

Project Report

ON

 **loantric**

LOANTRIC-get what you desire...

(Loan Scheme Management Software)

Software Requirement Specification

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1. Introduction

1.1 Purpose

The purpose of this document is to collect and analyze all the different ideas that have been gathered to define the system, its functional and non-functional requirements with respect to users. Also, the project team shall analyze how the product will be used in order to get a better understanding of the project and outline concepts that may be developed later and documentation ideas that are being considered.

The purpose of this SRS document is to provide a detailed overview of the software, its parameters and goals from both from user and admin ends. This document describes the project's target audience and its user interface, hardware and software requirements. It defines how the client, team and end-user see the product and its functionality. It assists any designer and developer in software delivery lifecycle processes.

1.2 Intended Audience and Reading Suggestions

This SRS report is the final product of the requirement gathering. It is a formal document that will be used by the programmer and the user to verify if all the requirements and the functionalities are present in the project. In future the developers who will update the software can also use the SRS to add any extra functional requirements.

1.3 Product Scope

The software that will be created will provide a safe and secure platform to view all government related loan schemes. The process of updating the loan schemes will be done by authorized personnel only making the software secure and reliable.

The system will allow the customer to create a profile and maintain a proper record leading to customer satisfaction. Different loan schemes and related details will be available on the click of a mouse making the system a user friendly interface.

In future forms for applying loans will also be made available making it a paperless system and will also reduce workload.

1.4 References

1. Java Reference Ninth Edition - Tata McGraw Hill Publications
2. Smart India Hackathon : <https://innovate.mygov.in/sih2018/>

2. The Overall Description

2.1 Product Perspective

The Loan Scheme Management Software provides a common digital platform to compare different government based schemes of loans available in the market on a single software. This software is user friendly for providing information about different loan schemes and allows user to check if he/she is eligible for that particular loan scheme. Till now, no such software is available, we suppose there is a great need for it, as it brings up all the government loan schemes which can help common public a lot.

2.2 Product Functions

The Loan Scheme Management Software captures the following functions:

- Browse and compare loan schemes.
- Check eligibility for the loan scheme.
- Calculate the EMI, etc.
- Answers to FAQs etc.

2.3 User Characteristics

This software asks for user details at the time of creating account. Details such as annual income should be taken, which can be used by the software to automatically suggest the user for which of the available loan scheme he/she is suitable for, at the time of browsing loan schemes. The personal details of the user will be kept secure.

2.4 Operating Environment

Windows Operating System is used for testing and deploying the software. So the software is made to work on Windows OS at present. Future prospect is to bring the software to Android OS and develop a website for the software.

So the front end is designed using Bootstrap, CSS and HTML, PHP and the back end is supported by MySQL databases and Java.

2.5 Constraints

The software doesn't have the feature to directly apply for the loan from the software itself. This feature can be added in future releases so the user can directly apply for the loan and can perform the required documentation online.

2.6 Dependencies

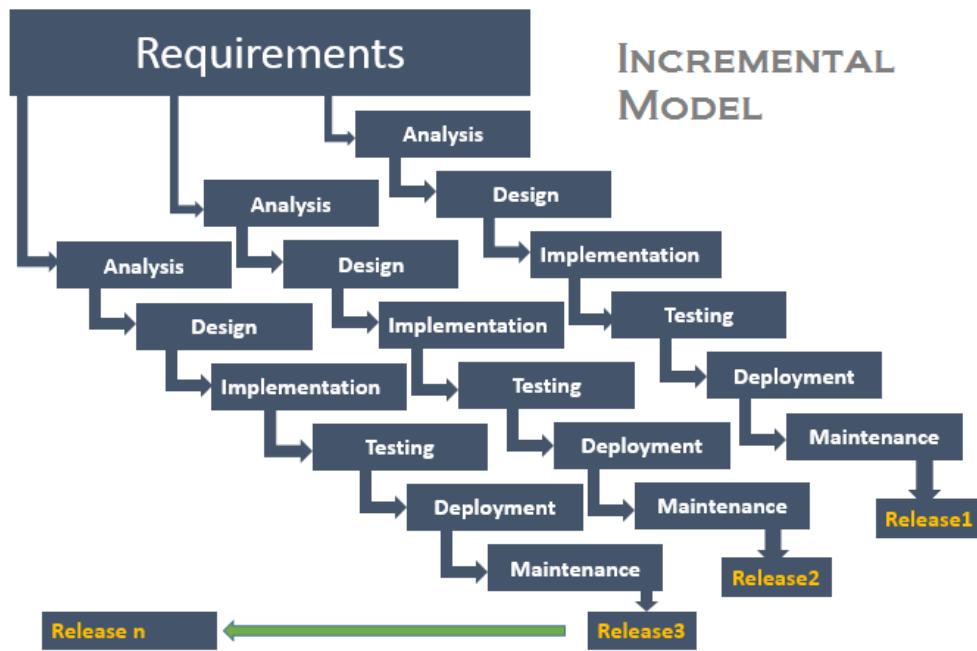
- This software requires active internet connection.
- Annual salary of 2.5 lacs and above is required for any type of loan.

2.7 Assumptions

- It is assumed that the administrator credentials are shared with authorized personnel only.
- All entries made by the user are accurate.
- The processes will be faster.

2.8 Process Model

Incremental Process Model is used to develop our mini-project. The model combines the elements of the waterfall model with the iterative philosophy of prototyping. New features and maintenance of the software will be developed timely. We are using this process model as with every linear increment addition of new features to the software will help in development of the software. Hence we are using this model as it is more flexible. Also it is easy to test and debug the software through this model.



3. Functional Requirements

This subsection presents the identified functional requirements for the LOAN SCHEME MANAGEMENT SYSTEM. Initially, general requirements that pertain to the whole system are given.

Where possible, subsequent requirements have been demarcated based on their relevance to the users of the system, that is Common public, entrepreneurs and Government Staff (Admin). Mentioned below are the functional requirements :

3.1 Common public & Entrepreneurs side Requirements :

3.1.1 Create Account :

INPUT : Enters a valid email-id and strong password.
OUTPUT : Account created successfully.

3.1.2 View Different Loan schemes :

INPUT : Login with his/her registered email-address or SIGN-UP
OUTPUT : VALID : If account exists the user can surf different loan schemes.
INVALID : Display “Create Account”.

3.1.3 Compare two different loan schemes on different parameters :

INPUT : Login with valid or registered email-id and selects ‘COMPARE’ option and the schemes.
OUTPUT : VALID : Displays the compared data on the basis of interests,loan ticket size, documentation, etc.
INVALID : Display “Create Account”.

3.1.4 View recently checked loan schemes :

INPUT : Login with registered email-id and choose ‘RECENTS’ tab.
OUTPUT : VALID : Displays the list of recently viewed schemes.
INVALID : Display “Create Account”.

3.1.5 Add different loan schemes to his/her wallet for future references :

INPUT : Login with registered email-id to view the schemes and touches the ‘DOLLAR’ mark.
OUTPUT : VALID : Displays “Item successfully to your wallet”.
INVALID : Display “Create Account”.

3.1.6 Search for different keyword :

INPUT : Take user input of keyword.
OUTPUT : Keyword related information from database.

3.2 Admin Side Requirements :

3.2.1 Registration/Login :

INPUT : Setting/verifying username and password.
OUTPUT : VALID : Create account and give rights.

INVALID : Display “Error” message.

3.2.2 Accessing and Updating Database :

INPUT : Selecting options such as loan type and loan description and updating the database.
OUTPUT : Providing loan details from the database.

3.2.3 Eligibility Verification :

INPUT : Verifying the user details and checking loan criteria for eligibility.
OUTPUT : VALID : Display “Eligible for the loan”.
INVALID : Display “Ineligible”.

3.2.4 Resolving Applicants Query :

INPUT : Input query from the user.
OUTPUT : Resolution for the query

4. Non Functional Requirements

4.1 Performance Requirements

Performance requirements means checking the fact that the system created performs as what the user accepts. Hence for every action response there are as such no immediate delays. In case of opening any forms or popping of error messages or saving any settings there is a delay of about less than 2 seconds. Also in case of connection to server the delay is based upon distance between the two systems and also the configuration.

4.2 Security Requirements

The major security concern for any user is proper login in the account. For this purpose proper login mechanism should be used to avoid any form of hacking. Therefore, security is provided from the unwanted use of the software.

4.3 Safety Requirements

The transmission of information should be done securely and transmitted to the server without any change in the entered information.

4.4 Software Quality Attributes

4.4.1 Availability

It means that the system always has something to function and in case of any type of failure an error messages should pop up. An error message appears when something goes wrong to avoid availability problems.

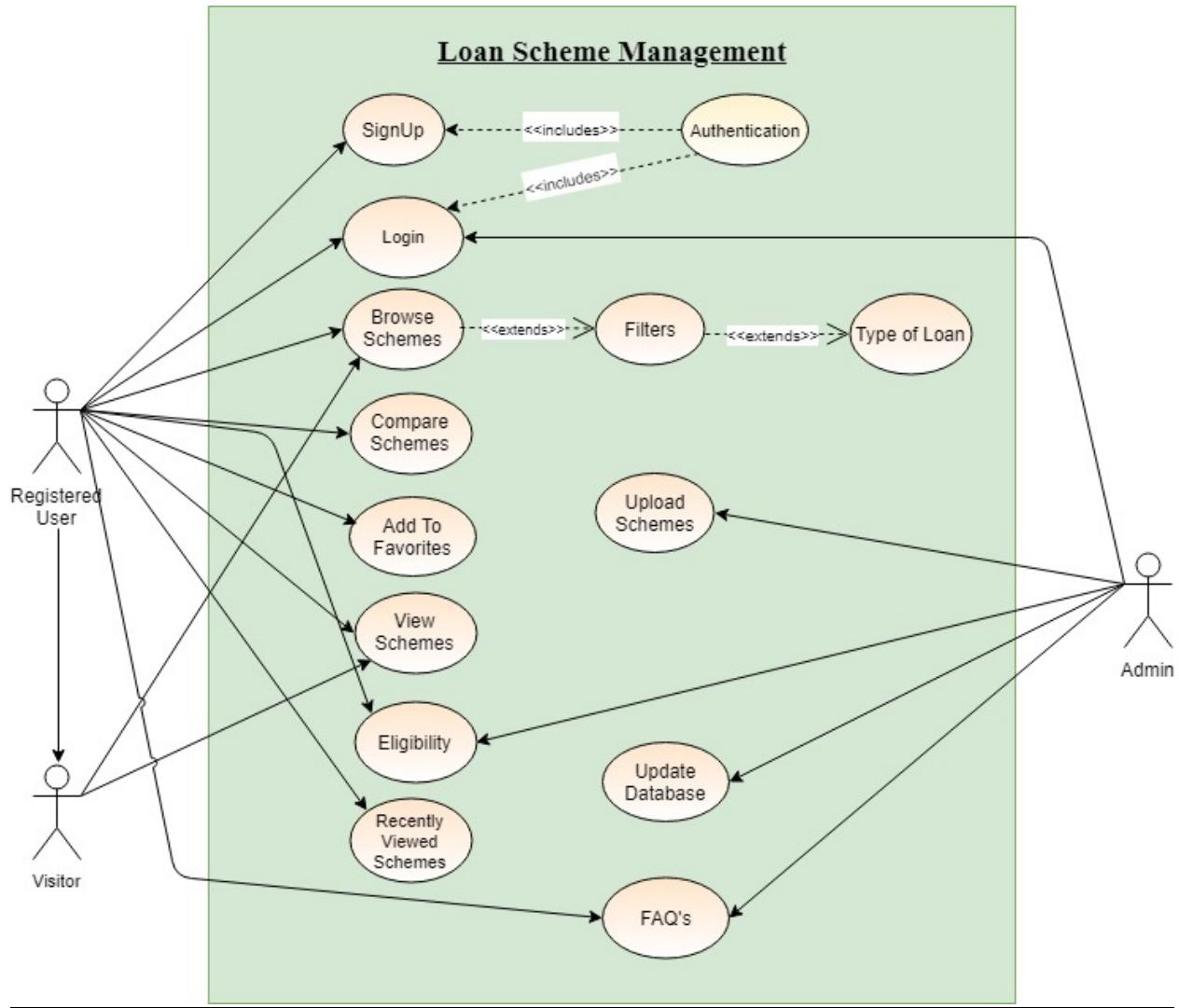
4.4.2 Usability

It means checking that the system is easy to handle and navigation through software occurs in the most expected way without any delays.

