



**INSTITUTE FOR
ADVANCED COMPUTING
AND SOFTWARE DEVELOPMENT
AKURDI, PUNE**

Documentation On

**“Ethical Home Loan –
HOME LOAN SERVICE”**

PG-DAC SEPT 2022

Submitted By:

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ACKNOWLEDGEMENT

Home Loan Service project has presented, an objective, a goal, a challenge. This project marks the final hurdle that we tackle, of hopefully what would be one of the many challenges we have taken upon and yet to take.

However, we could not have made it without the support and guidance from the following. Firstly, we want to take this opportunity to have special thank's to our guide **Mrs. Sonali Mogal** who helped us throughout this project by providing valuable guidance and advice as well as acquiring all components needed for this project to become a success.

(PG-DAC September 2022)

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HOME LOAN SERVICE

Abstract:

The project entitled “Home Loan Service” is to be developed for maintaining the bank activities like, customer preferences, customer enquiry, interest rates, customer EMI, personal loan, mortgage loan, Home Loan, Customer follow ups details, customer feedback from entry and employee details.

The system is efficient in generating reports which will help in the maintaining records of the customer. Microfinance is a project which has become a mainstream instrument for providing access to formal financial services for common people. This project is developed to maintain all the details of the users and to develop online portal.

INTRODUCTION

A home loan is a secured loan that is obtained to purchase a property by offering it as collateral. Home loans offer high-value funding at economical interest rates and for long tenors. They are repaid through EMIs. After repayment, the property's title is transferred back to the borrower.

The project objective is to create a web-based application for banks and financial institutions to manage home loan applications from their administrative backend. The backend will be responsible for managing the loan application process, which includes validating user inputs, processing applications, and storing data in a database.

The frontend will be user-friendly, with a dashboard that provides an overview of all applications, filters to search for specific loan applications, and features for managing applications such as approving or rejecting them, updating their statuses, and sending notifications to applicants. This software is primarily aimed at individuals who are interested in obtaining a home loan from a bank. Its purpose is to simplify the loan application process and make it easier for banks to manage and process applications.

1. PROJECT REQUIREMENTS

1.1 Problem Statement:

- With the growing economy, population and needs of people the demand of houses has also increased.
- The old system is not much user friendly to get access to the all required data.
- The bank is not having robust and fast system and mainly to easy access of customer enquiry or loan application data to fast-track loan processing.

1.2 Software & hardware Requirements:

Hardware Specification:

1. Hard Disk - 250 GB
2. Min Memory - 4GB RAM
3. Processor - Dual Core

Software Specification:

1. Operating System - Windows 8
2. Database – MySQL

1.3 Languages:

1. Java – jdk11
2. React JS – “^18.2.0”
3. JavaScript – “^5.0.1”
4. HTML – “HTML5”
5. SQL - “8.0.31”
6. CSS – “CSS3”
7. Bootstrap – “^5.2.3”

2. Implementation

We are going to describe actual implementation of Home Loan Service. We implement that system by implementing a website. Hence, we need to create Web Pages for their separate application. Basically, to install System we need dual core processor as base platform. To store programs and images we also required a secondary memory supposed to be max up to 250GB. To process current action, we required main memory of 4 GB enough.

Now after that we should have some software requirements and that to be Operating System e.g., Windows 8 to control process carried out by our system. Next is Database i.e., MySQL for Database storage and data handling. After that we need editor Visual Studio Code and Spring Tool Suite for actual implementation of code, and postman to test our code.

This project purely follows the view of distributed architecture having centralized storage of the database part. Let we divide our project in three part and that are frontend, backend and database respectively. Let we overlook each one after one. Since we divide project onto some separate part and developed it with individual assumptions. Analyses each part with try and error method. After perfect testing we deploy the test code. Integrate all that parts and again testing the implementation. In this way we successfully develop the project i.e., Home Loan Service.

2.1. Frontend:

The front end of a website is the part that users interact with. Everything that you see when you're navigating around the Internet, from fonts and colors to dropdown menus and sliders, is a combo of HTML, CSS, JavaScript and ReactJS being controlled by your computer's browser. It implements the structure, design, behavior, and animation of everything you see on the screen when you open up websites, web applications, or mobile apps.

The core 3 **technologies** that all modern **front-end** web developers work to master are HTML5, CSS, JavaScript and React JS. It simplifies web development by offering automatic view/model synchronization.

2.2. Backend:

A back-end web developer is responsible for server-side web application logic and integration of the work front-end developers do.

2.3. Database:

A database is a collection of information that is organized so that it can be easily accessed, managed and updated. Data is organized into rows, columns and tables, and it is indexed to make it easier to find relevant information.

2.3.1 Table

There are twenty-four tables created in the project which are attached below:

1) Customer

Field	Type	Null	Key	Default	Extra
customer_id	int	NO	PRI	NULL	auto_increment
customer_additional_mobile_number	bigint	YES		NULL	
customer_age	int	YES		NULL	
customer_amount_paid_for_home	double	YES		NULL	
customer_date_of_birth	varchar(255)	YES		NULL	
customer_email	varchar(255)	YES		NULL	
customer_gender	varchar(255)	YES		NULL	
customer_mobile_number	bigint	YES		NULL	
customer_name	varchar(255)	YES		NULL	
customer_total_loan_required	double	YES		NULL	
accountdetails_account_id	int	YES	MUL	NULL	
allpersonal_doc_documentid	int	YES	MUL	NULL	
currentloandetails_currentloan_id	int	YES	MUL	NULL	
customer_address_customer_address_id	int	YES	MUL	NULL	
customerverification_verificationid	int	YES	MUL	NULL	
educational_info_education_id	int	YES	MUL	NULL	
enquiry_details_id	int	YES	MUL	NULL	
familydependent_info_dependent_info_id	int	YES	MUL	NULL	
gurantordetails_guarantor_id	int	YES	MUL	NULL	
ledger_ledger_id	int	YES	MUL	NULL	
loandisbursement_agreement_id	int	YES	MUL	NULL	
mortgage_details_mortgage_id	int	YES	MUL	NULL	
previousloan_previous_loan_id	int	YES	MUL	NULL	
profession_professionid	int	YES	MUL	NULL	
propertyinfo_property_id	int	YES	MUL	NULL	
sanctionletter_sanction_id	int	YES	MUL	NULL	

2) Enquiry Details

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
age	int	NO		NULL	
email	varchar(255)	YES		NULL	
first_name	varchar(255)	YES		NULL	
last_name	varchar(255)	YES		NULL	
mail_sent	varchar(255)	YES		NULL	
mobile_no	bigint	NO		NULL	
pancard_no	varchar(255)	YES		NULL	
cibil_cibil_id	int	YES	MUL	NULL	

3) Cibil

Field	Type	Null	Key	Default	Extra
cibil_id	int	NO	PRI	NULL	
cibil_score	int	YES		NULL	
cibil_score_date_time	varchar(255)	YES		NULL	
remark	varchar(255)	YES		NULL	
status	varchar(255)	YES		NULL	

4) Educational Information

Field	Type	Null	Key	Default	Extra
education_id	int	NO	PRI	NULL	auto_increment
education_type	varchar(255)	YES		NULL	

5) All Personal Documents

Field	Type	Null	Key	Default	Extra
documentid	int	NO	PRI	NULL	auto_increment
addhar_card	longblob	YES		NULL	
address_proof	longblob	YES		NULL	
bank_cheque	longblob	YES		NULL	
income_tax	longblob	YES		NULL	
pan_card	longblob	YES		NULL	
photo	longblob	YES		NULL	
salary_slips	longblob	YES		NULL	
signature	longblob	YES		NULL	
thumb	longblob	YES		NULL	

