

Final Year Project Report



Online Loan application and verification system

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Abstract

This project is aimed at developing an online loan application and verification system is importance to all the people who want to take some loan. Loan application and verification system is and internet-based application that can be easily accessed by the people throughout the world. This system can be used to automate the workflow of loan application and their approvals and rejections. Documents, approval, and rejection of loan is also automated. There are features like Submit loan application, check status of loan application, upload the scanned copies of documents, approve application, reject application, request for the scanned copies of documents.

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Chapter 1

Introduction

Introduction:

1.1 Introduction

Vision of the project is to get a loan is a very tiring and complicated process in Pakistan. It may take weeks even months for loans to get approved and people must visit the loan office again and again for document and verification. Here our proposed web-based project automates the loan process, which is suitable for both, bankers as well as customer's side. Here customers may see various loans provided along with rate of interest and required documents.

Here once the customer fills basic enquiry form, it reaches the bank server, so he gets a login id password. The server administrator now can check it and select whether to go forward or reject the candidate. If he needs to go forward the banker may select to send customer to next stage. Now the customer gets stage 1 approval and needs to upload his scanned documents to the site through his login. Once the documents are submitted, they are cross verified at the server and reply is sent to server. The bank may now cross verify customer details and request extra documents by sending online alerts to the customer email. The customer just needs to upload needed documents online and can also track loan status. He gets a Message verification as once his loan has been approved from confirming the process.

1.2 Background and existing system

Customer can apply for a loan and after approved it they can track their details from online. This system provides detail about the customers, their loan details, and the details of how much loan customer needed. After submitted the application system administrator can check the application and then accept or reject it. After, accepting the application the user can move to the next step which is uploading the scanned copies of documents once he/she upload the scanned documents successfully they are cross verified by the server and after successfully verified the documents customer get the confirmation message that your loan has been approved.

1.3 Problem in existing system

Here the existing system is a manual that does not maintain details with proper security and cannot track details easily. It does not allow the customer to check their profile in proper way which leads customer dissatisfaction. Does not provide option to download loan form Existing system does not contain functionalities of fast retrieval information such as customer details and maintenance of all the loan details, so it involves lots of paperwork. Does not user-friendly interface. Lots of time is required to manage customer info & details so it feels that existing system not accurate and therefore maintenance becomes very complicate. It used to take more time to find customers because there are required extra manual effort such as to hire candidate. Difficulty in generating different

reports as per the business requirement

1.4 Proposed system

Customer can apply for a loan and after approved it they can track their details from online. This system provides detail about the customers, their loan details, and the details of how much loan customer needed. After submitted the application system administrator can check the application and then accept or reject it. After, accepting the application the user can move to the next step which is uploading the scanned copies of documents once he/she upload the scanned documents successfully they are cross verified by the server and after successfully verified the documents customer get the confirmation message that your loan has been approved.

1.5 Main modules

1.5.1 User management

Registration: Customer, User can registration with basic information like Username, Mobile no, email id etc.

Login: Admin, Users can login with username and password. Manage

Profile: Admin, Users can manage profile and update information

1.5.2 Loan Application

Admins manage loan application which is sent by customer using the system.

1.5.3 Customer Information Module

It shows all an information & details of the customer database which includes all the details like customer name, address, contact no, bank account no, PAN no, email id, etc. Only Admin can manage customer record.

1.5.4 Loan transaction module

Loan transaction module includes the system administrator can accept or reject the application send by the user for loan.

1.5.5 Query Module

- It shows the record of the applicants that are rejected for loan by the admin.
- It shows the record of the applicants that are approved for loan by the admin.
- A query module gives information for customer, Customer user can search information by entering customer ID.
- It displays details like rejected applicants, approved applicants, new applicants.

1.6 Expected Outcome

User side:

User can have the application submission form through which user/customer can send the loan application at server side. And user/customer can check the status of his/her application.

Admin Side:

Admin can approve or reject the application of the user and cross check the scanned copies that are sent by the user/customer.

1.7 Tools and Technologies

- Visual Studio 2019
- Sql Server Management Studio 2017
- Internet Information Service
- Model View Controller (MVC)
- .NET Framework
- HTML
- CSS
- C#

1.8 Activity Index

Sr No	Activity	Duration	Deliverable
1	Proposal	1 week	What we actually going to
2	Database creation	1 week	Selection of Database app and create Databases
3	Design	2 weeks	Software requirement specification
4	Coding	3 weeks	Single page web (SPW)
5	Testing	1 week	Rest back ends for SPW
6	Implementation	1 week	Testing complete system and debugging error

Chapter 2

Requirement Analysis

Requirement Analysis:

2.1 Requirement analysis

Requirement analysis is divided into two main categories which are functional requirement and non-functional requirements which are as followed:

2.1.1 Functional Requirements

All functional requirements of proposed system are as followed:

Customer and vision:

- Registration
- Login
- Verification of degree
- Apply for loan application
- Change password
- Check application status
- Upload scanned copies of documents
- Accept application
- Reject application
- Search application

Admin:

- Login
- Change password
- Accept application
- Reject application
- Search application
- Send member to the next step

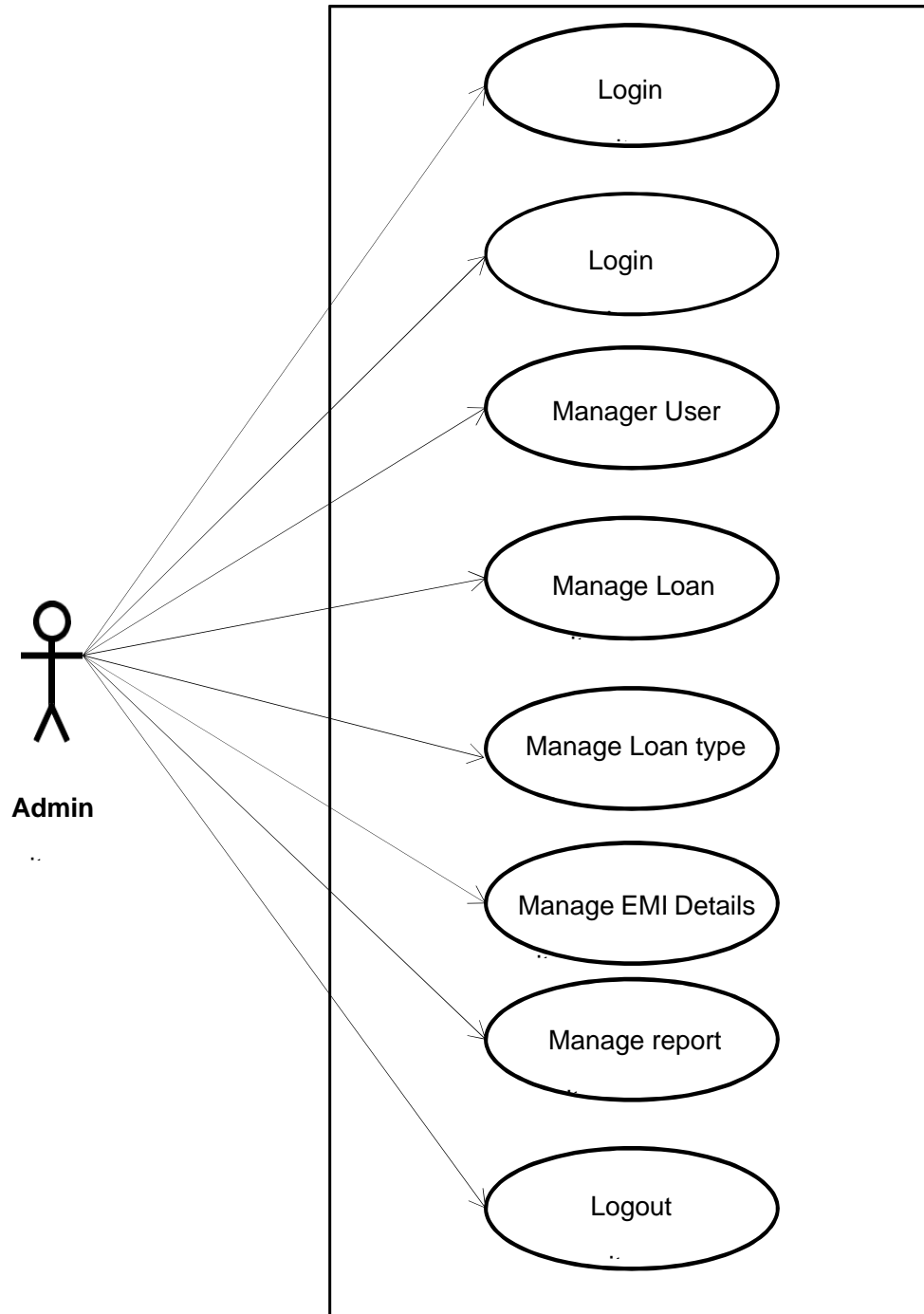
2.1.2 Non-Functional requirements

All non-functional requirements of proposed system are as follows:

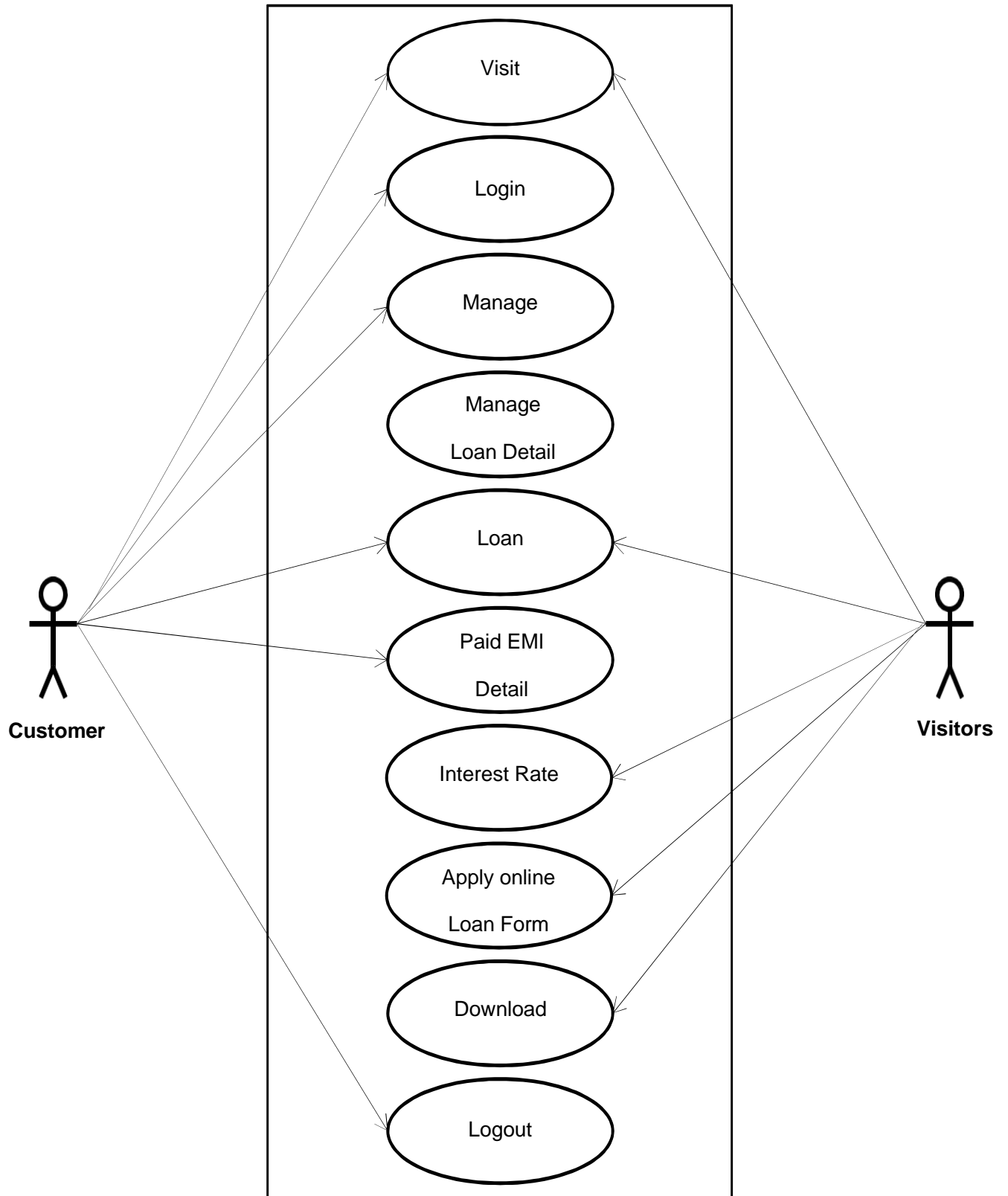
- Availability
- Security
- Reliability
- Interactive design and usability
- Performance and efficiency
- Privacy

2.2 Use case diagram

Admin Side:



Customer or visitor Side:



2.2.1 Admin Login

Admin Login	
Description	Login required for admin
Specifications	<p>Title: Login</p> <p>Actors: Administrator</p> <p>Intent: Describe administrator interacts with the system and logged in</p> <p>Post-condition: Administrator performs several tasks</p> <p>Alternate scenario:</p> <ol style="list-style-type: none">1. Incorrect password2. Login failed3. System displays a message that (Invalid user ID, User id already exist) <p>Uses/Extends: N/A</p> <p>Frequency: Frequent</p> <p>Issues: N/A</p>
Priority	High

2.2.2 Administrator Manage Customers

Administrators manage customer's applications	
Description	Administrators must be able to manage customer's applications
Specifications	<p>Title: Customers applications management</p> <p>Actors: Administrator</p> <p>Intent: Describe administrator interacts with the customer's applications and details of customers and also admin can approve or reject the application by verify the applications.</p> <p>Pre-conditions: Administrator login to the system</p> <p>Post-condition: Administrator interact with the system to manage customer's applications</p> <p>Main scenario:</p> <p>Admins manage customers by:</p> <ol style="list-style-type: none">1. See applications for verification2. Administrators accept or reject the applications3. Administrators verify and cross checked the scanned documents <p>Uses/Extends: N/A</p> <p>Frequency: Frequent</p> <p>Issues: N/A</p>
Priority	High

2.2.3 Customer Sign-Up

Customer/visitor Sign-Up	
Description	Customer/visitor must be able to Sign-Up
Specifications	<p>Title: Customers Sign-Up</p> <p>Actors: Customer and visitor</p> <p>Intent: Describe customer/visitor interacts with the system for signup only once.</p> <p>Pre-conditions: A customer/visitor must open the signup page.</p> <p>Post-condition: Customer/Visitor Login.</p> <p>Main scenario:</p> <ol style="list-style-type: none">1. Customer enters required information2. Signup is successful <p>Alternate scenario:</p> <ol style="list-style-type: none">1. Registration failed due to the inadequate information provided by the customer/visitor.2. Not registered due to the wrong information provided by the customer/visitor. <p>Frequency: Frequent</p>
Priority	High

2.2.4 Customer Login

Customer/visitor Login	
Description	Customer/visitor must be able to Login
Specifications	<p>Title: Customers/visitor Login.</p> <p>Actors: Customer/Visitor</p> <p>Intent: Describe customer/visitor interacts with the system for logging in.</p> <p>Pre-conditions: A customer/visitor must open the login page to get login.</p> <p>Post-condition: Customer/Visitor Logout.</p> <p>Main scenario:</p> <ol style="list-style-type: none">1. Customer/visitor enters username or password to get login2. Login successful <p>Alternate scenario:</p> <ol style="list-style-type: none">1. Login failed due to the wrong username and password entered by the customer/visitor.2. Username or password fields are not filled <p>Frequency: Frequent</p>
Priority	High