5. ANALYSIS MODELS

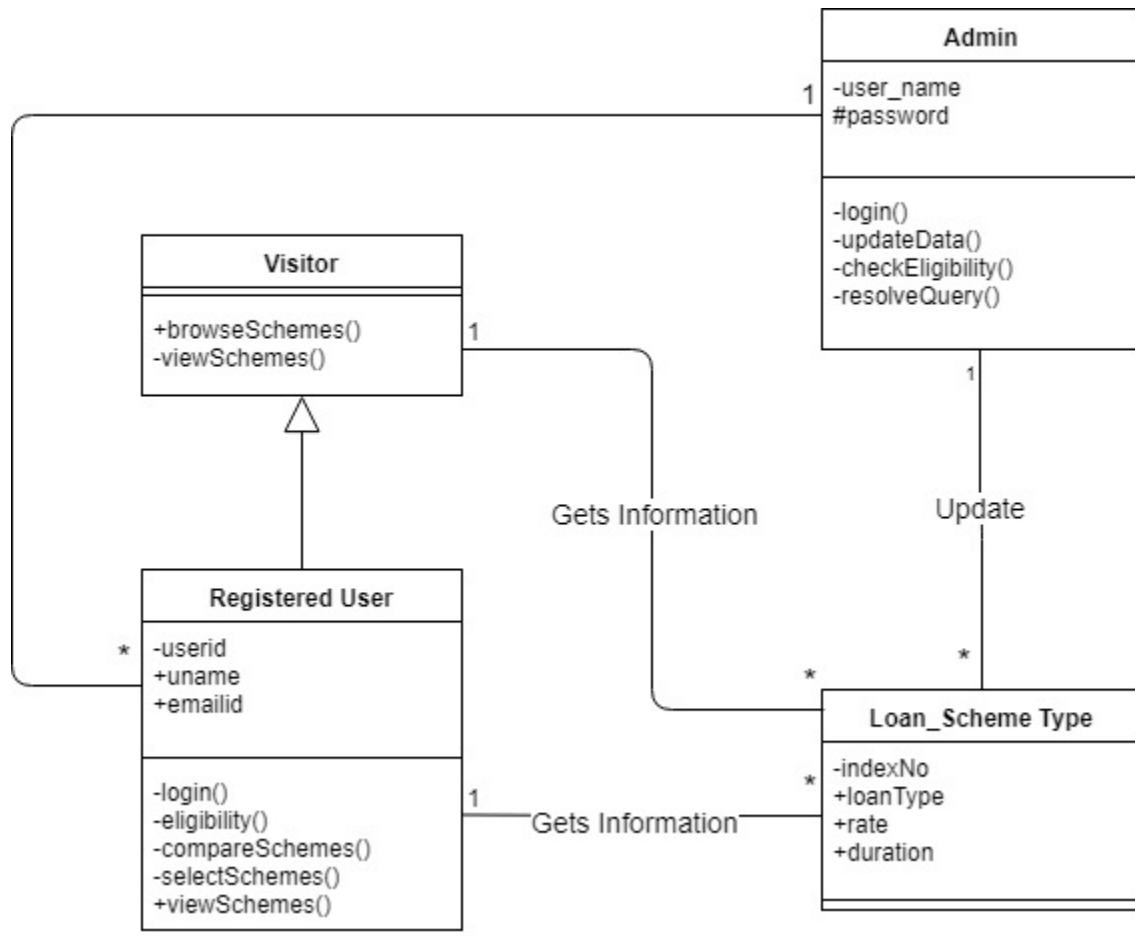
5.1 Use-Case Diagram

Use case diagrams are usually referred to as behavior diagrams used to describe a set of actions (use cases) that some system or systems (subject) should or can perform in collaboration with one or more external users of the system (actors). Each use case should provide some observable and valuable result to the actors or other stakeholders of the system.



5.2 Class Diagram

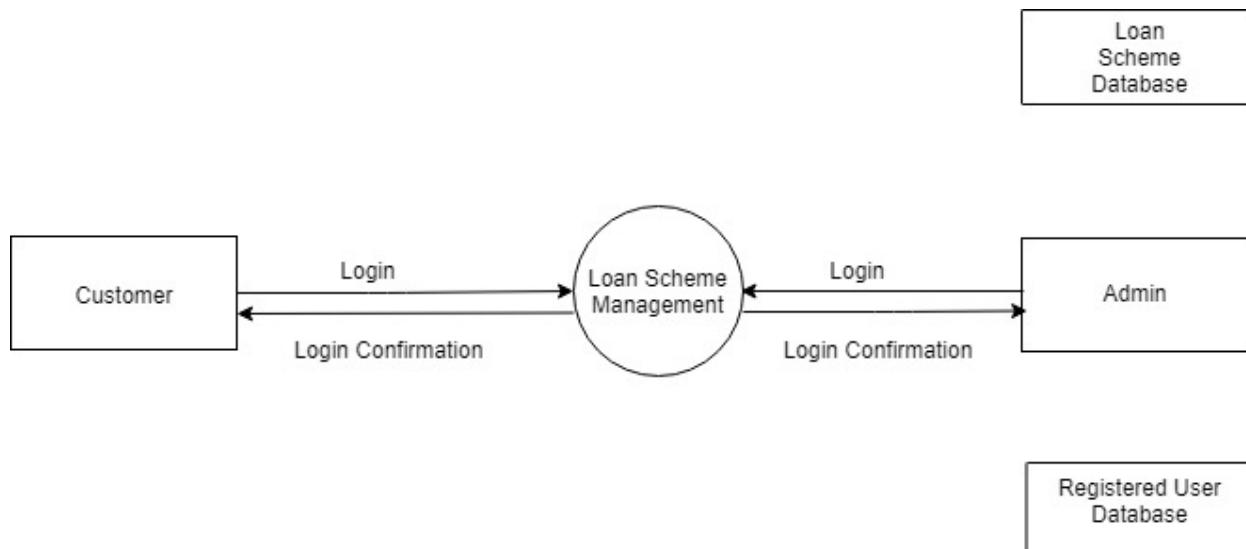
A class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's **classes**, their attributes, operations (or methods), and the relationships among objects.



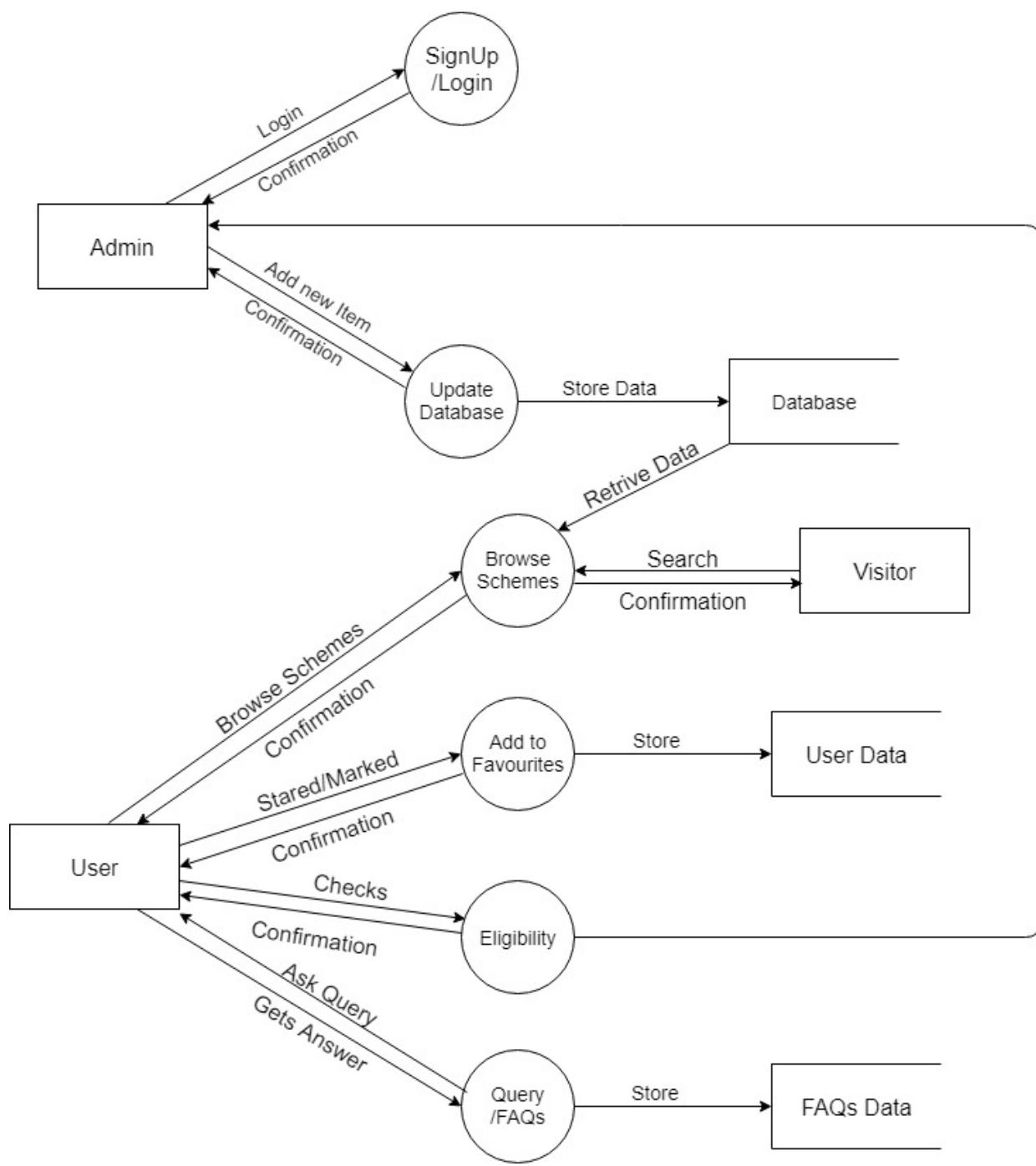
5.3 Data Flow Diagram

A DFD shows what kind of information will be input to and output from the system, how the data will advance through the system, and where the data will be stored.