6) Customer Address

Field	Type	Null	Key	Default	Extra
customer_address_id	int	NO	PRI	NULL	auto_increment
local_address_local_address_id	int	YES	MUL	NULL	
permanent_address_permanent_address_id	int	YES	MUL	NULL	

7) Permanent Address

Field	Type	Null	Key	Default	Extra
permanent_address_id	int	NO	PRI	NULL	auto_increment
areaname	varchar(255)	YES		NULL	
cityname	varchar(255)	YES		NULL	
district	varchar(255)	YES		NULL	
house_number	int	YES		NULL	
pincode	bigint	YES		NULL	
state	varchar(255)	YES		NULL	
street_name	varchar(255)	YES		NULL	

8) Local Address

Field	Type	Null	Key	Default	Extra
local_address_id	int	NO	PRI	NULL	auto_increment
areaname	varchar(255)	YES		NULL	
cityname	varchar(255)	YES		NULL	
district	varchar(255)	YES		NULL	
house_number	int	YES		NULL	
pincode	bigint	YES		NULL	
state	varchar(255)	YES		NULL	
street_name	varchar(255)	YES		NULL	

9) Mortgage Details

Field	Type	Null	Key	Default	Extra
mortgage_id	int	NO	PRI	NULL	auto_increment
mortgage_loan_on_property	double	YES		NULL	
mortgage_property_insurance	longblob	YES		NULL	
mortgage_property_proof	longblob	YES		NULL	
mortgage_property_type	varchar(255)	YES		NULL	
mortgage_property_value	double	YES		NULL	

10) Profession

Field	Type	Null	Key	Default	Extra
professionid	int	NO	PRI	NULL	auto_increment
profession_designation	varchar(255)	YES		NULL	
professionsalary	double	YES		NULL	
professionsalary_type	varchar(255)	YES		NULL	
professionsalaryslips	longblob	YES		NULL	
professiontype	varchar(255)	YES		NULL	
professionworkingperiod	varchar(255)	YES		NULL	

11) Current Loan Details

Field	Type	Null	Key	Default	Extra
currentloan_id	int	NO	PRI	NULL	auto_increment
currentloan_no	int	YES		NULL	
loan_amount	double	YES		NULL	
processing_fees	double	YES		NULL	
rate_of_interest	double	YES		NULL	
remark	varchar(255)	YES		NULL	
sanction_date	varchar(255)	YES		NULL	
status	varchar(255)	YES		NULL	
tenure	int	YES		NULL	
total_amounttobepaid_double	double	YES		NULL	
total_interest	double	YES		NULL	
emidetails_emiid	int	YES	MUL	NULL	

12) EMI Details

Field	Type	Null	Key	Default	Extra
emiid	int	NO	PRI	NULL	auto_increment
emi_amount_monthly	double	YES		NULL	
next_emi_due_date	varchar(255)	YES		NULL	
previous_emi_status	varchar(255)	YES		NULL	

13) Previous Loan

Field	Type	Null	Key	Default	Extra
previous_loan_id	int	NO	PRI	NULL	auto_increment
previous_loan_amount	double	YES		NULL	
previous_loan_remark	varchar(255)	YES		NULL	
previous_loan_status	varchar(255)	YES		NULL	
previous_loan_tenure	int	YES		NULL	
previous_loandeadfuller_count	int	YES		NULL	
previous_loanpaid_amount	double	YES		NULL	
previous_loanremaining_amount	double	YES		NULL	
previous_loanbank_details_branch_id	int	YES	MUL	NULL	

14) Previous Loan Bank

Field	Type	Null	Key	Default	Extra
branch_id	int	NO	PRI	NULL	auto_increment
branch_code	double	YES		NULL	
branch_name	varchar(255)	YES		NULL	
branch_type	varchar(255)	YES		NULL	
conatct_number	double	YES		NULL	
email	varchar(255)	YES		NULL	
ifsccode	varchar(255)	YES		NULL	
micrcode	varchar(255)	YES		NULL	
status	varchar(255)	YES		NULL	
bank_address_branch_address_id	int	YES	MUL	NULL	

15) Account Details

Field	Type	Null	Key	Default	Extra
account_id	int	NO	PRI	NULL	auto_increment
accoun_type	varchar(255)	YES		NULL	
account_balance	double	YES		NULL	
account_holder_name	varchar(255)	YES		NULL	
account_number	bigint	YES		NULL	
account_status	varchar(255)	YES		NULL	

16) Property Information

Field	Type	Null	Key	Default	Extra
property_id	int	NO	PRI	NULL	auto_increment
construction_area	double	YES		NULL	
construction_price	double	YES		NULL	
price_proofs	longblob	YES		NULL	
property_area	double	YES		NULL	
property_documents	longblob	YES		NULL	
property_price	double	YES		NULL	
property_type	varchar(255)	YES		NULL	
property_address_property_address_id	int	YES	MUL	NULL	

17) Property Address

Field	Type	Null	Key	Default	Extra
property_address_id	int	NO	PRI	NULL	auto_increment
areaname	varchar(255)	YES		NULL	
cityname	varchar(255)	YES		NULL	
district	varchar(255)	YES		NULL	
pincode	bigint	YES		NULL	
state	varchar(255)	YES		NULL	
street_name	varchar(255)	YES		NULL	

18) Guarantor Details

Field	Type	Null	Key	Default	Extra
guarantor_id	int	NO	PRI	NULL	auto_increment
guarantor_adhar_card_no	bigint	YES		NULL	
guarantor_date_of_birth	varchar(255)	YES		NULL	
guarantor_job_details	varchar(255)	YES		NULL	
guarantor_loacl_address	varchar(255)	YES		NULL	
guarantor_mobile_number	bigint	YES		NULL	
guarantor_mortgage_details	varchar(255)	YES		NULL	
guarantor_name	varchar(255)	YES		NULL	
guarantor_permanent_address	varchar(255)	YES		NULL	
guarantor_relationshipwith_customer	varchar(255)	YES		NULL	

19) Loan Disbursement

Field	Type	Null	Key	Default	Extra
agreement_id	int	NO	PRI	NULL	auto_increment
account_number	bigint	YES		NULL	
account_type	varchar(255)	YES		NULL	
agreement_date	varchar(255)	YES		NULL	
amount_paid_date	varchar(255)	YES		NULL	
amount_pay_type	varchar(255)	YES		NULL	
bank_name	varchar(255)	YES		NULL	
ifsccode	varchar(255)	YES		NULL	
loan_no	int	YES		NULL	
payment_status	varchar(255)	YES		NULL	
total_amount	double	YES		NULL	
transfer_amount	double	YES		NULL	

20) Ledger

Field	Type	Null	Key	Default	Extra
ledger_id	int	NO	PRI	NULL	auto_increment
amount_paidtill_date	double	YES		NULL	
current_month_emi_status	varchar(255)	YES		NULL	
defaulter_count	int	YES		NULL	
ledger_created_date	varchar(255)	YES		NULL	
loan_end_date	varchar(255)	YES		NULL	
loan_status	varchar(255)	YES		NULL	
monthlyemi	double	YES		NULL	
next_emi_date_end	varchar(255)	YES		NULL	
next_emi_datestart	varchar(255)	YES		NULL	
payable_amountwith_interest	double	YES		NULL	
previous_emit_status	varchar(255)	YES		NULL	
remaining_amount	double	YES		NULL	
tenure	int	YES		NULL	
total_loan_amount	double	YES		NULL	