2.2.5 Customer/Visitor Form Completion

Customer/Visitor Form Completion	
Description	Customer/visitor must fill the application form.
Specifications	<p>Title: Customers/visitor form completion.</p> <p>Actors: Customer/Visitor.</p> <p>Intent: Describe customer/visitor interacts with the system for filling up the application form.</p> <p>Pre-conditions: A customer/visitor must be login to fill the application form.</p> <p>Post-condition: Customer/Visitor can check the status of application.</p> <p>Main scenario:</p> <ol style="list-style-type: none">1. Customer/visitor fills the complete application form2. Application submitted successful <p>Alternate scenario:</p> <ol style="list-style-type: none">1. Submitted application failed due to the inadequate information entered in the application form.2. Any of the form fields are not filled <p>Frequency: Frequent</p>
Priority	High

Chapter 3

System Design

System Design

3.1 UML Diagrams

The unified model language (UML) is a general-purpose, developmental, modelling language in the field of computing, that is intended to provide a standard way to visualize for the architecture, design, and implementation of complex software systems both structurally and behaviourally. It is analogous to the blueprints used in other fields and consists of different types of diagrams. In the aggregate, UML diagrams describe the boundary, structure and the behaviour of the system and the objects within it. There are many other UML-based methods like abstraction method, dynamic system development method and other designed to provide most specific solutions or achieve different objectives.

UML is not a programming language but there are tools that can be used to generate code in various languages using UML diagrams. UML has a direct relation with object-oriented analysis and design. It is very important to distinguish between the UML model and the set of diagrams of a system. A diagram is a partial graphical representation of a systems model.

Functional requirement view

Emphasizes the functional requirements of the system from the user's point of view e.g., use case diagrams.

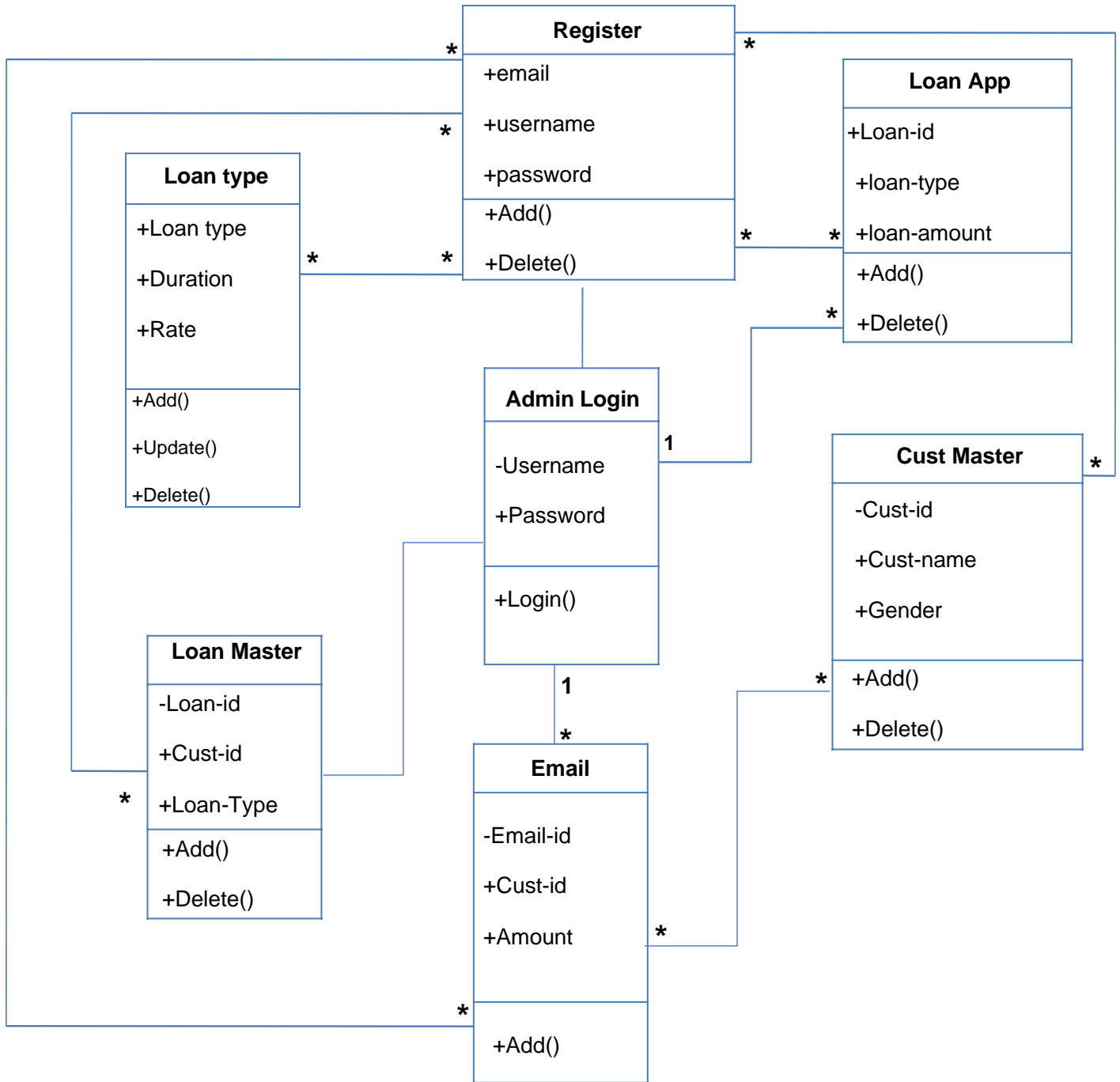
Static Structural view

Emphasizes the static structure of the system using object, attributes, operations, and relationships e.g., class diagrams.

