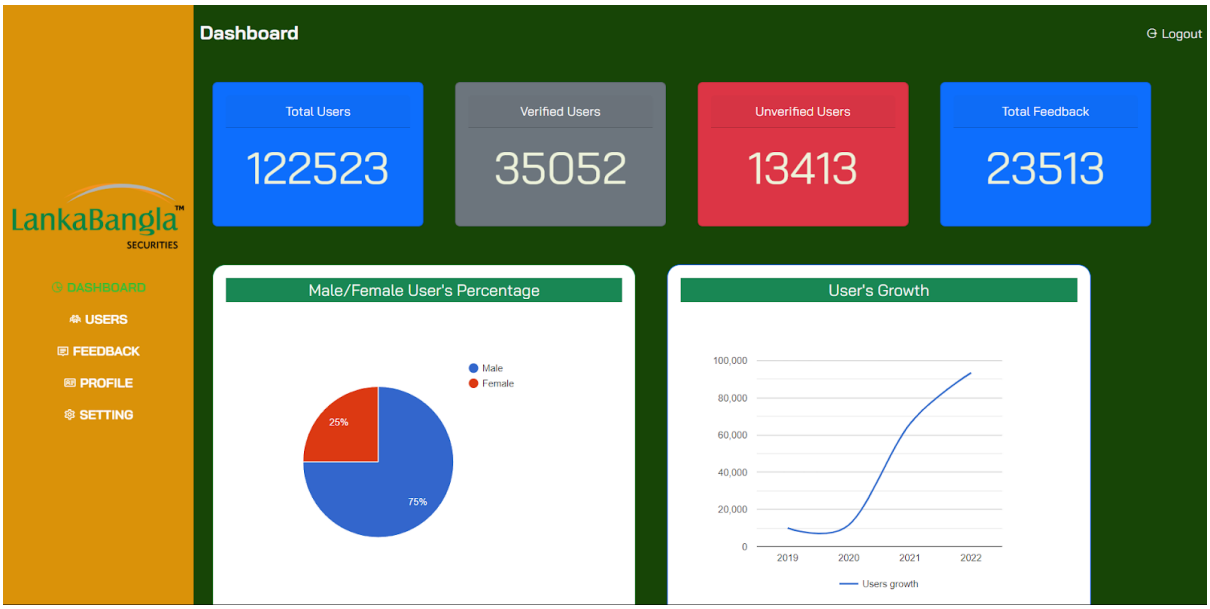
CREATE TABLE tbl_boaccount (Bo_ID int(12) UNSIGNED NOT NULL PRIMARY KEY, OperationType varchar(15) NOT NULL, AccountType varchar(15) NOT NULL, ClientType varchar(15) NOT NULL, PreferredBranch varchar(15) NOT NULL, Tittle varchar(15) NOT NULL, IntroducerCode int(12) NOT NULL, IntroducerName varchar(100) NOT NULL, IntroducerNumber varchar(15) NOT NULL, IntroducerEmail varchar(20) NOT NULL, City varchar(15) NOT NULL, PostCode varchar(10) NOT NULL, State varchar(20) NOT NULL, Country varchar(20) NOT NULL, BankName varchar(50) NOT NULL, BranchName varchar(20) NOT NULL, AccountNo int(15) NOT NULL, PassportNo varchar(15) NOT NULL, IssuePlace varchar(20) NOT NULL, IssueDate date NOT NULL, Signature varchar(255) NOT NULL, 'C_ID' int(12) UNSIGNED FOREIGN KEY (C_ID) REFERENCES tbl_customer (C_ID)
);

Creating authorizedperson table:

CREATE TABLE tbl_authorizedperson (AP_Id int(12) UNSIGNED NOT NULL PRIMARY KEY, APName varchar(150) NOT NULL, DOB date NOT NULL, PresentAddress varchar(150) NOT NULL, PermanentAddress varchar(150) NOT NULL, Mobile varchar(15) NOT NULL, Email varchar(25) NOT NULL, Occupation varchar(30) NOT NULL, E-tin varchar(15) NOT NULL 'BO_ID' int(12) FOREIGN KEY (BO_ID) REFERENCES tbl_boaccount (BO_ID)
);