21) Sanction Letter

Field	Type	Null	Key	Default	Extra
sanction_id	int	NO	PRI	NULL	auto_increment
applicant_name	varchar(255)	YES		NULL	
contact_details	bigint	YES		NULL	
interest_type	varchar(255)	YES		NULL	
loan_amt_sanctioned	double	YES		NULL	
loan_tenure	int	YES		NULL	
mode_of_payment	varchar(255)	YES		NULL	
monthly_emi_amount	double	YES		NULL	
producthome_equity	varchar(255)	YES		NULL	
rate_of_interest	double	YES		NULL	
remarks	varchar(255)	YES		NULL	
sanction_date	varchar(255)	YES		NULL	
status	varchar(255)	YES		NULL	
terms_condition	varchar(255)	YES		NULL	

22) Customer Verification

Field	Type	Null	Key	Default	Extra
verificationid	int	NO	PRI	NULL	auto_increment
remarks	varchar(255)	YES		NULL	
status	varchar(255)	YES		NULL	
verification_date	varchar(255)	YES		NULL	

3. Objectives

- The main objective of this project is to buy a Home through finance Loan Company and to implement all the loan process by developing a code.
- First here, if we want to buy a Home then we will go to Builder, and he will explain the whole process to us and gives a quotation.
- If we do not have that much money in current situation, then he will suggest us to take a loan.
- As already some banks have tied up with them e.g., ICICI, HDFC, SBI, and some other finance companies.
- Then they will suggest us those providers and there is one relation executive person will contact you and explain all the process of Loan.
- Every bank has different process.

4. Functional Specification

Admin

- Admin can login and manage loan enquiry and application status.

Bank

- Register and Login
- Manage home loan enquiry.
- Update application status.

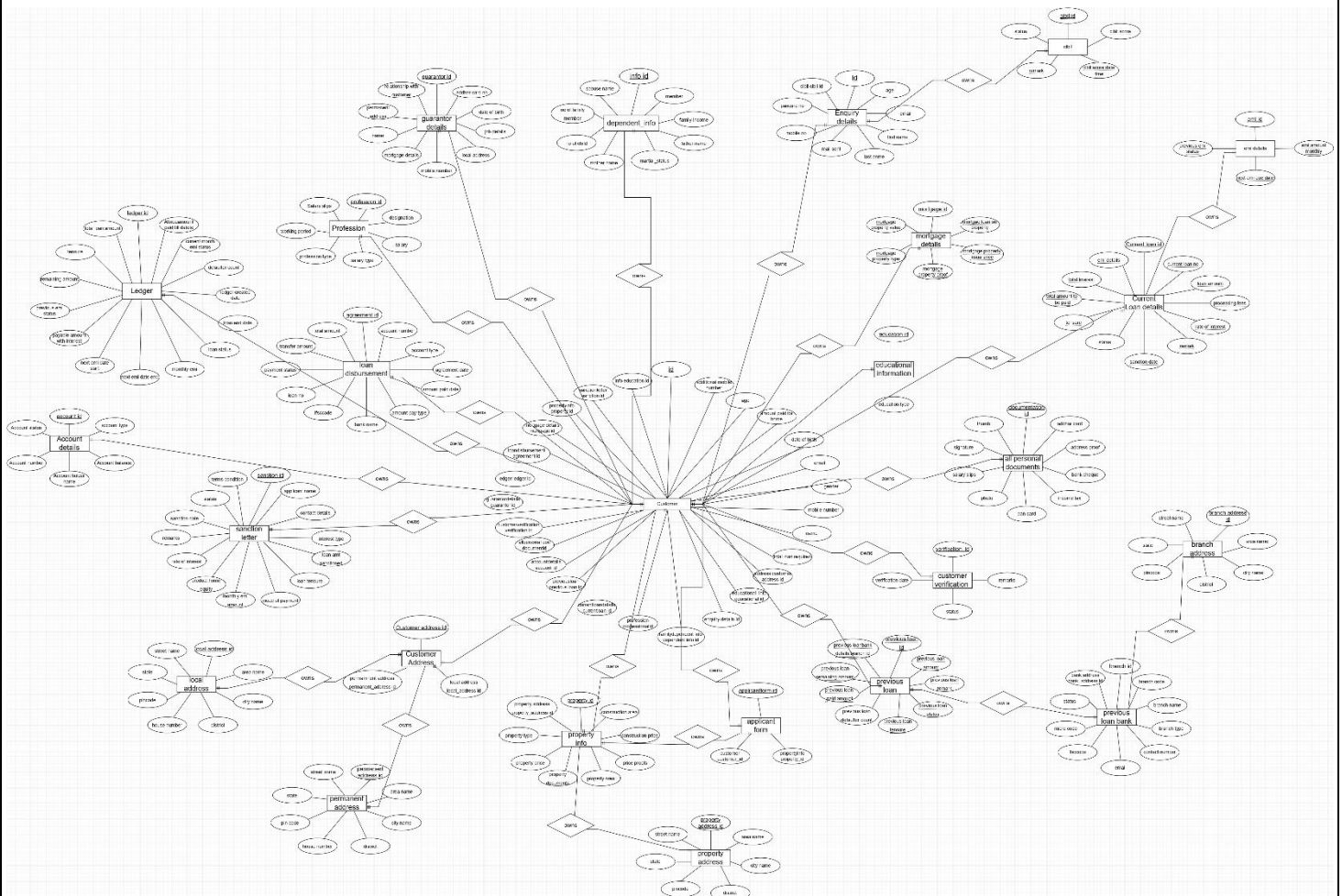
User

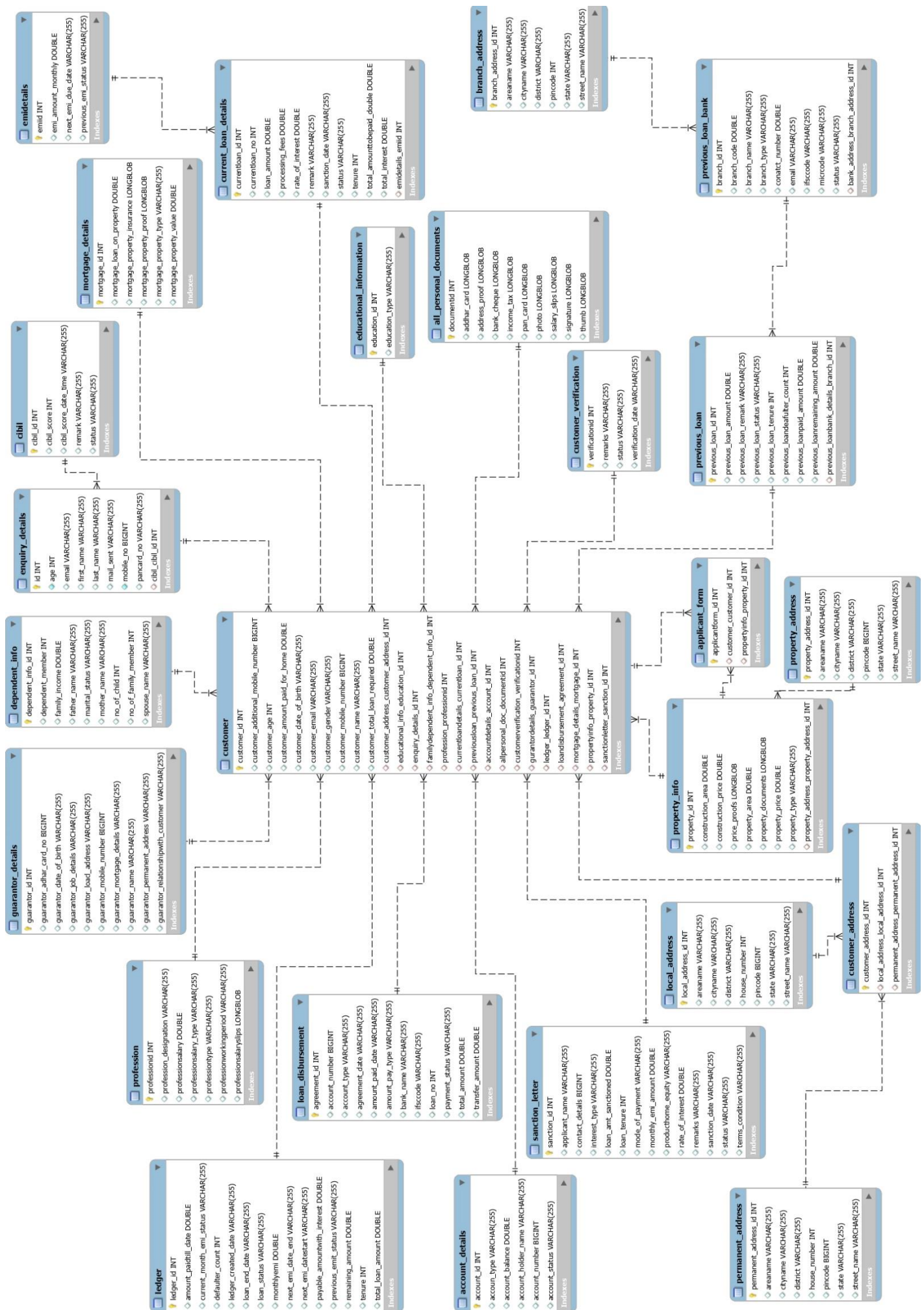
- Admin can search for enquiry of home loan.
- Admin can search for application status of customer state, district and city wise.