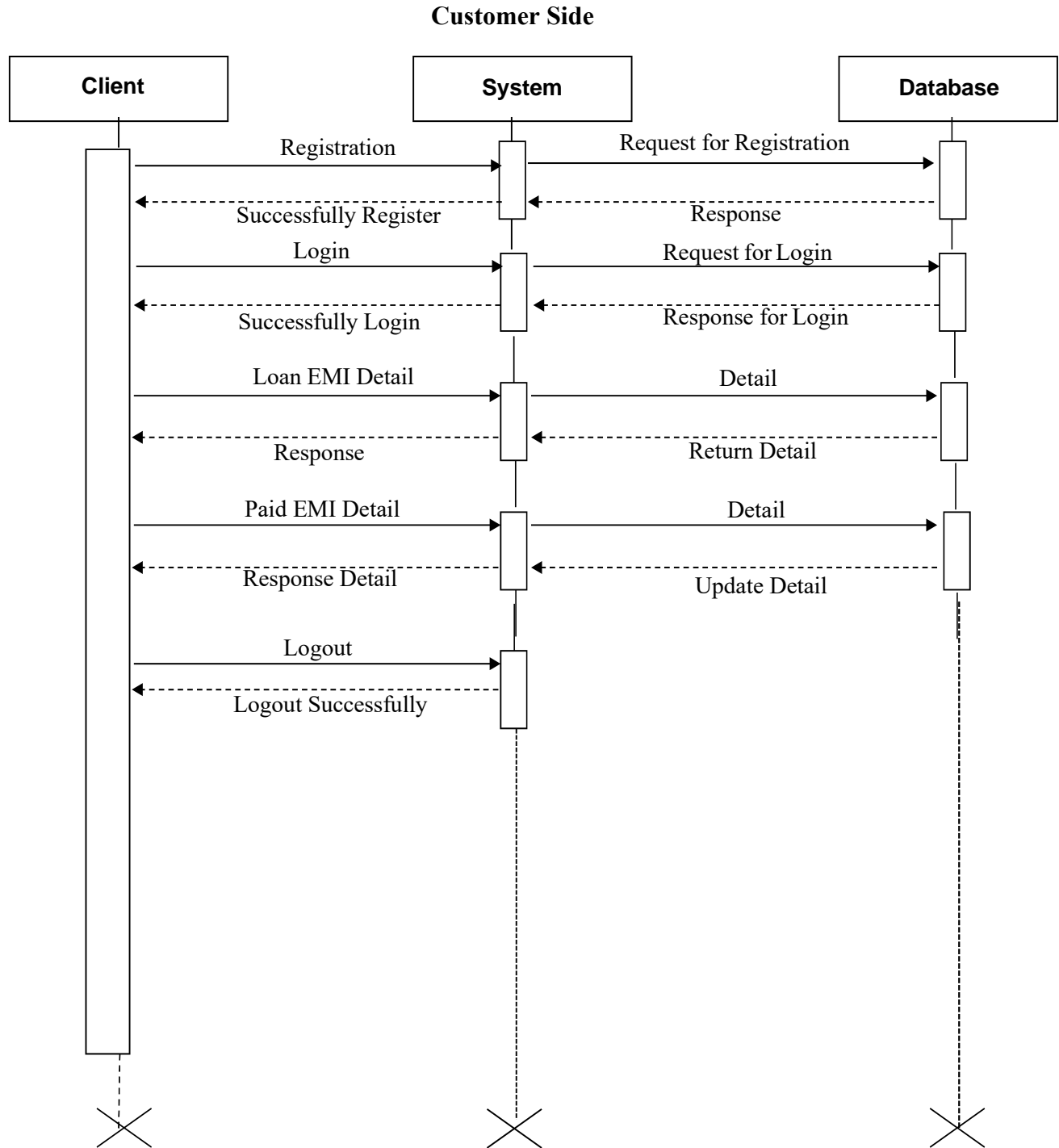
Dynamic behaviour view

Emphasizes the dynamic behaviour of the system by showing collaborations among objects and changes to the internal states of object e.g., sequence diagrams, activity diagrams and state diagrams. UML diagrams represent different views of the system model.