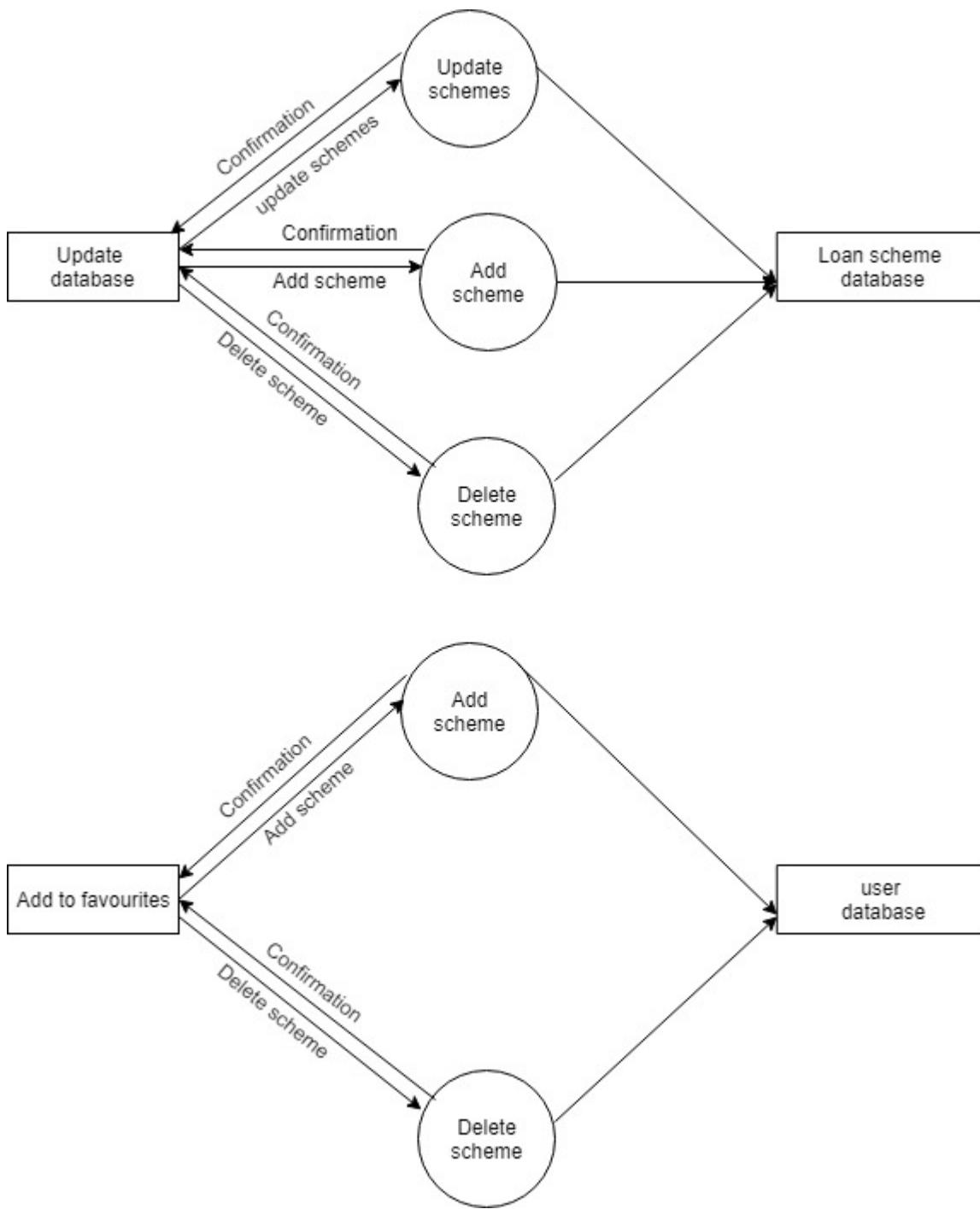
LEVEL 0



LEVEL 1



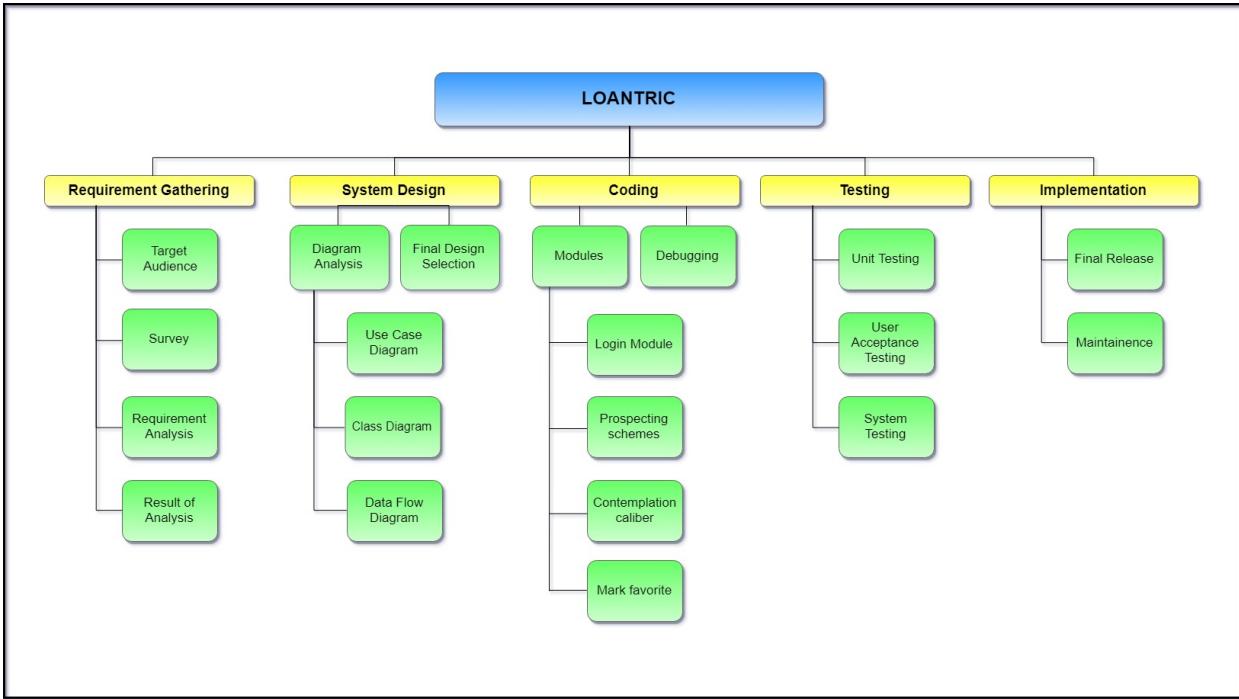
LEVEL 2



6.PROJECT SCHEDULING AND ESTIMATION

6.1 Functional Decomposition (WBS)

A work-breakdown structure (WBS), also referred to as "Contract Work-Breakdown Structure" or "CWBS", in project management and systems engineering, is a deliverable-oriented breakdown of a project into smaller components. A work breakdown structure is a key project deliverable that organizes the team's work into manageable sections.



[Link to View WBS](#)

6.2 Roles and Responsibilities

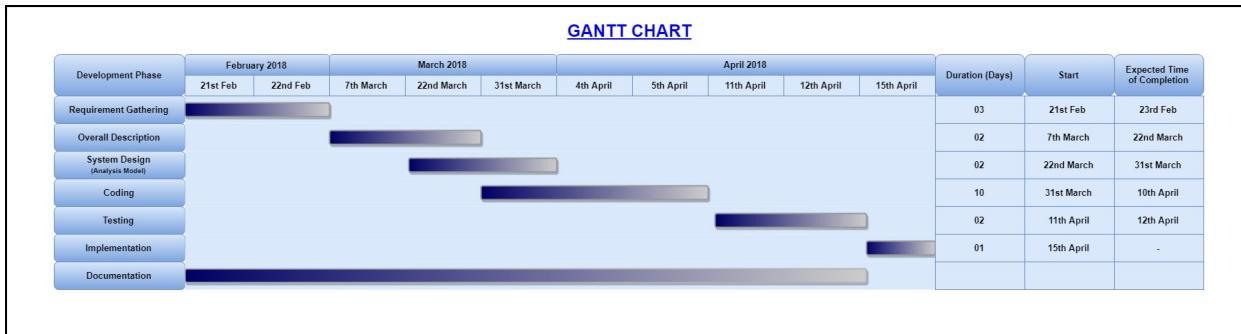
	PRIYANK DESAI		VEDANG LAD
	HARDIK SHAH		PANKHURI AGRAWAL

<u>Phases</u>	<u>Tasks</u>	<u>Sub-tasks</u>	<u>Responsibilities</u>
Requirement Gathering	Target Audience		 
	Survey		 
	Requirement Analysis		 
	Results of Analysis		 
System Designing	Diagram Analysis	Use-Case Diagram	 
		Class Diagram	 
		Data Flow Diagram	   

	Final Diagram Selection		
Coding	Modules	Login Module	 
		Prospecting Schemes	 
		Contemplation Calibre	 
		Mark favourite	 
		Debugging	
Testing	Unit Testing		 
			 
			 
Implementation	Final Release		
	Maintenance		

6.3 Task Duration

A Gantt chart is a type of bar chart that illustrates a project schedule. This chart lists the tasks to be performed on the vertical axis, and time intervals on the horizontal axis. The width of the horizontal bars in the graph show the duration of each activity. Gantt charts illustrate the start and finish dates of the terminal elements and summary elements of a project. Terminal elements and summary elements constitute the work breakdown structure of the project.



[Link to View GANTT CHART](#)

6.4 Size and Budget Estimation

We use Basic COCOMO model for estimating the product-size metrics of our respective project.

	<u>Most Likely</u>	<u>Optimize</u>	<u>Pessimistic</u>
Login module	125	135	150
Search Schemes	110	140	190
Compare Schemes	85	100	115
Add to favorites	95	110	130

$$Ev = (o+4m+p)/6$$

where Ev : estimated value of any variable size (LOC)

m : most likely

o : optimize

p : pessimistic

<u>Functions</u>	<u>Estimated LOC</u>
Login module	131
Search schemes	128
Compare Schemes	93
Add to favorites	104
Total calculated LOC	456

Assume that the cost for developing 1 LOC is 120 INR/LOC

Estimated Cost = (INR/LOC)*LOC

$$= 120 * 456$$

$$= 54720 \text{ INR}$$

- The basic COCOMO estimation model is given by the following expressions:
 - Effort = $a^1 \times (\text{KLOC})^{a^2}$ PM
 - $T_{\text{dev}} = b^1 \times (\text{Effort})^{b^2}$ Months
 - where,
- KLOC is the estimated size of the software product expressed in Thousands Lines of Code,
- a^1, a^2, b^1, b^2 are constants for each category of software products,
- T_{dev} is the estimated time to develop the software, expressed in months,

- Effort is the total effort required to develop the software product, expressed in person months (PMs).

Using Semi-Detached Category of simple COCOMO Estimation,

a1=3.0 ; a2=1.12 ; b1=2.5 ; b2=0.35

$$\text{Effort} = 3.0(\text{KLOC})^{1.12} \text{ PM}$$

$$= 1.244 \text{ PM}$$

$$T_{\text{dev}} = 2.5(\text{Effort})^{0.35} \text{ Month}$$

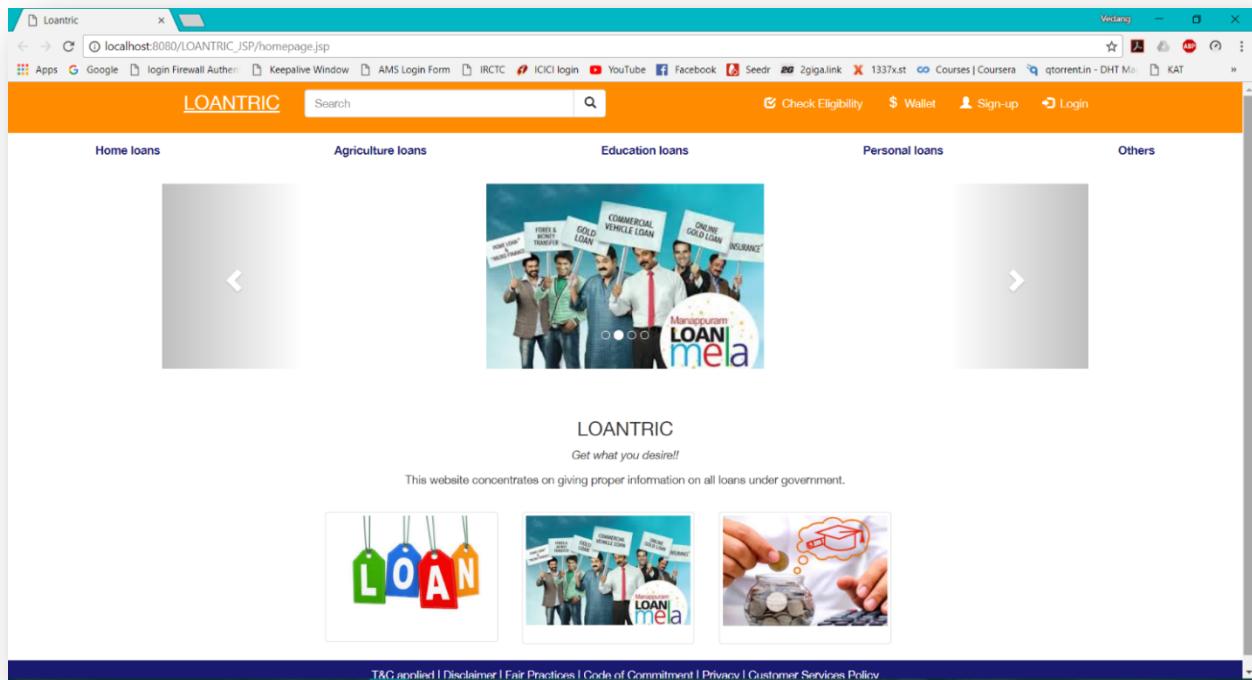
$$= 2.8 \text{ months}$$

=approximately 3 months.