5. System Diagrams:

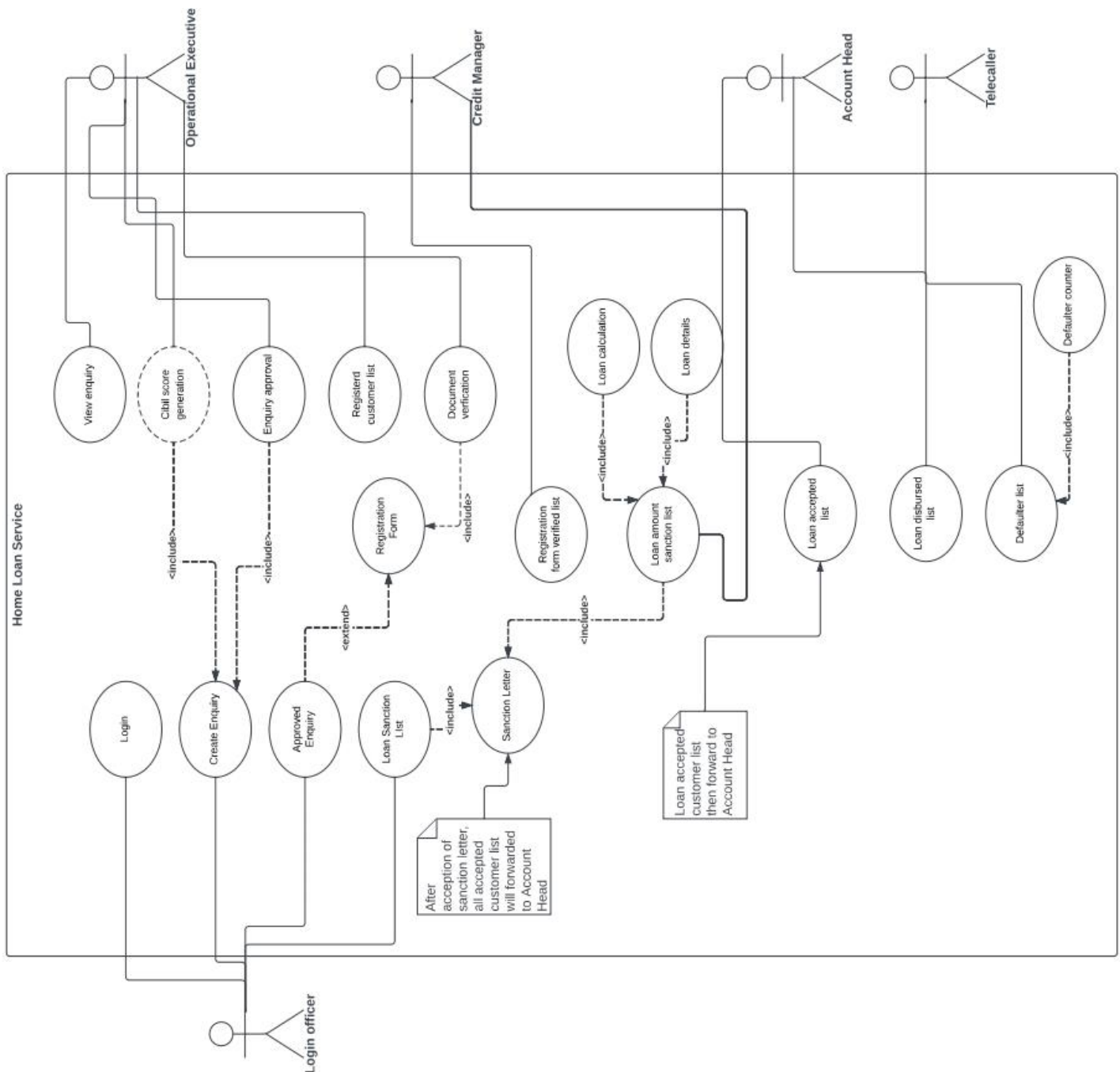
1.1. Manual and System E-R Diagram:

Database is absolutely an integral part of software system. To fully utilize ER Diagram in database engineering guarantee you to produce high quality database design to use in database creation, management and maintenance. An ER model also provides a means for communication.