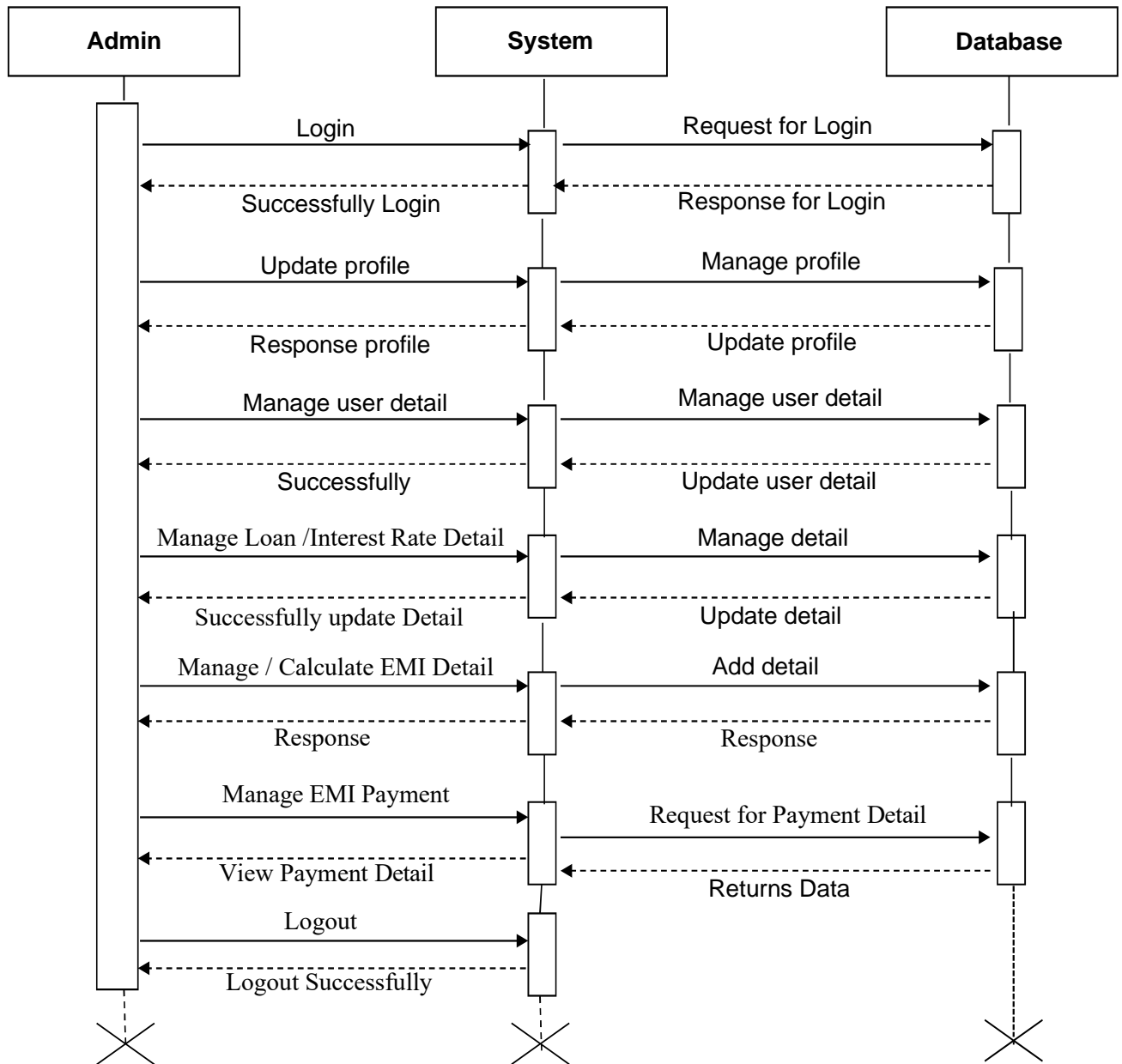
3.1.1 Class diagram



3.1.2 Sequence Diagram

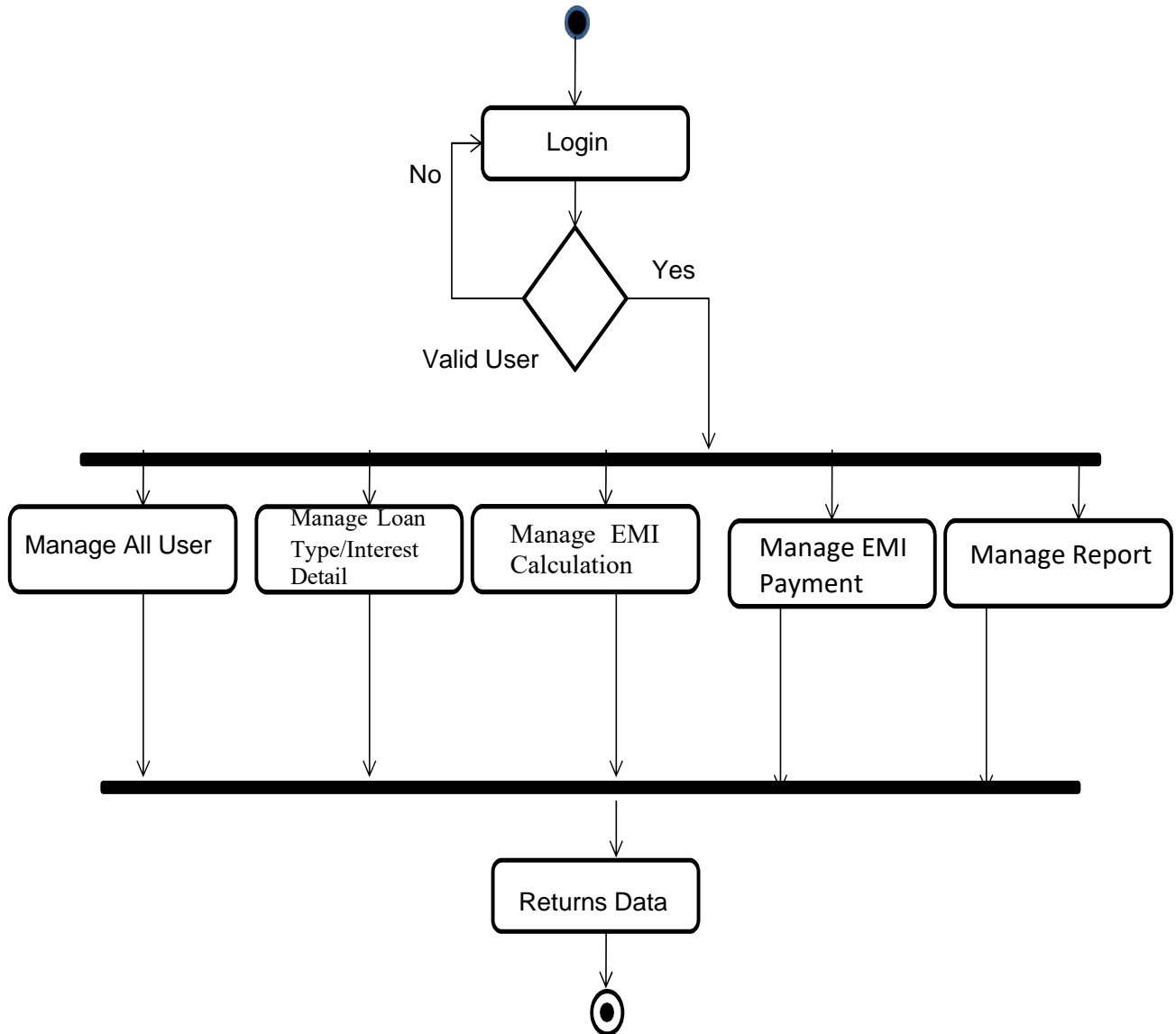


Admin Side

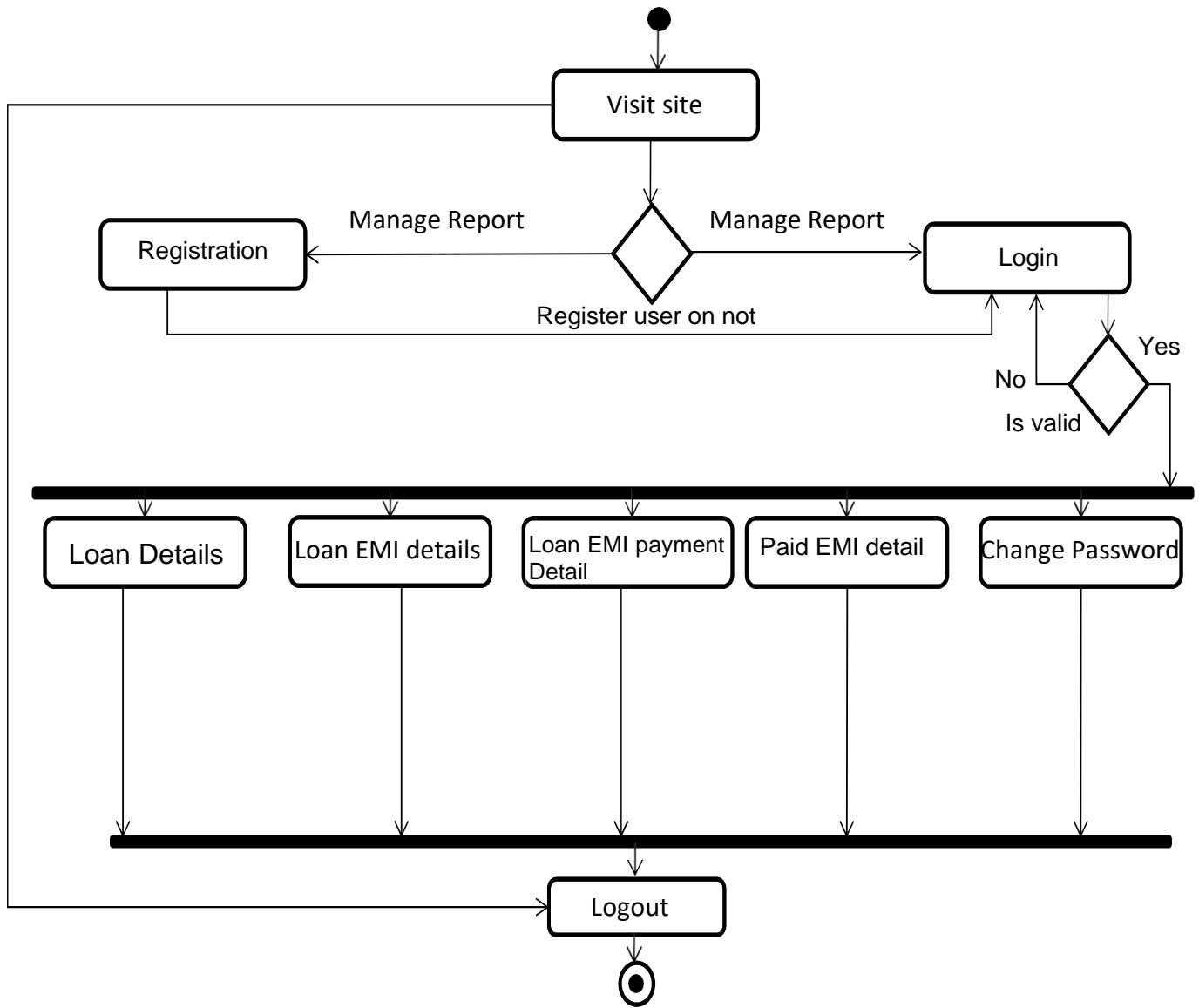


3.1.3 Activity Diagram

Admin Side



Customer Side



Chapter 4

Testing

Testing

4.1 Testing

In this section we will start

1. Customer/Visitor Signup
2. Customer/Visitor Login
3. Submit application
4. Upload scanned copies of documents
5. Check the status

Test case

4.1.1 Check Signup page	
Test Engineer	TALAHA ASLAM
Test case ID:	TC1
Related UC/FR/NFR	UC3
Date:	18-04-2021
Purpose:	Checking signup page
Pre-Request:	User opens signup page
Test Data	User must have an email Required information
Steps:	<ol style="list-style-type: none"> 1. Visit signup page 2. Enter email address 3. Enter password 4. Enter phone no 5. Enter username
Status:	Pass

4.1.2 Check Login page

Test Engineer	TALAHA ASLAM
Test case ID:	TC1
Related UC/FR/NFR	UC3
Date:	18-04-2021
Purpose:	Checking login page
Pre-Request:	User opens login page
Test Data	Username Password
Steps:	<ol style="list-style-type: none">1. Open login page2. Enter email3. Enter password4. Check login5. Redirect to home page
Status:	Pass

4.1.3 Check Submit Application

Test Engineer	TALAHA ASLAM
Test case ID:	TC1
Related UC/FR/NFR	UC3
Date:	18-04-2021
Purpose:	Check Submit Application
Pre-Request:	Loan application form
Test Data	Must be login using: Username password
Steps:	<ol style="list-style-type: none">1. Visit loan application form2. Enter name3. Enter father name4. Enter CNIC5. Enter Phone No6. Enter address7. Enter DOB8. Enter Email9. Enter District10. Enter marital status11. Enter employee business12. Enter employee type13. Enter loan amount
Status:	Pass

4.1.4 Check upload scanned copies of documents

Test Engineer	TALAHA ASLAM
Test case ID:	TC1
Related UC/FR/NFR	UC3
Date:	18-04-2021
Purpose:	Uploading scanned copies of documents
Pre-Request:	Submit loan application form
Test Data	Submit the application
Steps:	<ol style="list-style-type: none">1. Visit upload document page2. Upload CNIC copies3. Upload pictures4. Upload job document5. Upload educational certificate copies
Status:	Pass