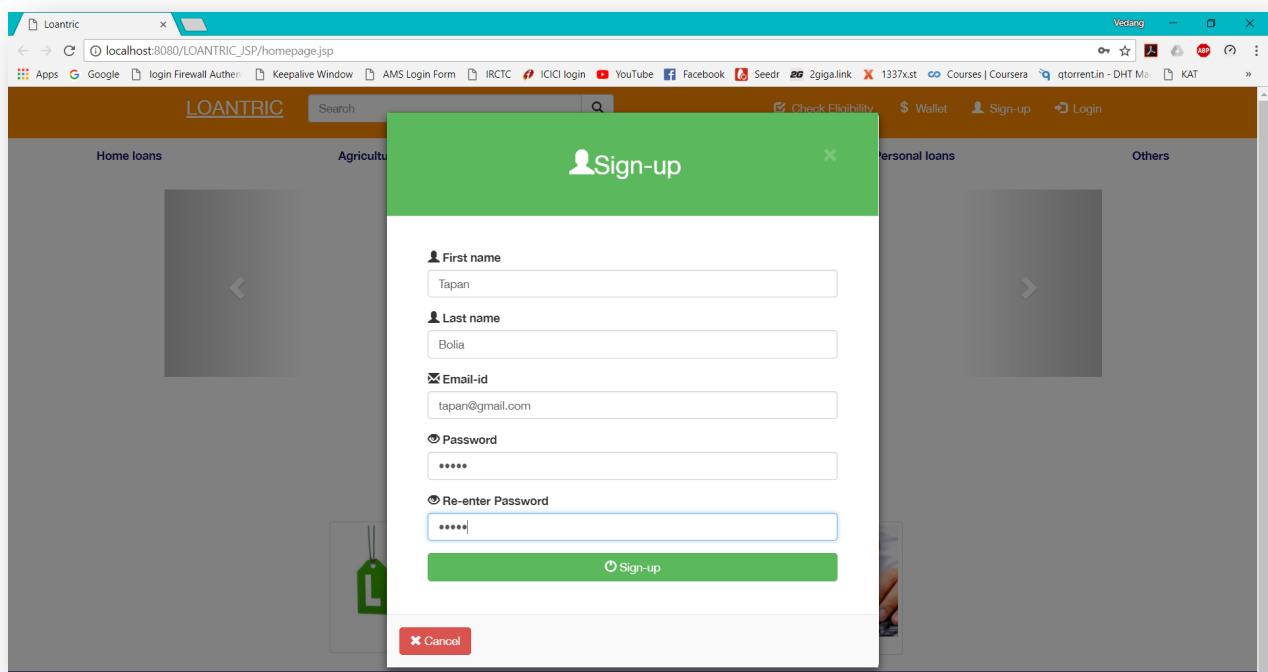
6.5 Risk Mitigation, Monitoring and Management (RMMM)

Risk Summary	Risk Category	Probability	Impact (1-4)	RMMM
Data Theft	Technical	0.37	2	<p>Mitigation : Database access given only to admin.</p> <p>Monitoring : Limited number of people can update or edit the database.</p> <p>Management : Use a better security, protect the database with passwords.</p>
Transparency of Data	Technical	0.23	2	<p>Mitigation : Have a eye on data that it is accurate and comes from a trusted source.</p> <p>Monitoring : On screen results should be 100% accurate.</p> <p>Management : Add only those data which comes officially from government's side</p>
Inefficient Web Application Security	Known	0.17	3	<p>Mitigation : Use more optimized codes and instruction.</p> <p>Monitoring : Introduce all aggressive vulnerabilities for better working of software.</p> <p>Management : Optimization</p>
Performance Risk	Unpredictable	0.41	4	<p>Mitigation : Use an efficient platform or environment for developing the software.</p> <p>Monitoring : Testing and Deployment should be done at every critical phase.</p> <p>Management : Remove massive files, log files and backup files for more space.</p>

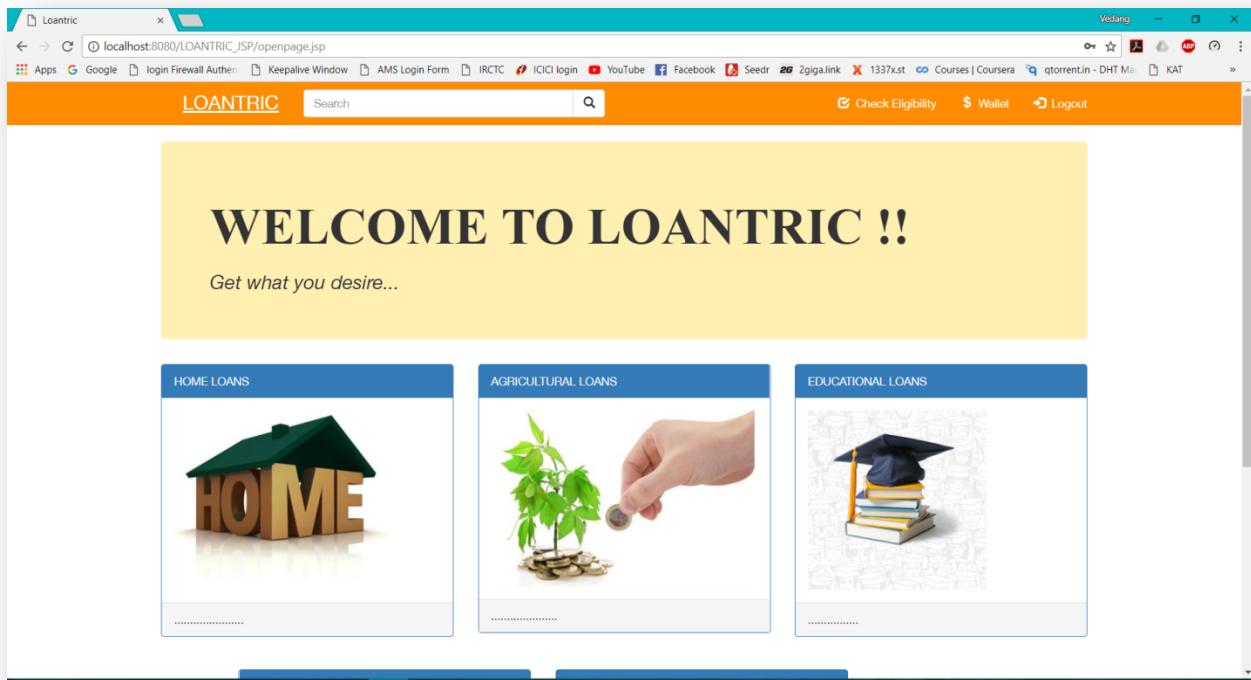
7. IMPLEMENTATION & TEST-CASES



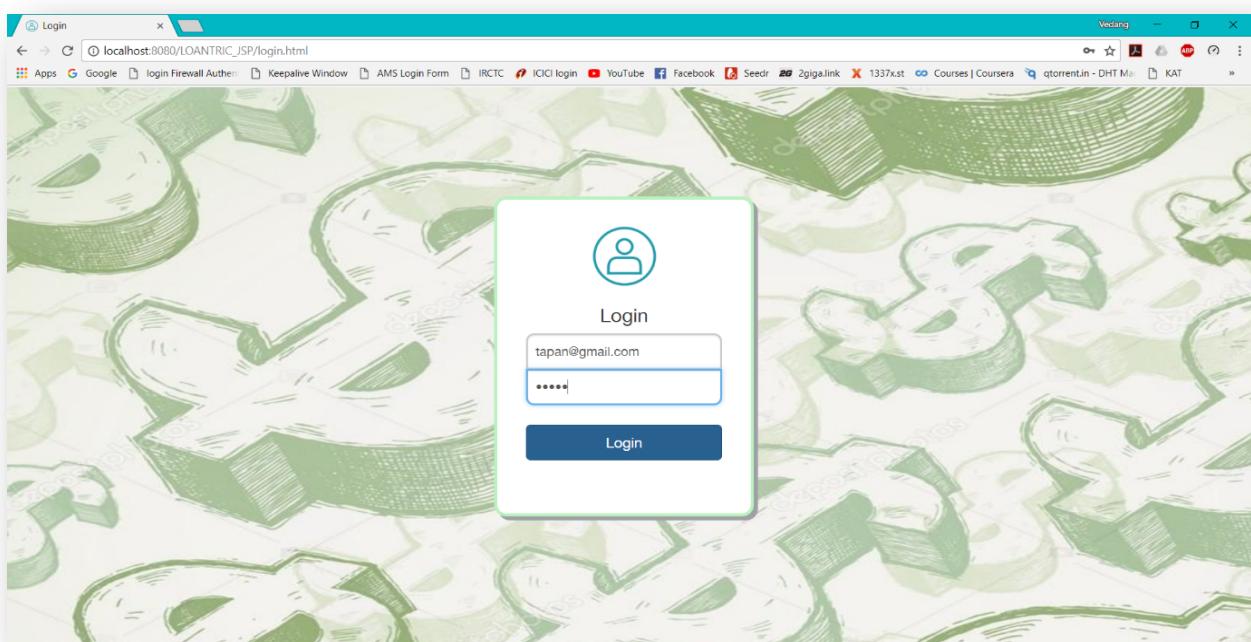
Home page



Sign-up module



Logged-in open-page



Login module

Home Loans Vedang

localhost:8080/LOANTRIC_JSP/HomeLoan.jsp

Check Eligibility \$ Wallet Logout

LOANTRIC

Home Loan

- Agriculture Loan
- Education Loan
- Personal Loan
- Others

Add to Wallet

Aditya Birla Housing Finance LTD (ABHF)

The Aditya Birla Group is in the League of Fortune 500. Anchored by an extraordinary force of over 120,000 employees, belonging to 42 nationalities. Over 50 per cent of its revenues flow from its overseas operations spanning 35 countries. Loan tenure upto 30 years.Quick and transparent processing.Door step services.Choose between simple EMIs or structured repayments.Nil pre-payment charges for floating rate homeloans.Attractive balance transfer option available.