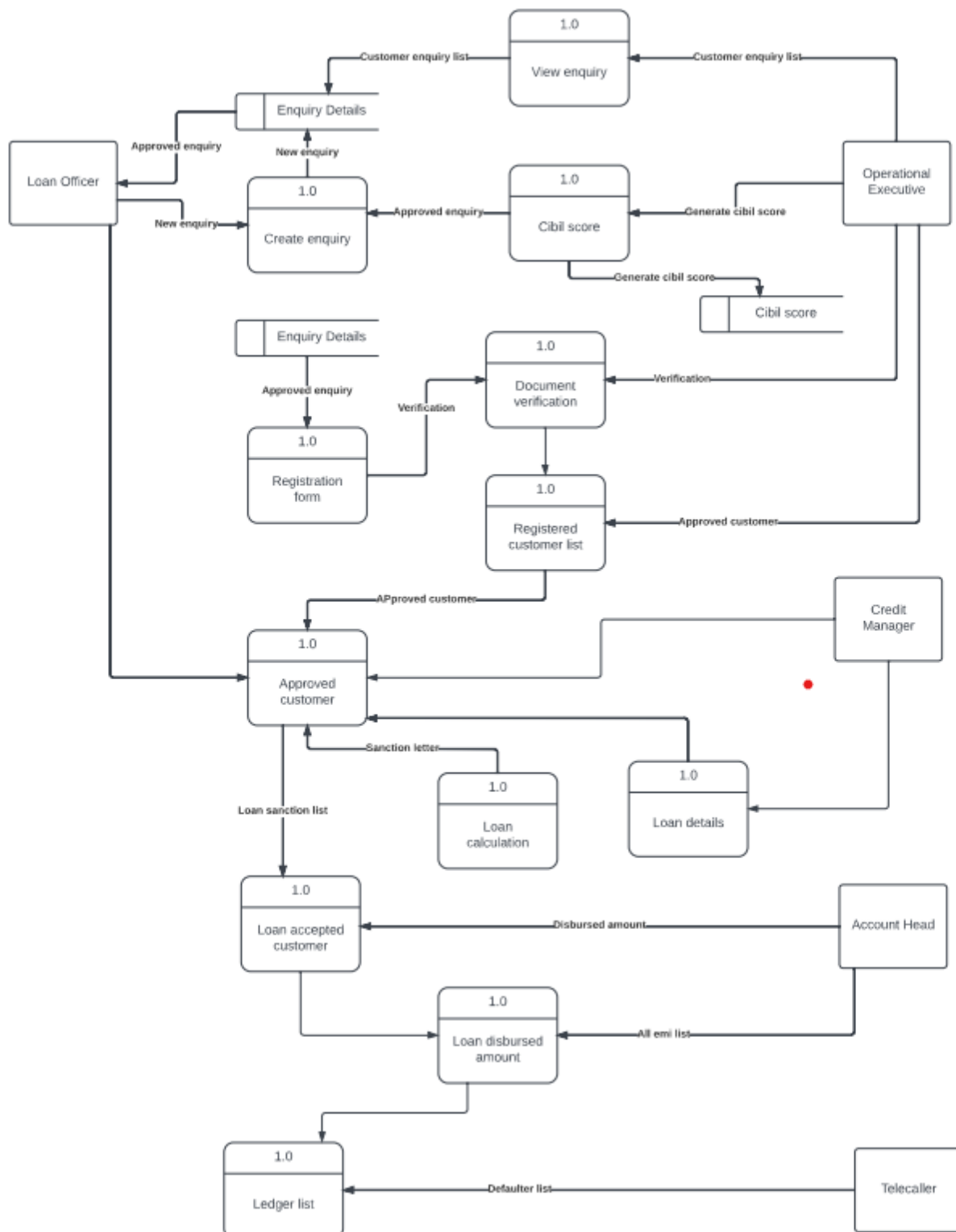




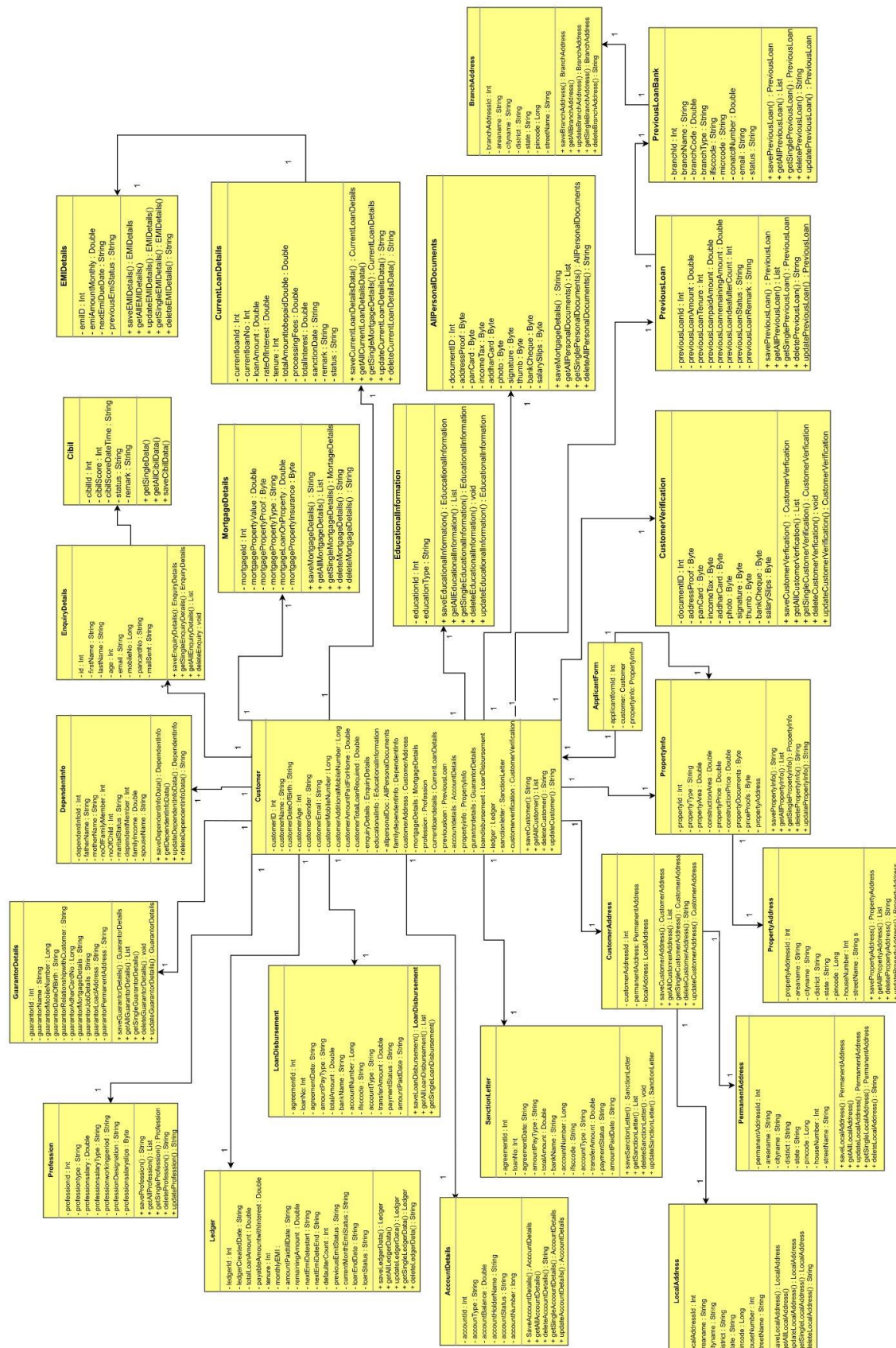
5.2 Use Case Diagram :