4.1.5 Check application status

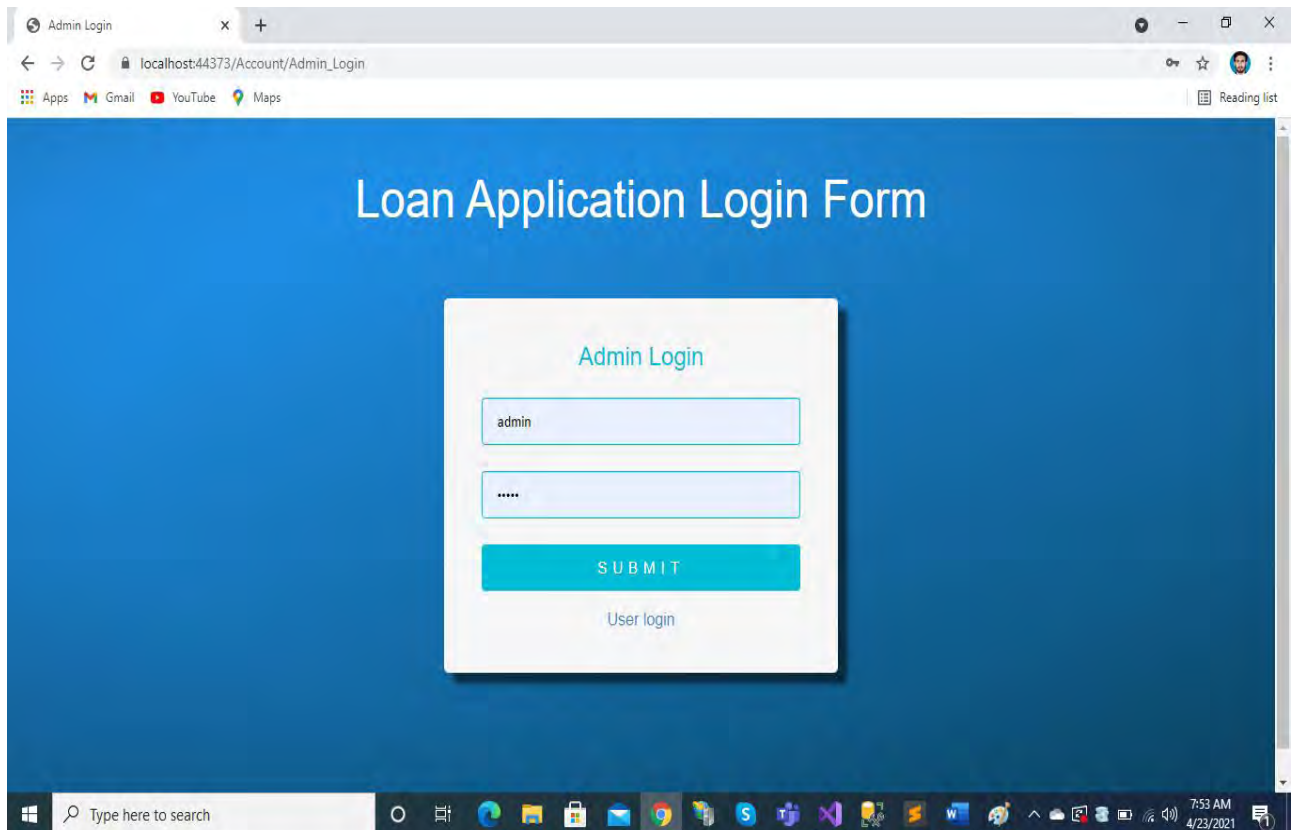
Test Engineer	TALAHA ASLAM
Test case ID:	TC1
Related UC/FR/NFR	UC3
Date:	18-04-2021
Purpose:	Checking application status
Pre-Request:	Open the status page
Test Data	Check status using: Application_ID
Steps:	<ol style="list-style-type: none">1. Visit the status page2. Enter the Application_ID3. Click submit
Status:	Pass

Chapter 5

User Interface

5.1 Admin Login Form:

Admin login form will take two things from admin one is username and the second is password. Once he/she provide the information correct according to the registered admin which credentials are already stored in database. Then he/she will get login and redirect to the admin panel where he/she can have the rights of administrator.



5.2 Admin panel:

Once the administrator gets login using the credentials, he/she will redirect to the admin panel. In admin panel admin can see his/her name, IP address, current data /time at the left navigation bar. And on the main screen admin have 4 links.

1. Pending applications
2. Approved applications
3. Rejected applications
4. New applications

In the above links admin can see the data of customers related to the links. In approved applications admin can see the customer who has approved their applications and in rejected applications admin can see the application which are rejected by the administrator and in pending applications admin can see the application which are pending not approved and rejected by the administrator and also have the right to approved or reject the applications after verifying the provided information by the customer.

The screenshot shows a web browser window displaying the Admin Dashboard for the Loan Application System. The dashboard is titled "Loan Application System" and includes a search bar and a user profile for "Admin".

Dashboard Summary:

- Administrator Name: Admin
- IP Address: 192.168.0.1
- Date: 24-April, 2021
- Time: 10:13PM

Application Statistics:

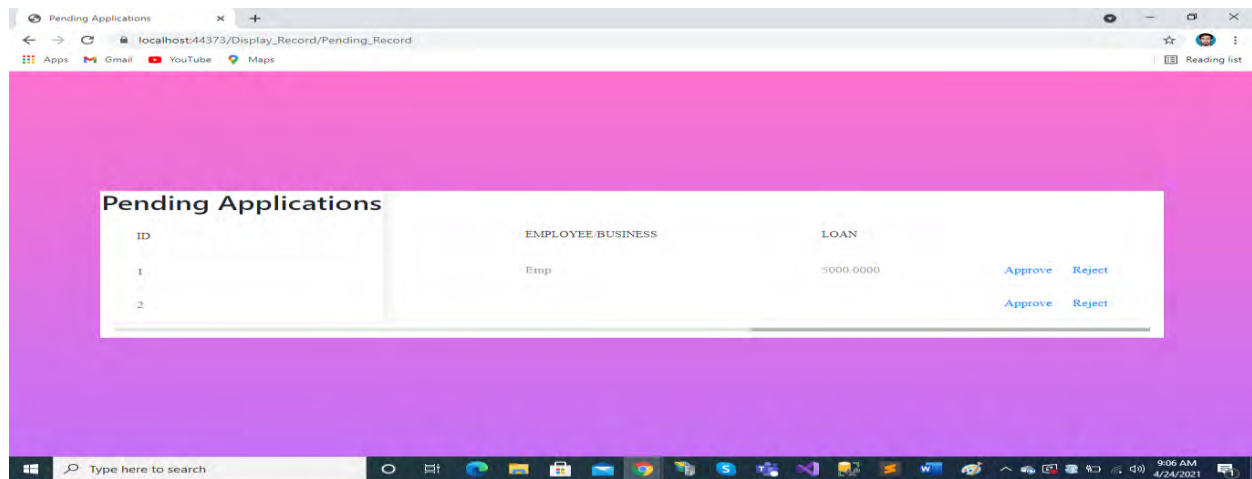
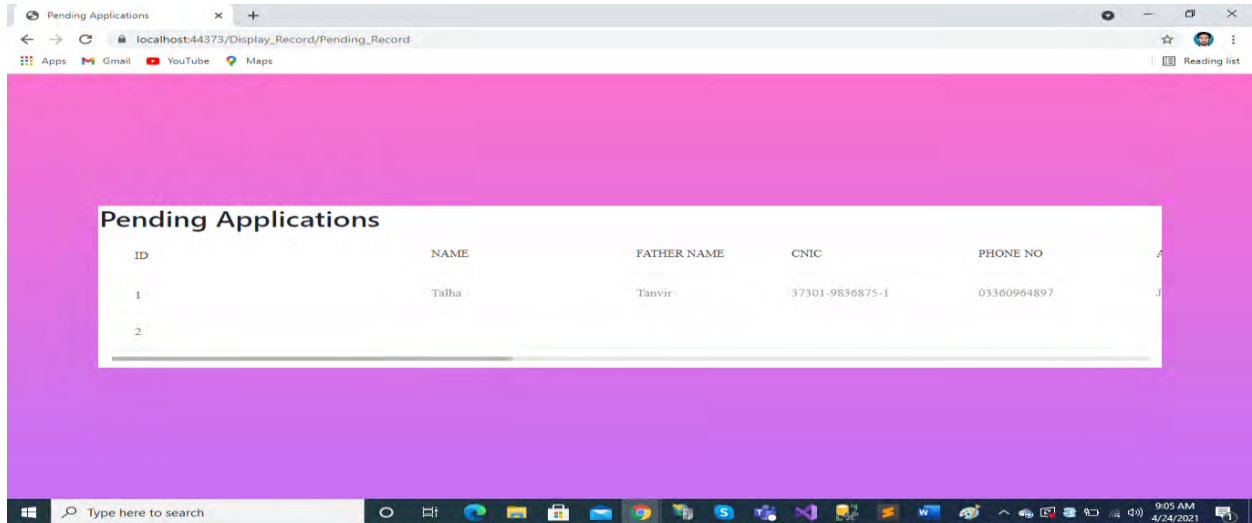
- Pend Applications: 45
- Apprv Applications: 10
- Reject Application: 1012
- New Applications: 450