ICICI Home Finance Company LTD

As one of the largest Home Loan financiers in India, ICICI go the extra mile to make your dreams come true. Be it attractive interest rates, simplified paperwork or faster processing, you get your loan easily, quickly and just the way you need it. Doorstep service,Speedy loan sanction,Simplified documentation,Attractive interest rate options: Floating Rate, Fixed Rate or Part-fixed and Part-floating Rate. Loan amounts ranging from Rs. 3 lakh to Rs. 3 crore, Sanction prior to selection of property, Insurance options for your Home Loan at attractive premium,Free Personal Accident Insurance,Guidance throughout the process

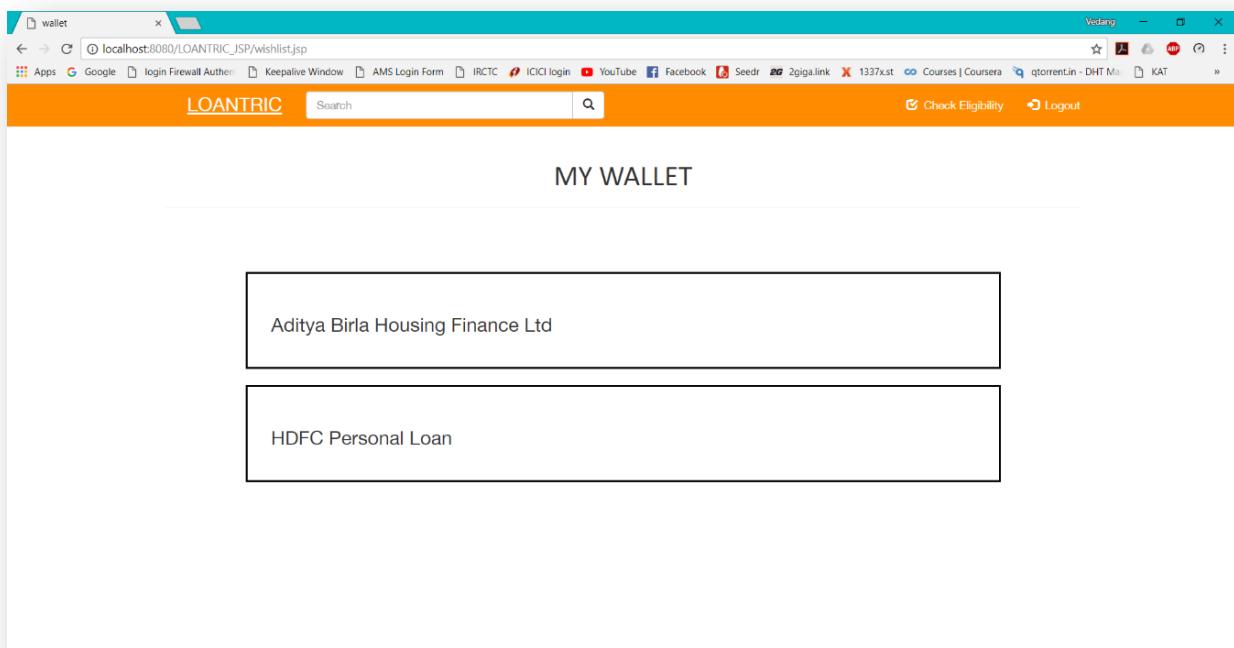
Add to Wallet

Reliance Home Finance LTD (RHF)

Scheme information

3	hardik	shah	hardik	hardik@mail.com	NUL
4	dankhuri	aarawal	dankhuri	dankhuri@mail.com	NUL
11	aasheer	deerbhai	aasheer	aasheer@mail.com	NUL
12	Taoan	Bolia	taoan	taoan@mail.com	NUL
NUL	NUL	NUL	NUL	NUL	NUL

Database after login



Wallet

4	dankhuri	aorawai	dankhuri	dankhuri@gmail.com	HULL	HULL
11	aasheer	deerhai	aasheer	aasheer@gmail.com	HULL	HULL
12	Tapan	Bolia	tapan	taoan@gmail.com	HULL	Aditya Birla Housing Finance Ltd

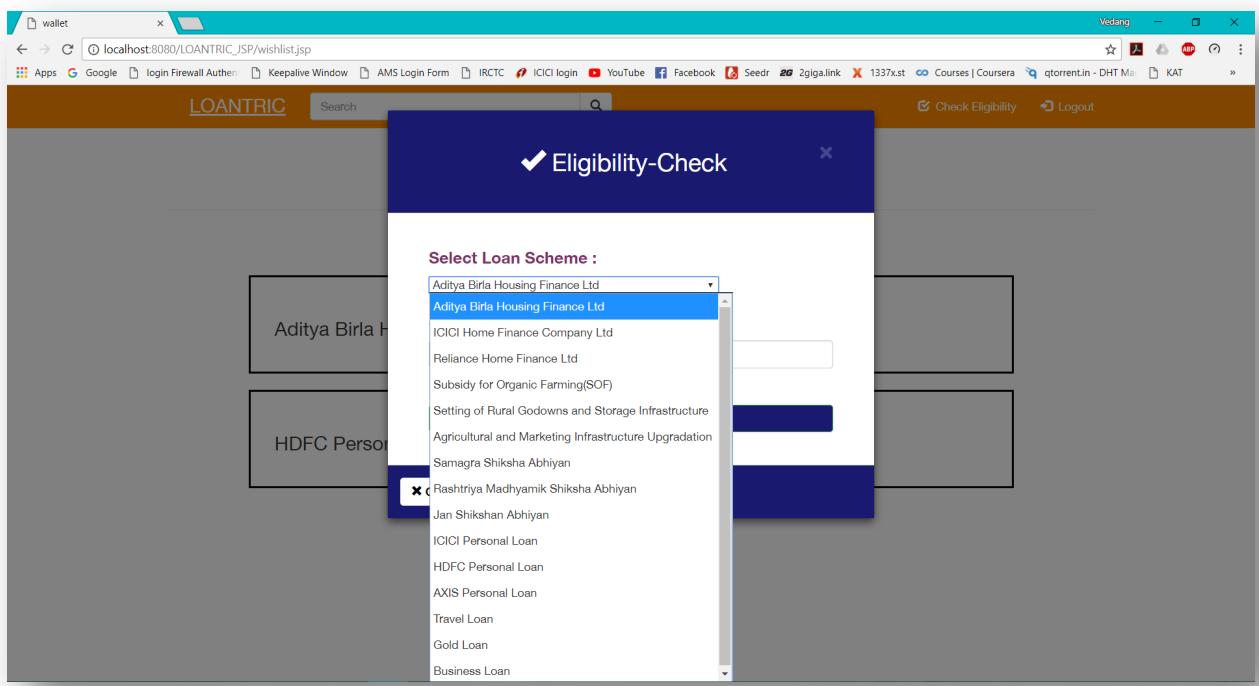
Database when schemes are added to wallet

The screenshot shows a web browser window titled "Personal Loans" with the URL "localhost:8080/LOANTRIC_JSP/PersonalLoan.jsp". The page has a header with the LOANTRIC logo and navigation links for "Check Eligibility", "Wallet", and "Logout". On the left, there's a sidebar with categories: "Home Loan", "Agriculture Loan", "Education Loan", "Personal Loan" (which is selected and highlighted in orange), and "Others". The main content area displays three sections for "ICICI Personal Loan", "HDFC Personal Loan", and "AXIS Personal Loan", each with an "Add to Wallet" button. A "Compare Personal Loans" button is located at the bottom of the main content area.

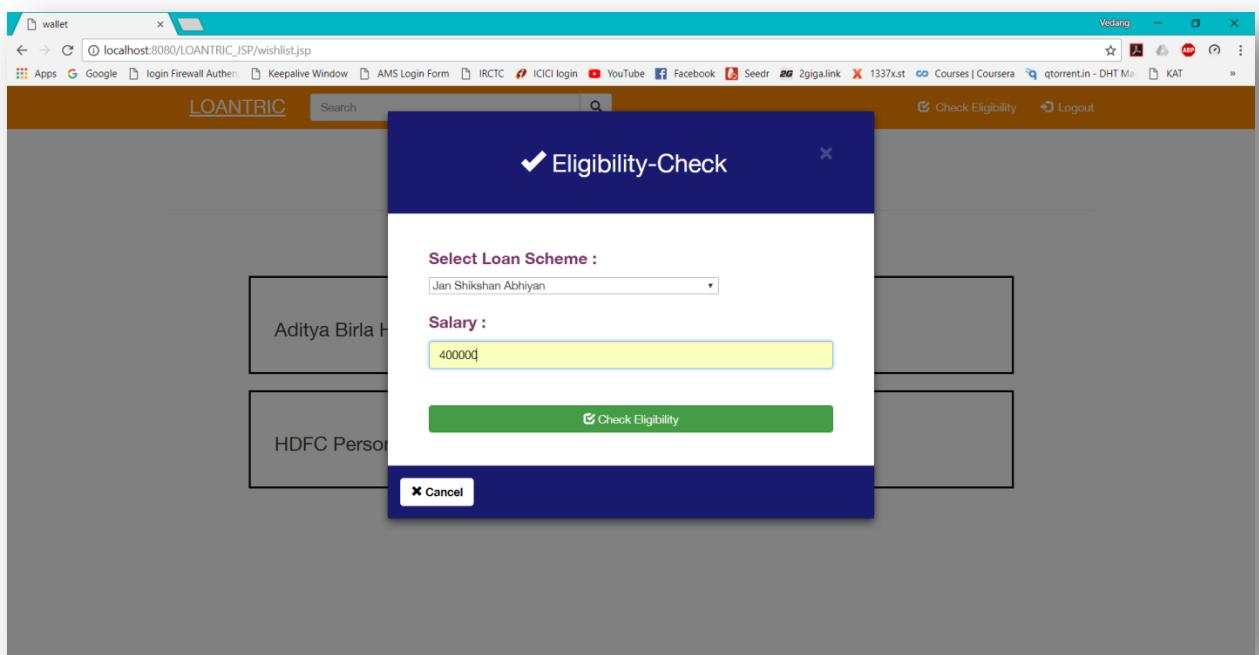
Check for eligibility

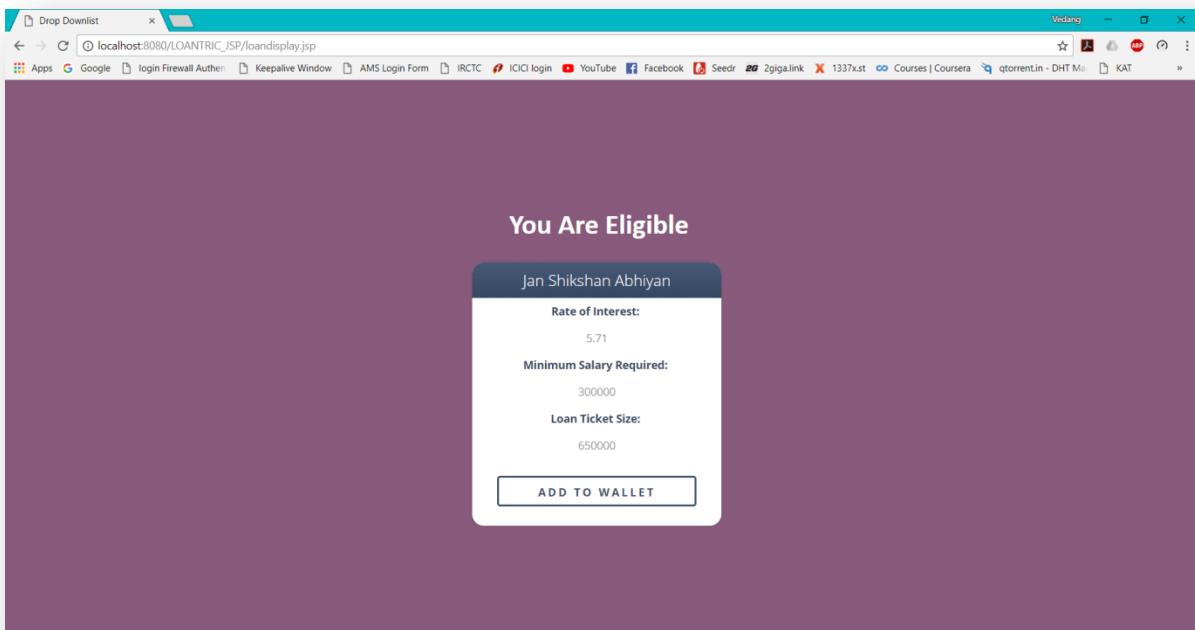
The screenshot shows a modal dialog box titled "Eligibility-Check" with a checkmark icon. It contains fields for "Select Loan Scheme" (dropdown menu showing "Aditya Birla Housing Finance Ltd") and "Salary" (text input field with placeholder "Enter Your Salary"). Below these fields is a "Check Eligibility" button. At the bottom of the dialog is a "Cancel" button. The background of the page is dimmed, indicating the modal is active.