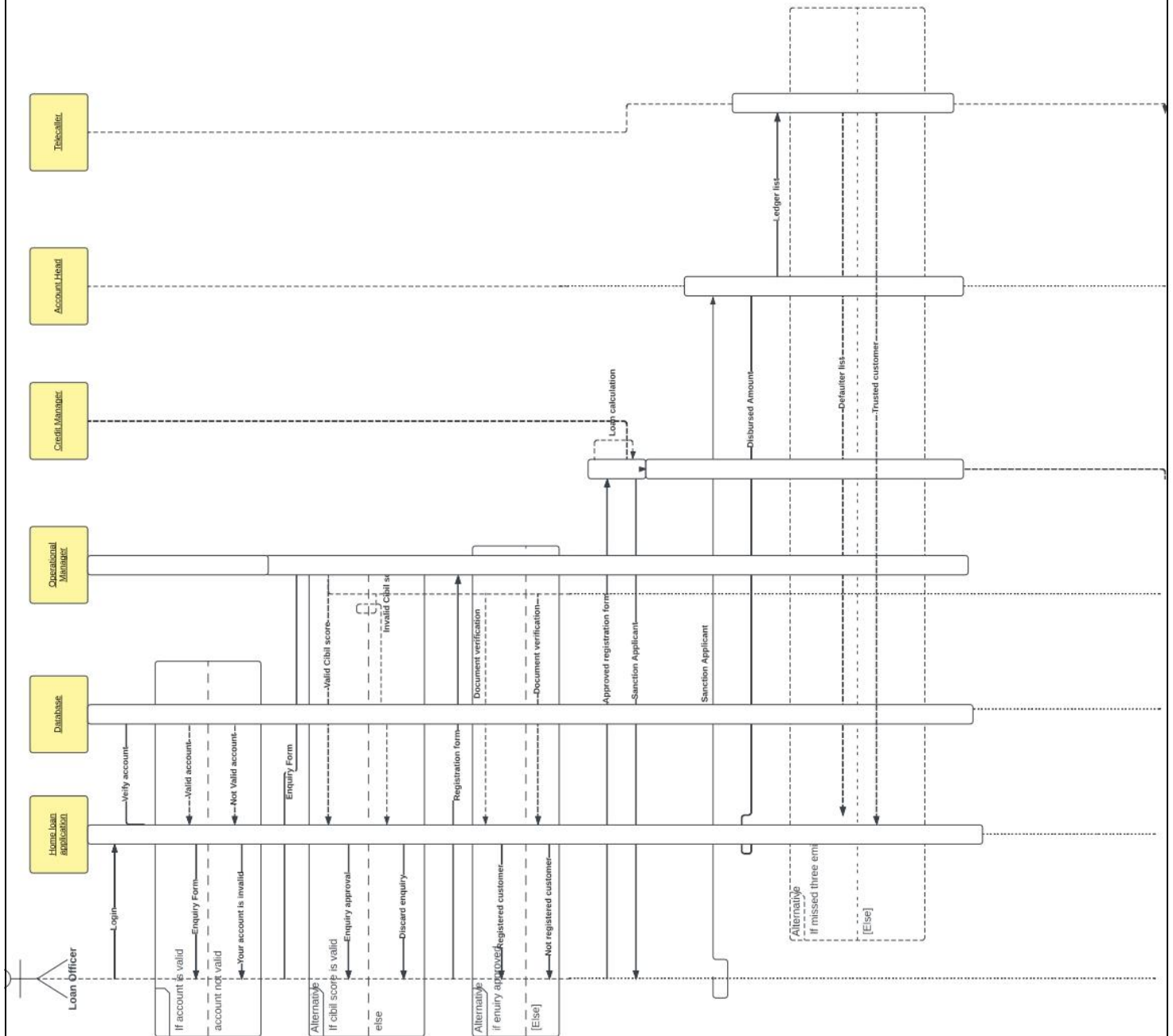
5.3 Data Flow Diagram(DFD)



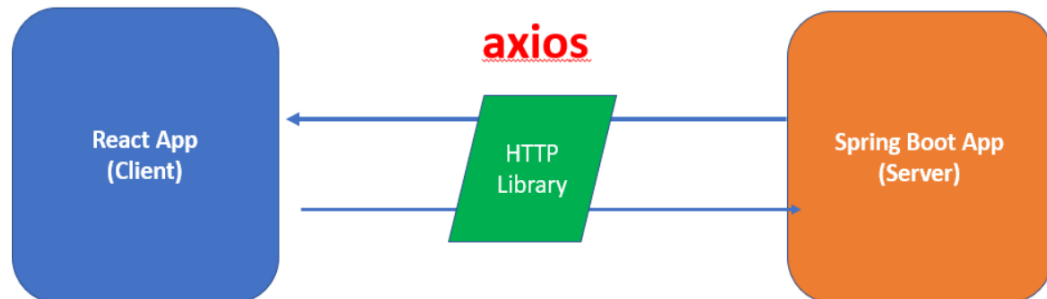
5.4 Class Diagram



5.5 Sequence Diagram



6. Frontend and Backend Connection



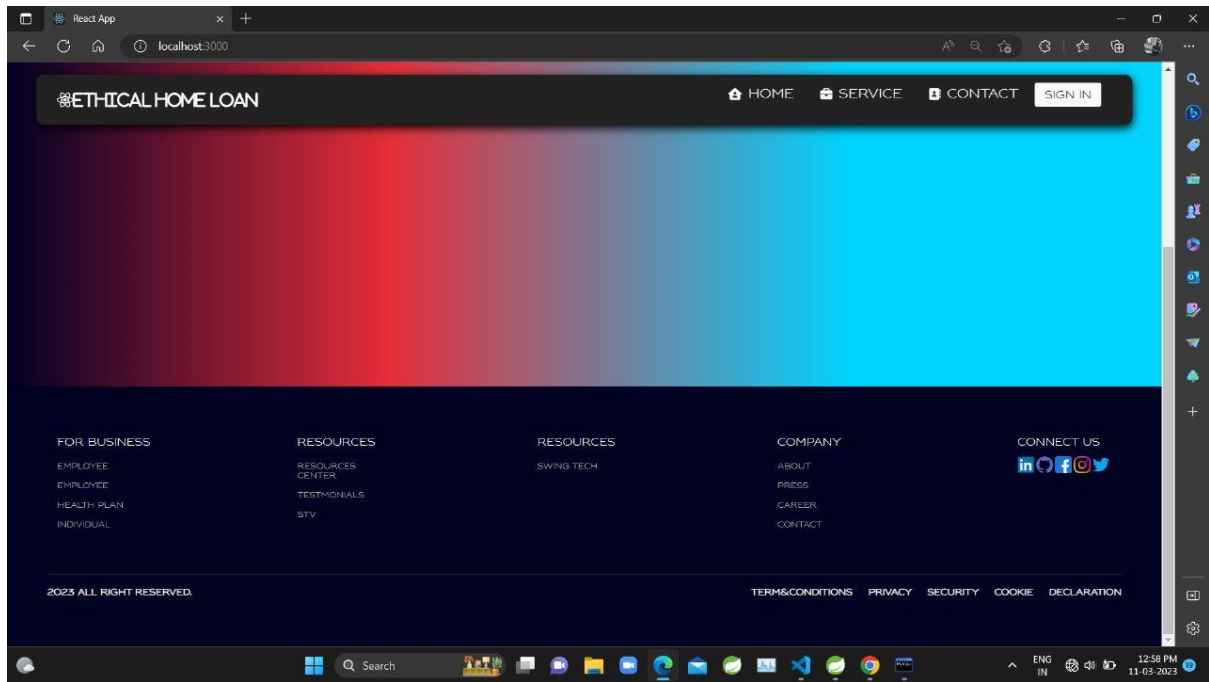
Axios:

Axios, which is a popular library is mainly used to send asynchronous HTTP requests to REST endpoints. This library is very useful to perform CRUD operations.