Calendar: A calendar for July 2015 is displayed, showing dates from 28 to 31.

Current Weather: The weather for New York is shown as 30°F on Monday 10 July.

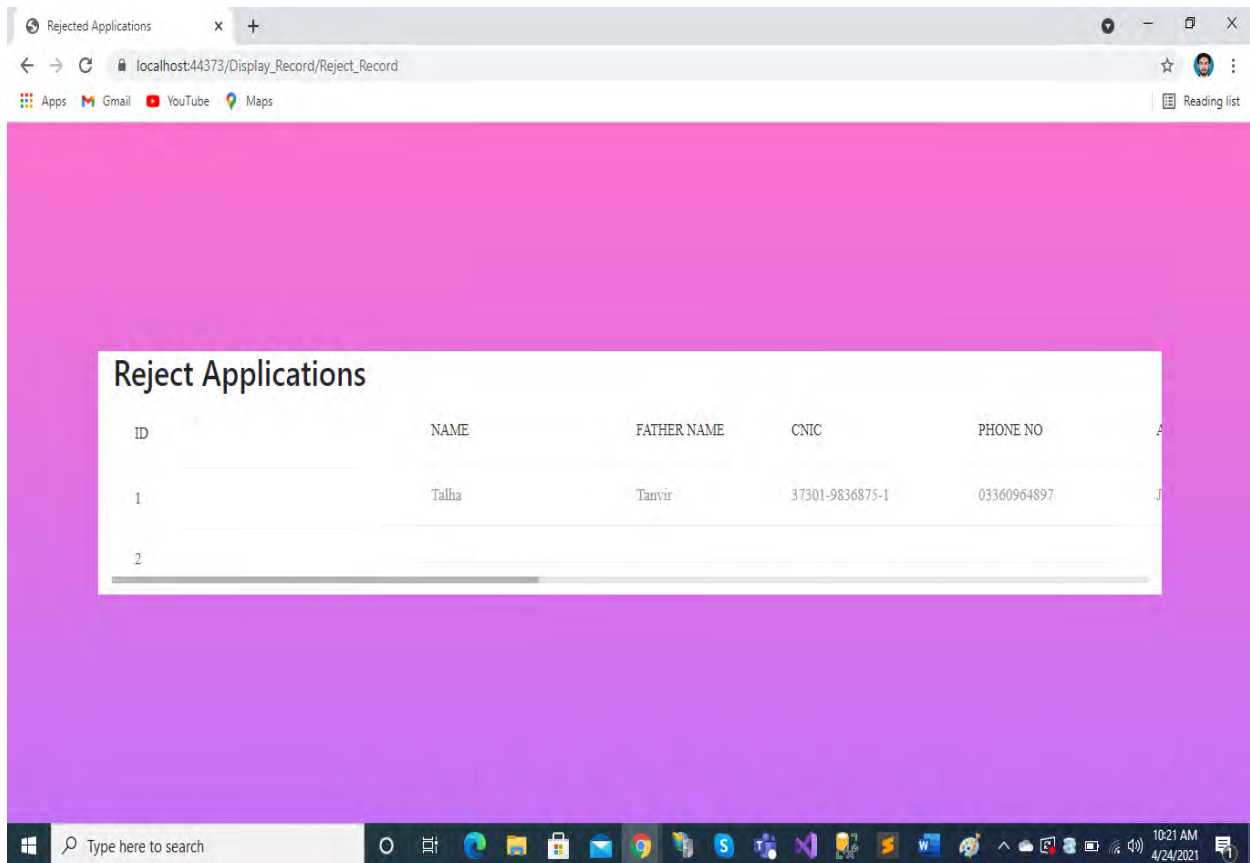
5.3 Pending applications:

Here admin can see the applications which are pending not approved or rejected by the administrator and also can see the two links whose are approve or reject through which admin can approve or reject the applications.



5.4 Rejected applications:

Here admin can see the applications which are rejected by the administrator due to some incorrect or irrelevant information provided by the customer.