Eligibility module

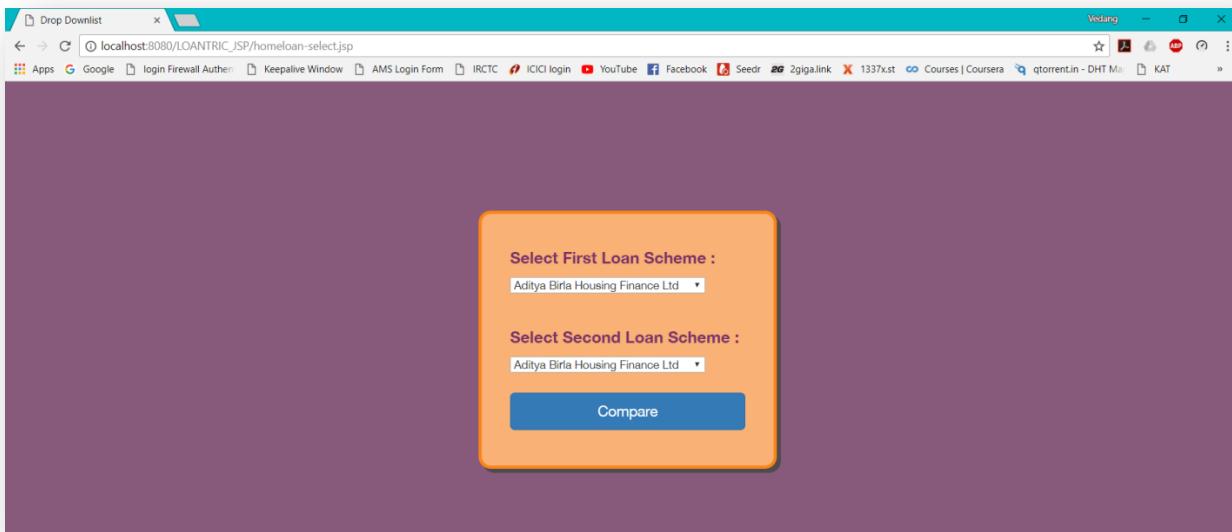


Eligibility module with dropdown list

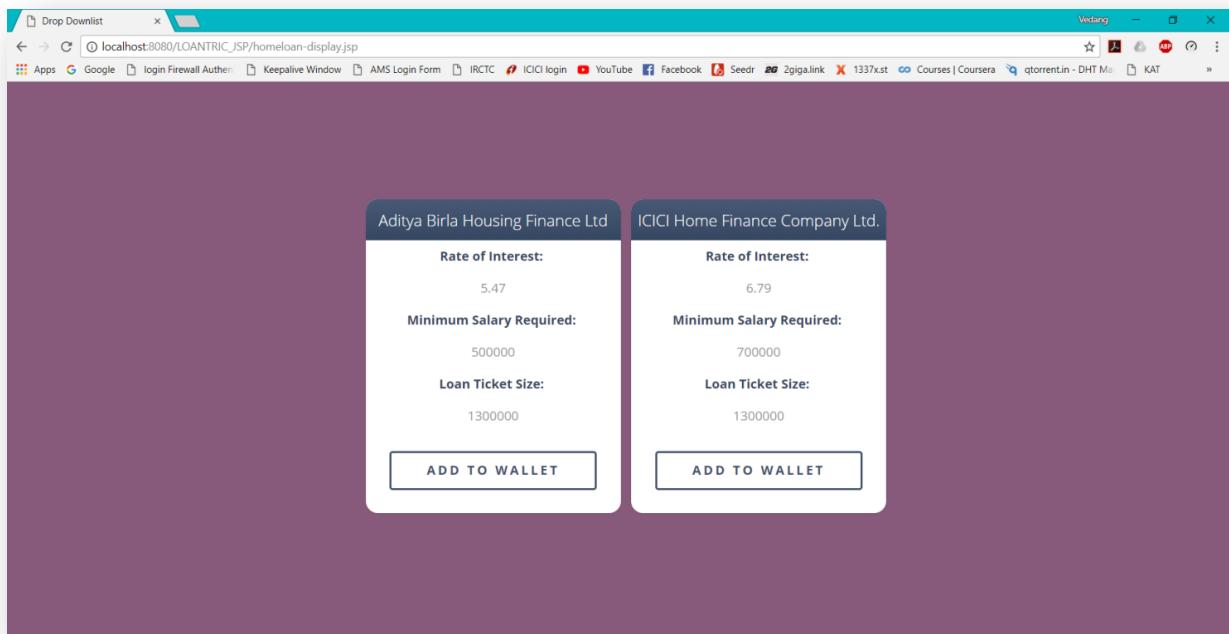




Displayed result when the criterion is met



Comparison module



Two schemes are compared

```
Microsoft Windows [Version 10.0.16299.371]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\pankhuri>CD Documents

C:\Users\pankhuri\Documents>path.bat

C:\Users\pankhuri\Documents>set path=C:\Program Files\Java\jdk1.8.0_131\bin

C:\Users\pankhuri\Documents>javac Server.java

C:\Users\pankhuri\Documents>java Server
Server waiting for connection on port 444
Received connection from /192.168.43.116 on port 63350

From Client: hello
Please enter something to send back to client..
hi
how can I help you?

From Client: Please help me in finding a home loan
Please enter something to send back to client..
-
```

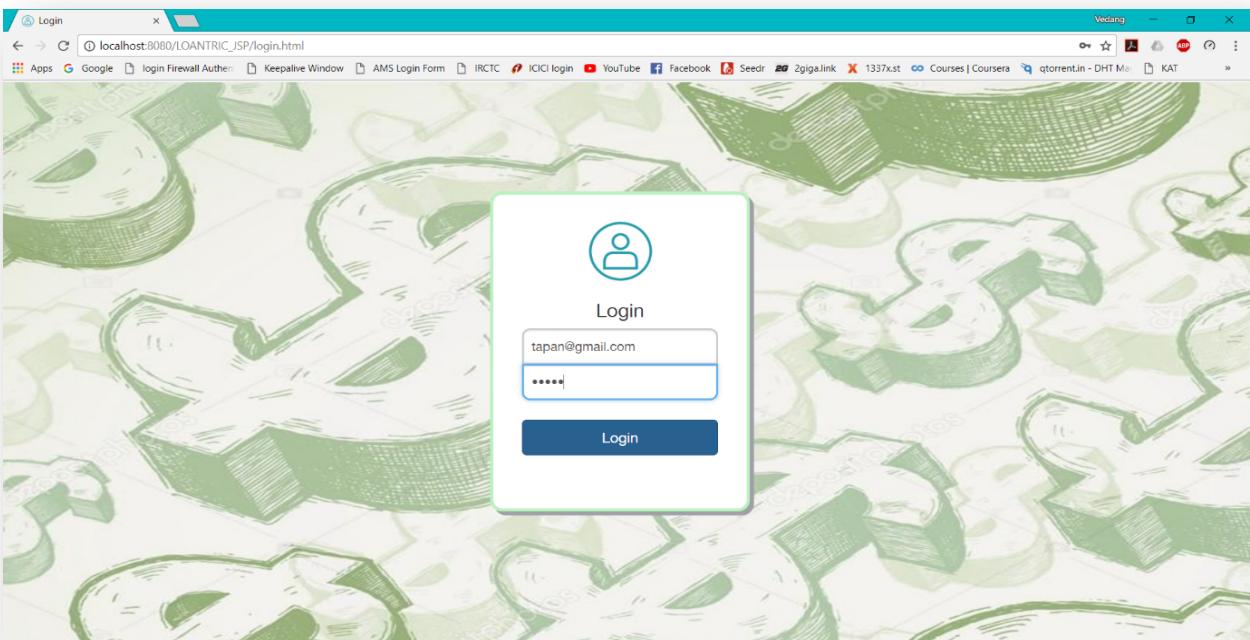
Server side Chat

```
Command Prompt - java Client  
Microsoft Windows [Version 10.0.16299.371]  
(c) 2017 Microsoft Corporation. All rights reserved.  
C:\Users\Vedang>cd desktop\project  
C:\Users\Vedang\Desktop\project>javac Client.java  
C:\Users\Vedang\Desktop\project>java Client  
Client connected to /192.168.43.169 on port 444  
Type your message to send to server..type 'EXIT' to exit  
Hello  
Type your message to send to server..type 'EXIT' to exit  
From Server: hi  
Please enter something to send to server..  
From Server: how can I help you?  
Please enter something to send to server..  
Please help me in finding a home loan  
Type your message to send to server..type 'EXIT' to exit
```

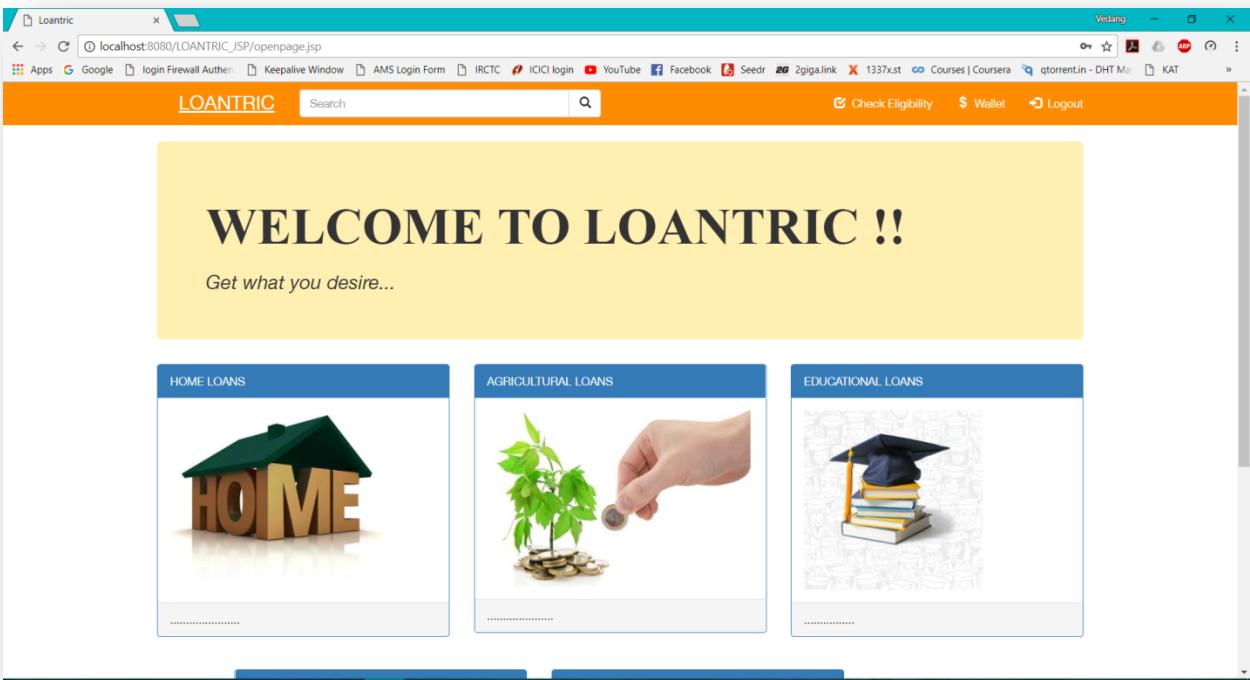
Client side Chat

TEST CASES:

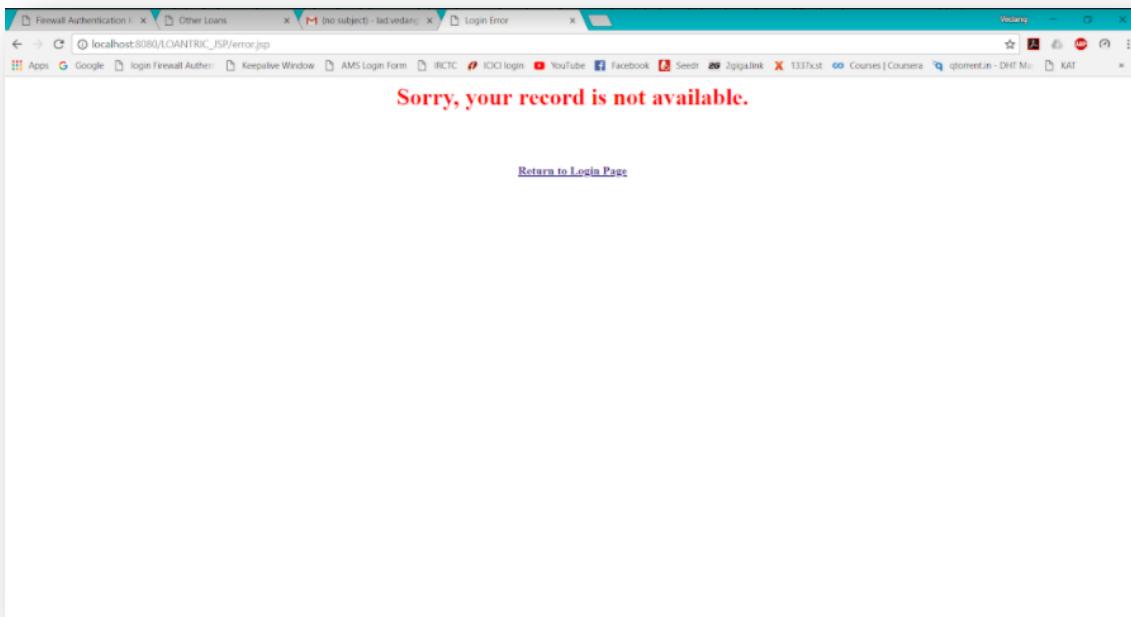
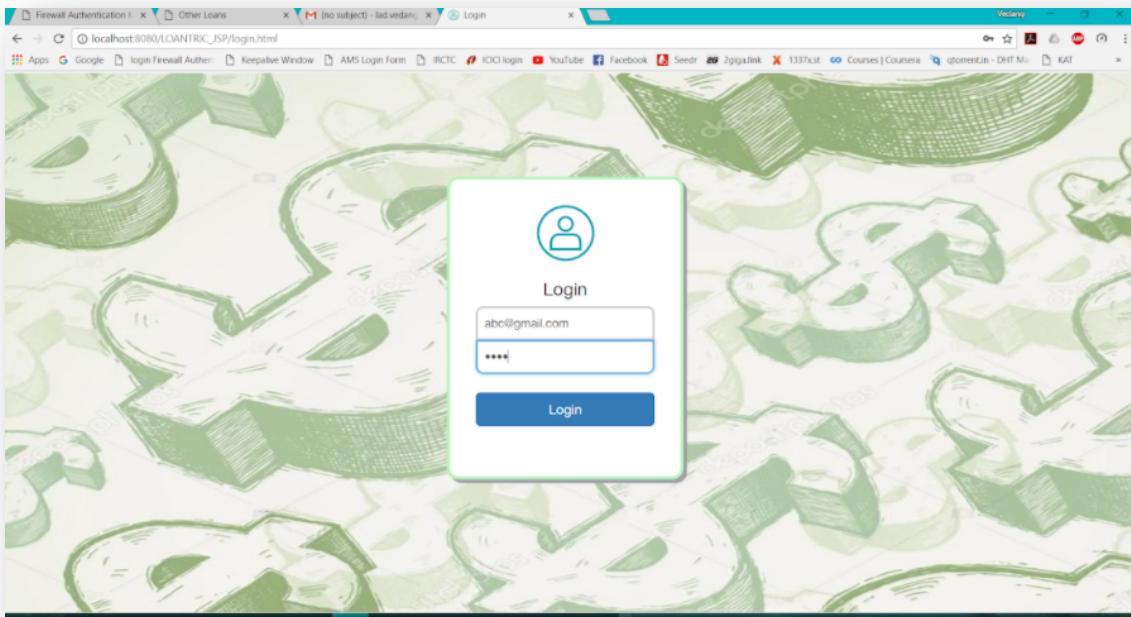
1.Login module



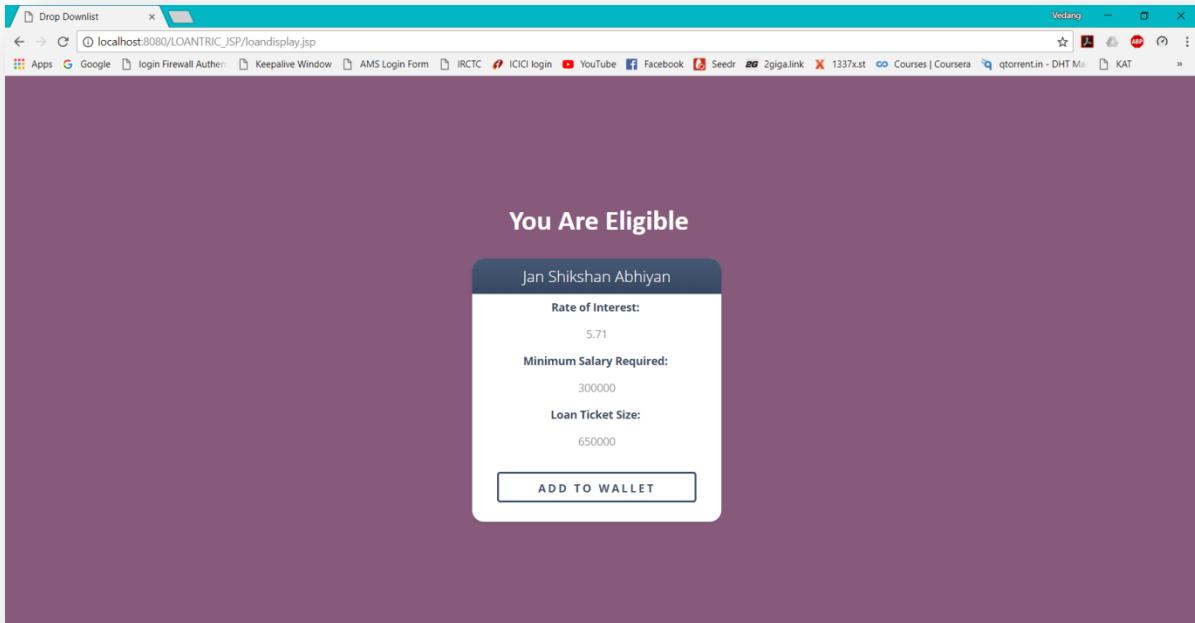
When user enters correct details the user gets logged in to open page→



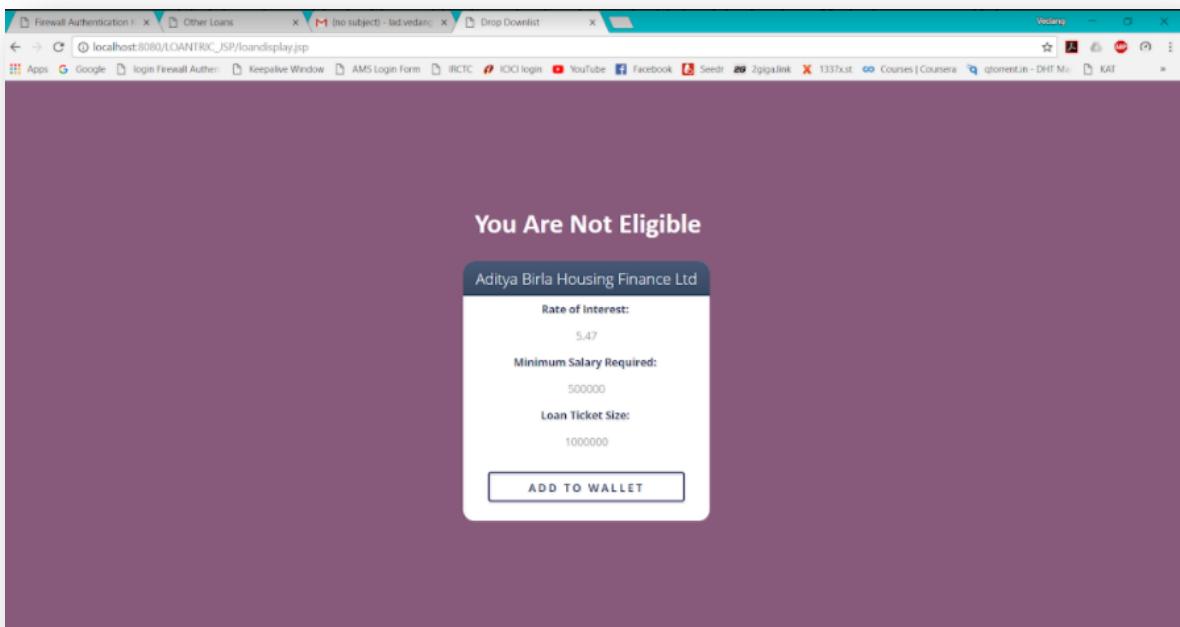
If the user enters wrong details→



2. Eligibility check-the eligibility criterion is decided on the basis of annual income
If the required conditions are met “You are Eligible” message is displayed→