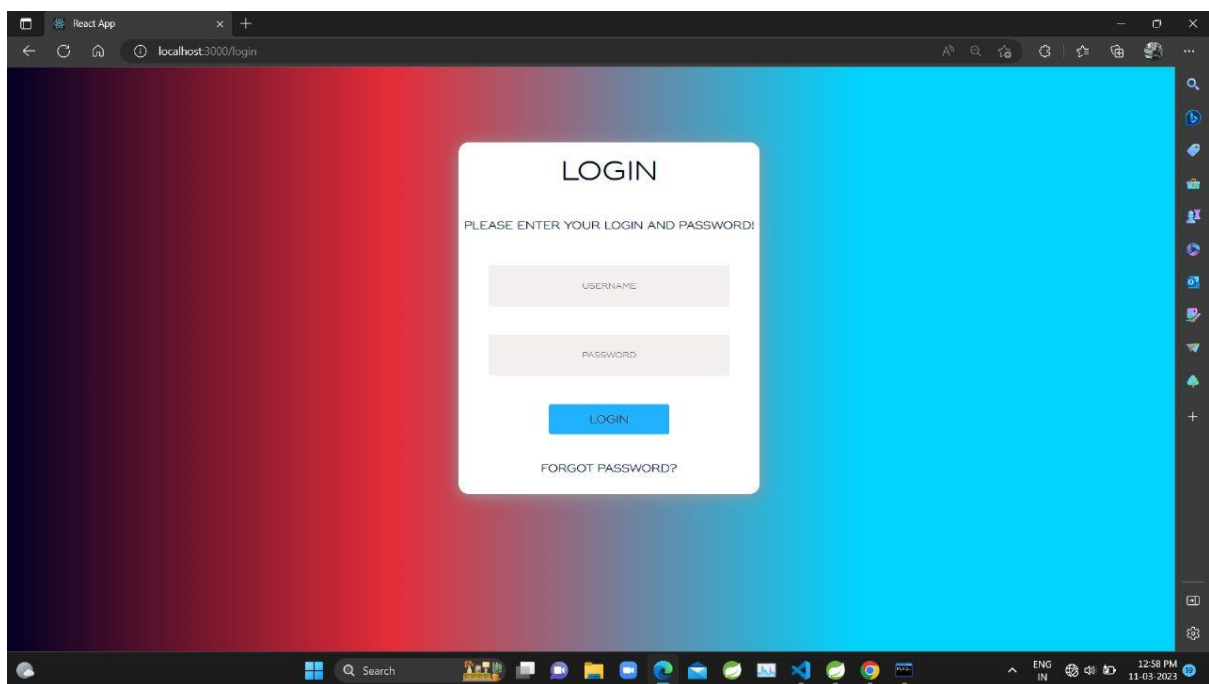
- This popular library is used to communicate with the backend. Axios supports the Promise API, native to JS ES6.
- Using Axios we make API requests in our application. Once the request is made we get the data in Return, and then we use this data in our project.

7. PROJECT SCREENSHOTS

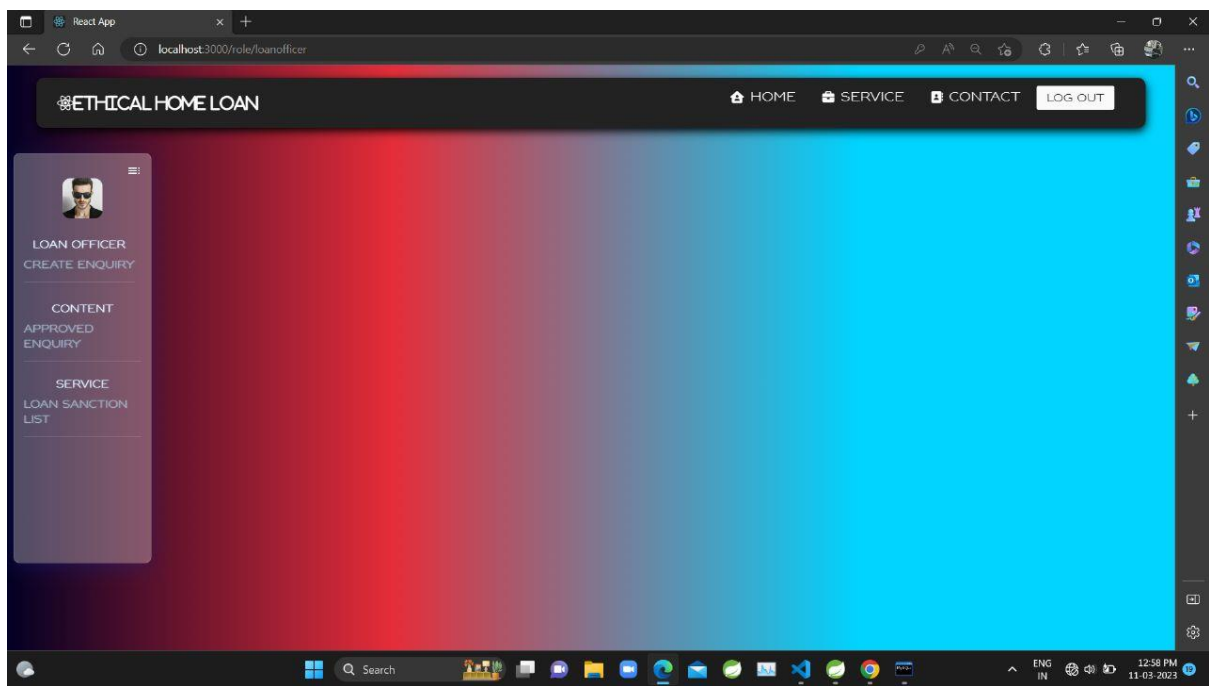
Home Page



Login Page



Loan Officer Page:



Enquiry Page

The screenshot shows a web browser window displaying the 'ENQUIRY FORM' page. The URL bar shows 'localhost:3000/role/loanofficer/enquiry-form'. The form is centered on a dark background with a red-to-blue gradient. The form fields are as follows:

ENQUIRY FORM	
<input type="text"/>	<input type="text"/>
FIRST NAME	LAST NAME
<input type="text"/>	<input type="text"/>
AGE	MOBILE NO
<input type="text"/>	
PANCARD NO	
<input type="text"/>	
EMAIL ID	
<input type="button" value="SUBMIT"/>	<input type="button" value="RESET"/>

The Windows taskbar at the bottom shows the time as 12:39 PM on 11-03-2023.

Operational Executive CIBIL generation page

The screenshot shows a web application interface for 'ETHICAL HOME LOAN'. The page title is 'Operational Executive CIBIL generation page'. The table displays the following data:

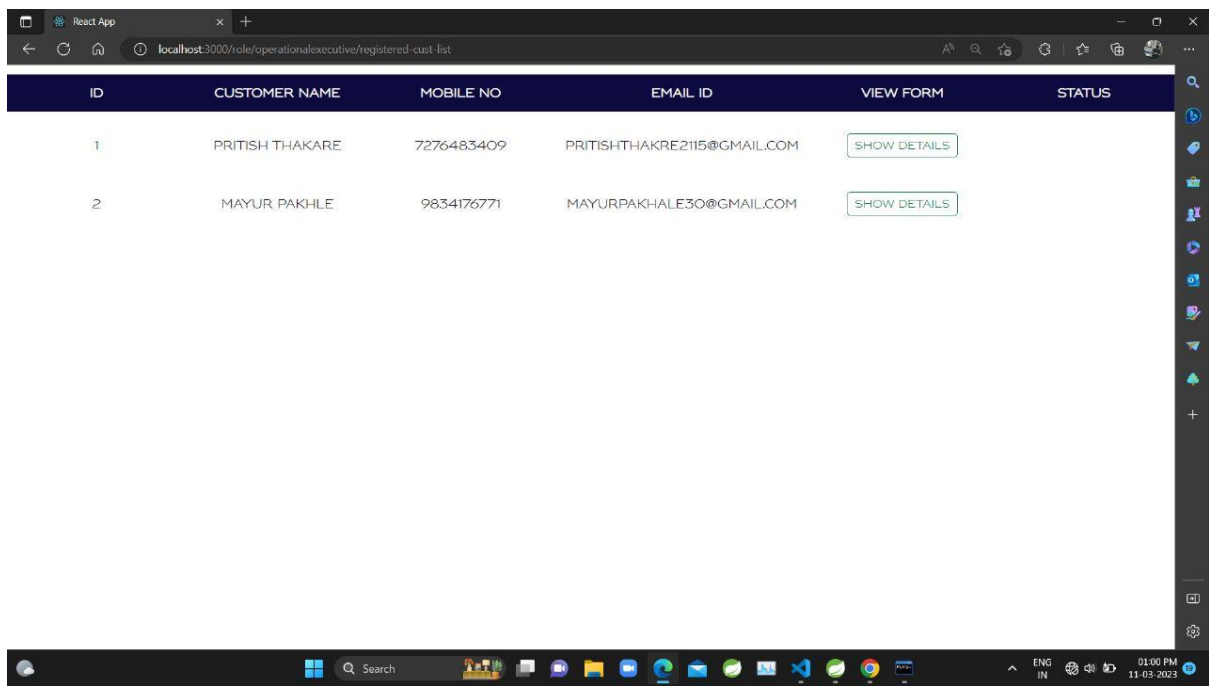
ID	FIRST NAME	LAST NAME	AGE	MOBILE NO	PAN CARD NO	CIBIL GENERATOR	CIBIL SCORE	STATUS
1	PRITISH	THAKARE	25	7276483409	IPM145	GENERATE CIBIL	-	-
2	MAYUR	PAKHLE	25	9834176771	ZXCVB	GENERATE CIBIL	-	-