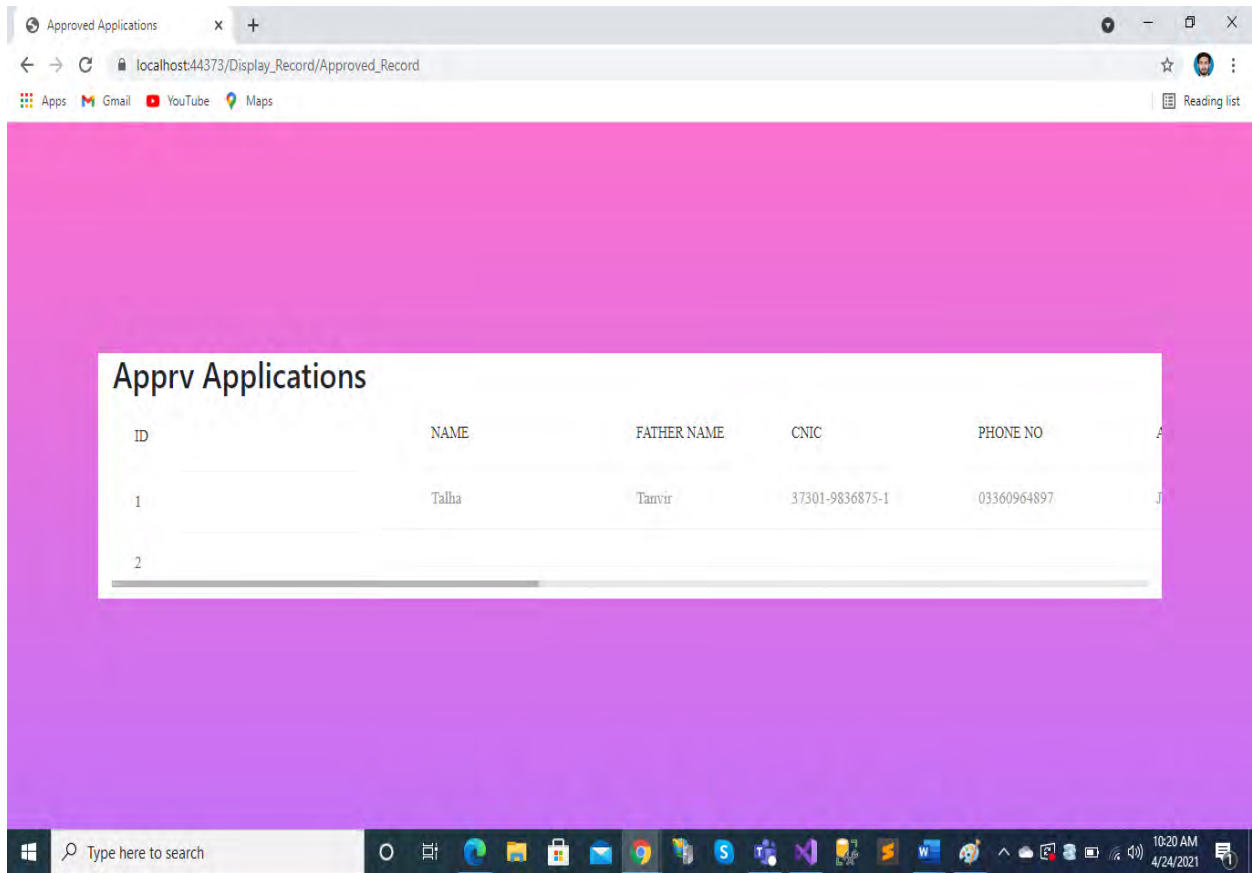


The screenshot shows a web browser window with the title 'Rejected Applications' and the URL 'localhost:44373/Display_Record/Reject_Record'. The browser's address bar shows the URL and navigation icons. Below the browser window, a Windows taskbar is visible with the search bar and various application icons. The main content area of the browser displays a table titled 'Reject Applications' with the following data:

ID	NAME	FATHER NAME	CNIC	PHONE NO
1	Talha	Tanvir	37301-9836875-1	03360964897
2				

5.5 Approved applications:

Here admin can see the applications which are approved by the after verifying the information provided by the customer



The screenshot shows a web browser window with the title "Approved Applications". The address bar displays "localhost:44373/Display_Record/Approved_Record". The browser's taskbar includes icons for Apps, Gmail, YouTube, and Maps. The main content area features a white box titled "Apprv Applications" containing a table with the following data:

ID	NAME	FATHER NAME	CNIC	PHONE NO
1	Talha	Tarvir	37301-9836875-1	03360964897
2				

The Windows taskbar at the bottom shows the search bar with "Type here to search", several application icons, and the system tray displaying "10:20 AM 4/24/2021".

5.6 Loan Application form:

Through loan application form customer can submit the loan application just filling the simple loan application form. In loan application form customer can see the multiple columns to be filled related to the demand. Once customer fills the basic loan application form, he can see the button of submit at the bottom of form when customer fill all the columns and click on the submit button his/her request of loan application submitted.

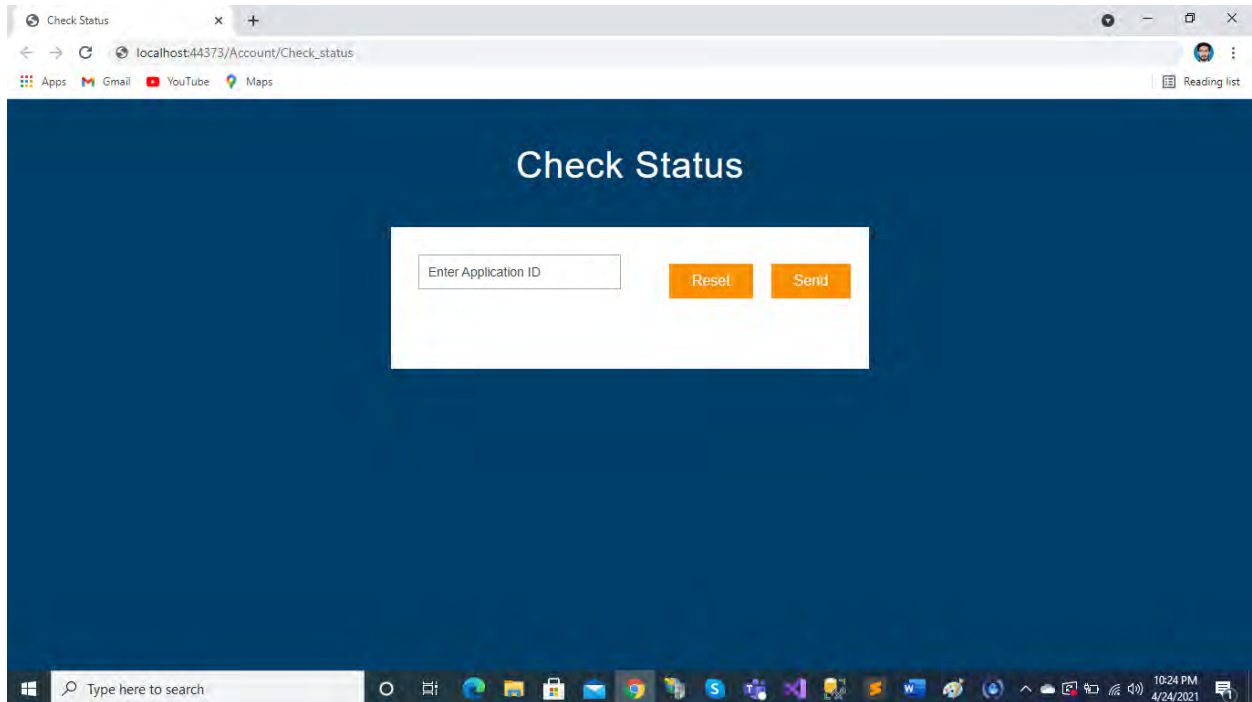
The screenshot displays a web browser window with the title "Loan Application Form". The address bar shows the URL "localhost:44373/Account/Loan_form". The form itself is centered on a dark blue background and consists of the following fields:

- Name
- Father Name
- CNIC
- Phone #
- Marital Status (dropdown menu)
- Email
- Address
- DOB
- District
- Job (dropdown menu)

The Windows taskbar is visible at the bottom of the screen, showing the search bar and various application icons. The system clock indicates the time is 10:22 PM on 4/24/2021.

5.7 Check Status:

Customer can check the status of his application by just giving the application ID. Which is provided by the system. When he/she gives the application ID and click on the send button he/she can see the status of his application whether it is approved, rejected and pending by the administrator.



Chapter 6

Conclusion and Future work

Conclusion and Future Work

6.1 Future work:

- **Online EMI payment to company:**

In future, I will add the feature of EMI payment to company using the online method. E.g., Payment through online banking, payment through credit/ debit card, payment through easypaisa and jazzcash.

- **Live chat with the client:**

In future, I will add the live chat feature with the client which will help us and client both to manage all the things without getting client into the bank. It will be beneficial feature for the client and for us both.

- **Online transaction:**

In future, I will add the online transaction feature which will help to the client when he has passed his loan the amount directly deposited to the clients account that will be more beneficial for the client because he does not need come to the bank for collecting the loan amount.

- **Email facility:**

We will provide the email facility to our clients in future. Through which client can get an email while his/her loan approved or when the transactions are going to be successful and also client will get an email when the admin request for the scanned copies of the documents.

- **SMS facility:**

We will provide the SMS facility to our clients in future. Through which client can get a SMS through his/her phone number while his/her loan approved or when the transactions are going to be successful and also client will get a SMS when the admin request for the scanned copies of the documents.

6.2 Conclusion:

This online loan application and verification system is designed for the beneficial of the customers. Because getting loan in Pakistan is a tiring and complicated task. So, we designed this system through which customer sign up using the signup form and then login through login form and then customer can submit the loan application through just filled the simple loan application form. After submitting the application, the application will be in processing until the admin approved or reject the application. When the admin approved the application then the customer has shown the page through which customer can upload the scanned copies of his/her documents. When the documents are uploaded and submitted then it will receive at the server side and then the admin will cross verify the documents and then admin will pass the loan for customer for which customer has applied.

6.3 Bibliography:

- www.javatpoint.com
- www.sun.java.com
- www.javaworld.com
- www.stackoverflow.com