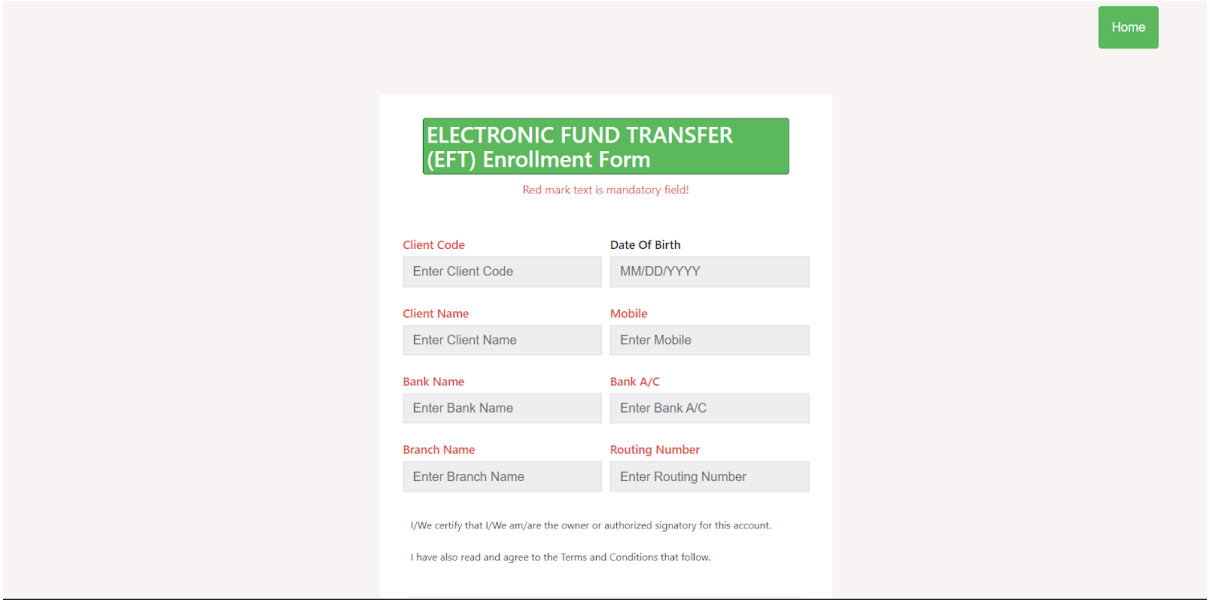




SQL:

SELECT *
FROM tbl_customer, tbl_boaccount, tbl_nominee;

```
SELECT *
FROM tbl_customer, tbl_boaccount, tbl_authorizedperson,tbl_nominee;
UPDATE tbl_customer SET CName='$name', FatherName='$fname',
MotherName='$mname', SpouseName='$sname', CGender='$gender',
Cdob='$date', COccupation='$occupation', Ce-tin='$etin', pAddress='$pAddress',
pCountry='$pcountry', pCity='$pcity', pPostCode='$ppostcode',
pDivision='$pdivision', ParAddress='$parAddress', ParCountry='$parcountry',
ParCity='$parcity', ParPostCode='$parpostcode', ParDivision='$pardivision',
CPhoto='$photo' WHERE id=$id;
```



SQL:

```
INSERT INTO tbl_customer SET C_ID=$id, CName='$name',
FatherName='$fname', MotherName='$mname', SpouseName='$sname',
CGender='$gender', Cdob='$date', COccupation='$occupation', Ce-tin='$etin',
pAddress='$pAddress', pCountry='$pcountry', pCity='$pcity',
pPostCode='$ppostcode', pDivision='$pdivision', ParAddress='$parAddress',
ParCountry='$parcountry', ParCity='$parcity', ParPostCode='$parpostcode',
ParDivision='$pardivision', CPhoto='$photo' ;
```

Chapter 05: Conclusion

Conclusion & Recommendation:

By developing this BO form project, it was found that correct form fillup helps a customer learn more about the company and encourages them to invest in the company. Lanka Bangla Securities Limited's impressive financial performance is evident in its consistent revenue growth and profitability over the years. Their diverse portfolio of services, from brokerage to research and advisory services, positions them as a comprehensive financial partner for individual and institutional investors. In such a case, Lanka Bangla is expected to get more investors and play an important role in the overall development of the company.

Additional Feature & Future Development:

1. Developing a dedicated mobile app for customers can provide them with more convenient access to their accounts and financial services on their smartphones. It should offer features like account management, loan applications, and fund transfers.

2. Developing a section with articles, videos, and tutorials on financial literacy, investment strategies, and loan management to help customers make informed choices.

3. Customers data should be encrypted.

4. Implementing a feedback system that allows users to provide suggestions and report issues, helping the company make ongoing improvements.

5. Introduce a sustainability dashboard that tracks a user's environmental and social impact based on their investments, offering suggestions for more sustainable financial choices.

References

https://en.wikipedia.org/wiki/LankaBangla_Finance_Limited