Operational Executive CIBIL generated page

The screenshot shows the same web application interface, but the CIBIL scores have been generated. The table displays the following data:

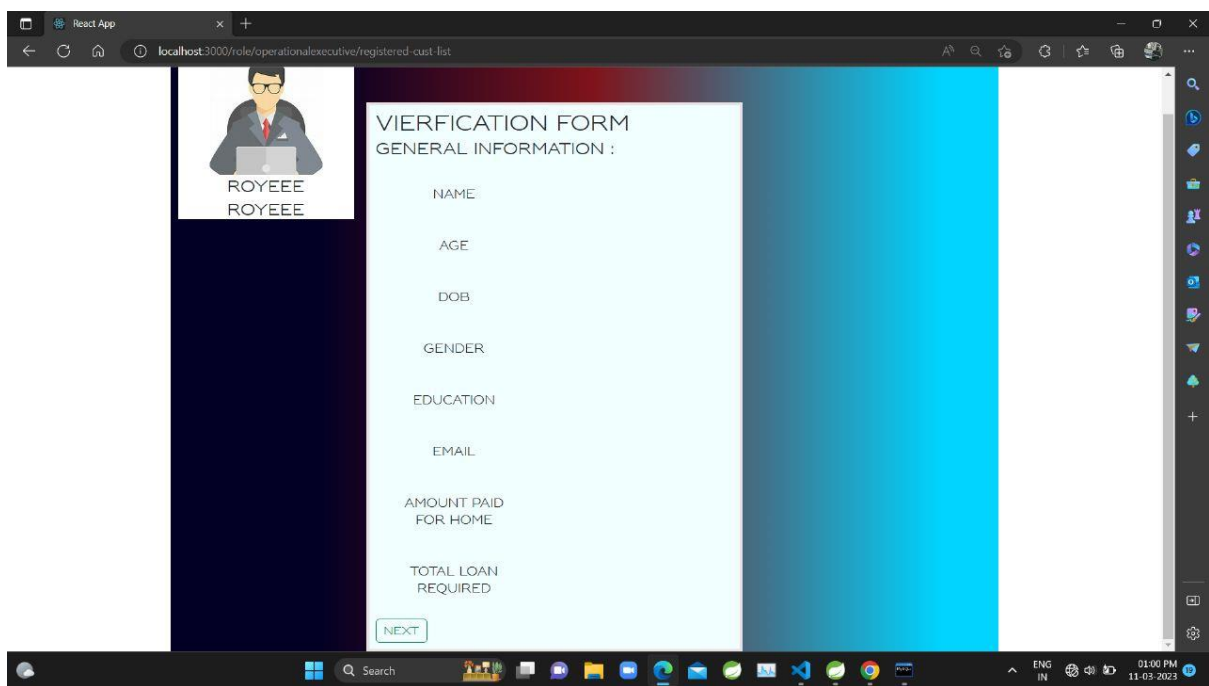
ID	FIRST NAME	LAST NAME	AGE	MOBILE NO	PAN CARD NO	CIBIL GENERATOR	CIBIL SCORE	STATUS
1	PRITISH	THAKARE	25	7276483409	IPM145	GENERATE CIBIL	663 REJECT	INVALID
2	MAYUR	PAKHLE	25	9834176771	ZXCVB	GENERATE CIBIL	820 APPROVE	VALID

Registration List Page



ID	CUSTOMER NAME	MOBILE NO	EMAIL ID	VIEW FORM	STATUS
1	PRITISH THAKARE	7276483409	PRITISHTHAKARE2115@GMAIL.COM	SHOW DETAILS	
2	MAYUR PAKHILE	9834176771	MAYURPAKHALE30@GMAIL.COM	SHOW DETAILS	

Verification page



ROYEEE
ROYEEE

VIERIFICATION FORM

GENERAL INFORMATION :

NAME

AGE

DOB

GENDER

EDUCATION

EMAIL

AMOUNT PAID
FOR HOME

TOTAL LOAN
REQUIRED

NEXT

Approved Enquiry

ETHICAL HOME LOAN

HOME SERVICE CONTACT LOG OUT

LOAN OFFICER
CREATE ENQUIRY

CONTENT
APPROVED ENQUIRY

SERVICE
LOAN SANCTION LIST

ID	FIRST NAME	LAST NAME	PANCARD NO	EMAIL ID	CIBIL SCORE	STATUS	SEND EMAIL	REGISTER
1	PRITISH	THAKARE	IPM145	PRITISHTHAKRE2115@GMAIL.COM	663	PENDING		
2	MAYUR	PAKHLE	ZXCVB	MAYURPAKHLE30@GMAIL.COM	820	APPROVED	SEND EMAIL	REGISTER HERE

12:59 PM 11-03-2023

8. Advantages

- Easy to access the customer data.
- Easy CIBIL score generation.
- Email sending for required documentation.
- Can review customer applications.
- Customer enquiry approval.
- Can know about which type of people are applying for home loan, which will become easy for marketing team to target the customers.

9. Disadvantages

- It requires active internet connection.

10. Application

- Bank can have details of each client who came for the enquiry for home loan.
- Easy to check CIBIL score.
- Can check application details and status.
- Can keep track of EMI.

11. Future Scope: -

- The main purpose to build this application program is to reduce the human efforts by using software.
- The project is totally built at administrative end and thus only the administrators guaranteed will access this system. This software is a mainly related to customer individuals who are interested in taking Home Loan from bank to fulfil their dreams.
- The process is filter by position to Official position.
- Main logo of the company can be added to the login web page.
- The sanction letter for the customer is signed manually, which can be auto-generated in future by loan officer login page, for instance generation.
- Customers can be mailed online before EMI instalment date and also if the customer misses the instalment.
- If customer misses the EMI, then can be added into defaulter list.

12. Conclusion :-

- The web site provides synchronization between the employees of the bank.
- Bank can send email to the customer to get required details to fill the enquiry form.
- Bank can easily get CIBIL score for verifying the suitability of the customer for applying loan.
- Here, the individual employee can find the data of all of all customers applying for loan, so that they can call them back for taking updates.
- It saves a lot of time for processing the request of the application.
- Loan application confirmation can be checked online.