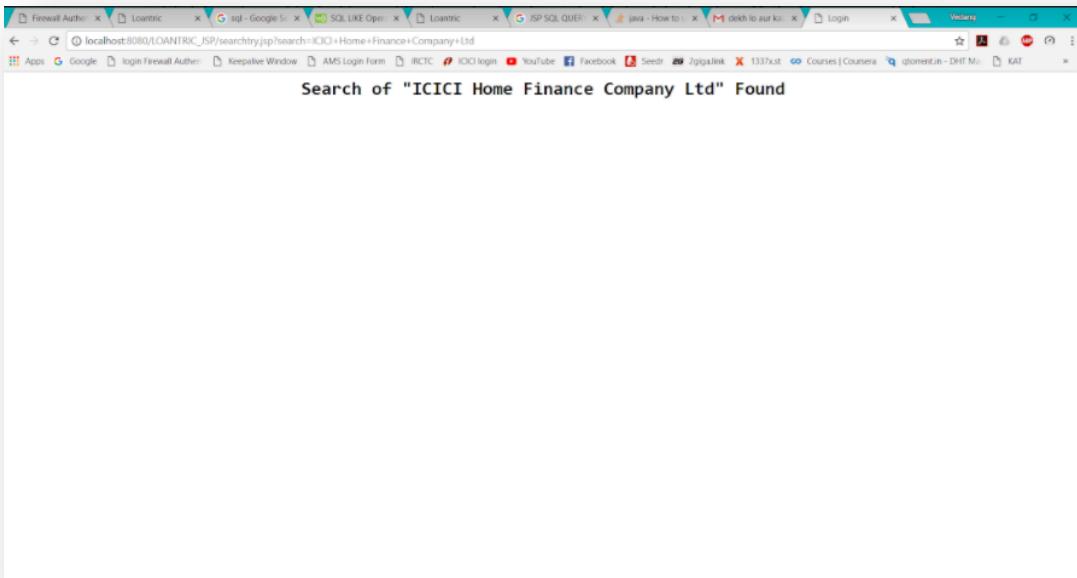
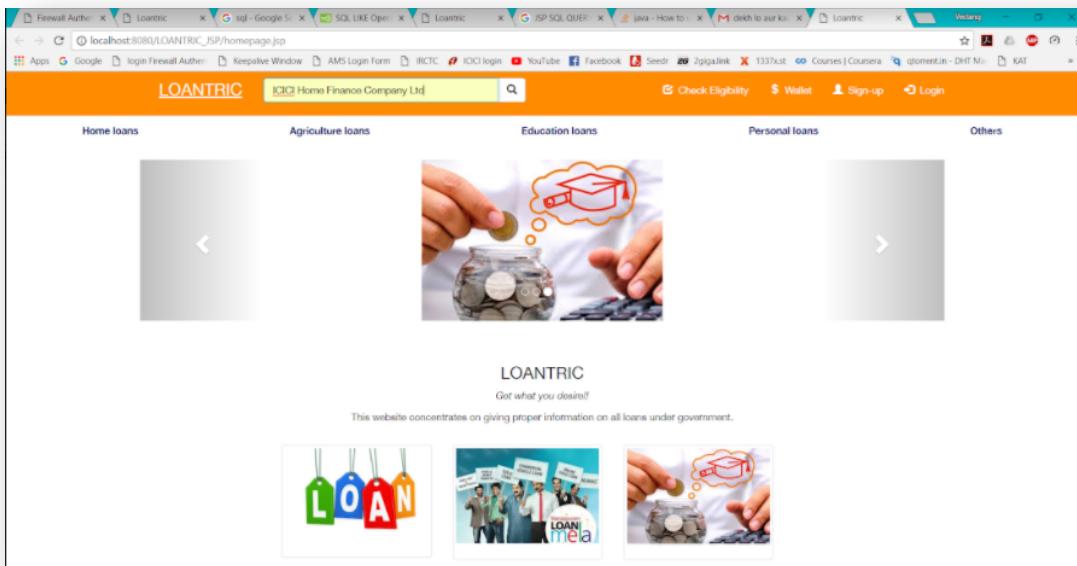


If the criterion is not met “You are not eligible” message is displayed→

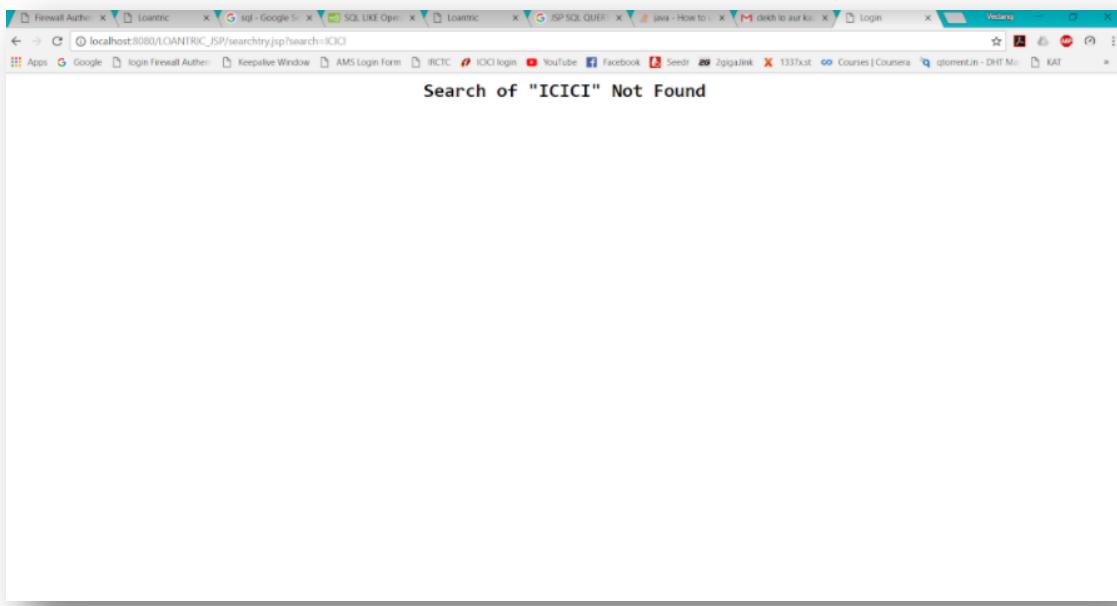
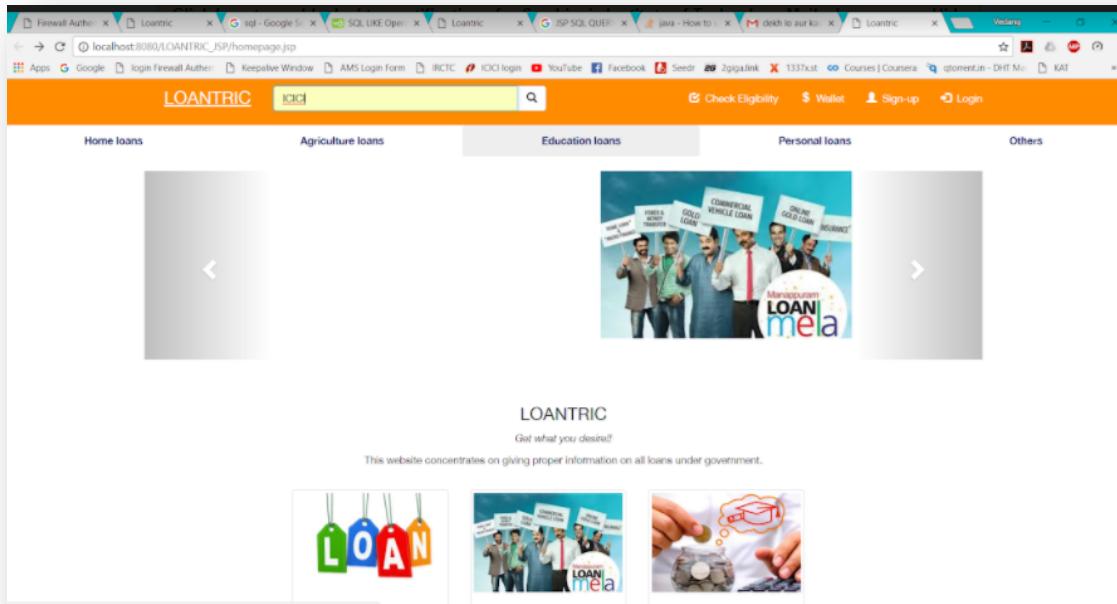


3.Search Bar

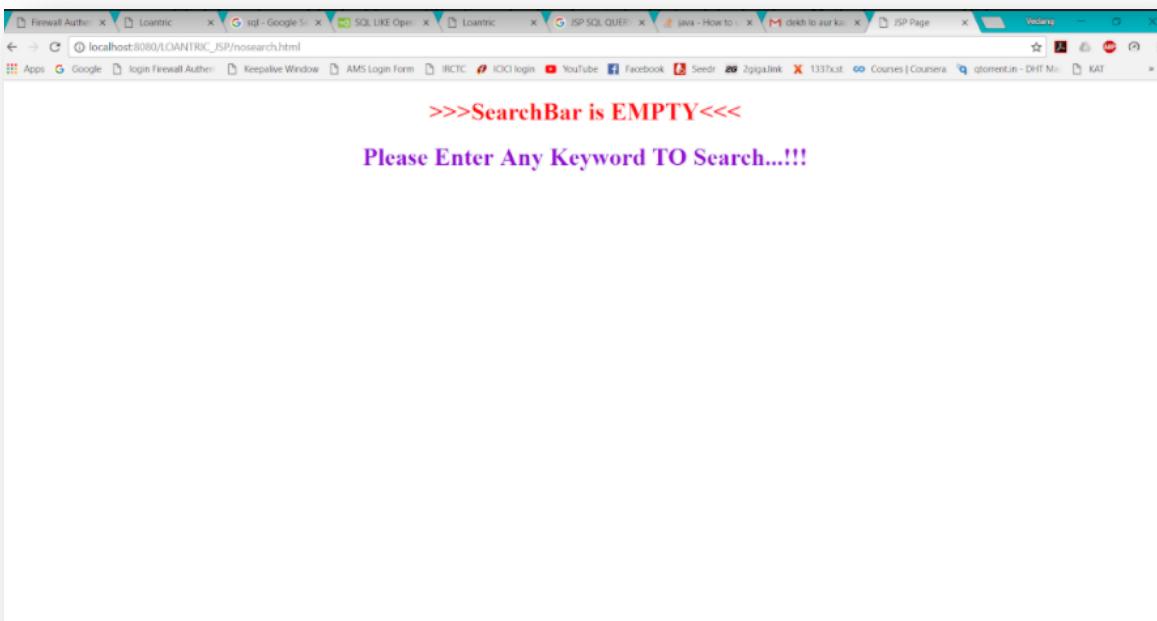
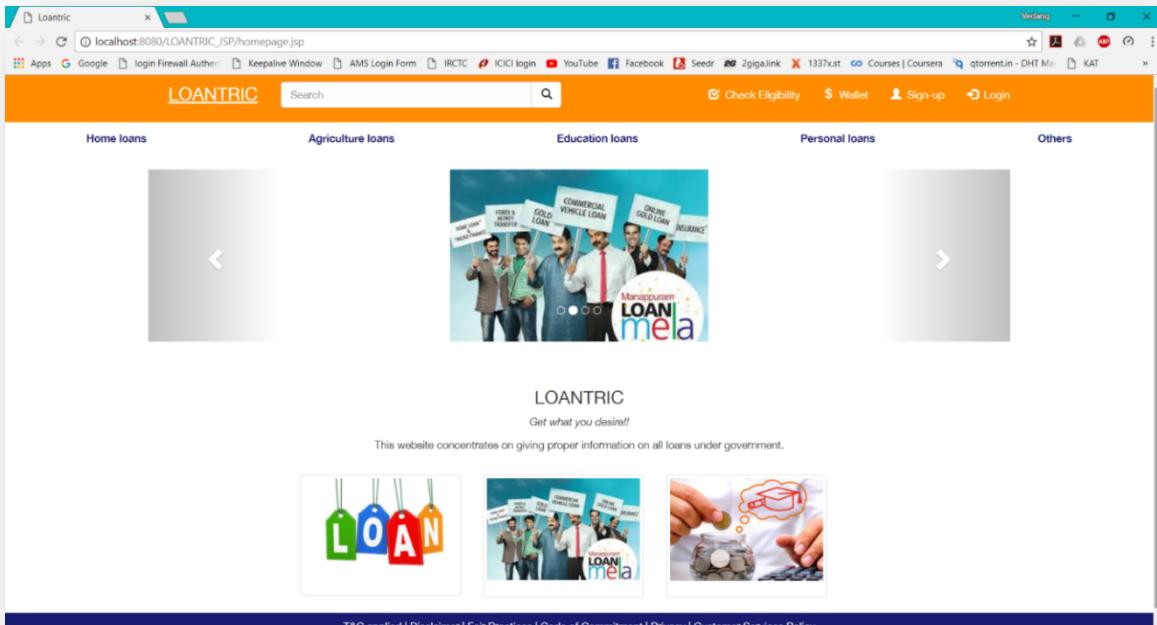
If the user enters correct scheme name or keyword the word is displayed (here the data is fetched from the database)→



If the user enters incorrect or half information →



If the search bar is left empty→



4.Wallet limits

The limit to the addition of favourite scheme is kept to 3 so if the user exceeds that the warning message is displayed→

