

Micro Loan Management System

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This Project report has been submitted in fulfillment of the requirements for the Degree of Bachelor of Science in Software Engineering.`

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December - 2018

Declaration

We hereby declare that we have taken this project under the supervision of Mr. Md. Habibur Rahman, and Department of Software Engineering, Daffodil International University. We also declare that neither this project nor any part of this report has been submitted elsewhere for award of any degree.

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ACKNOWLEDGEMENT

First of all I would like to express my heartiest thanks gratefulness to Almighty **ALLAH** for **HIS** Kindness, heavenly blessing made it possible to complete my project successfully.

I feel grateful to elicit my termless honor and respect to my supervisor, **Habibur Rahman**, **Lecturer**, **Department of Software Engineering**, **Daffodil International University** for his deep knowledge and self interest in the field of software development that affected me to carry out of this project His friendly support, endless patience, which have driven me throughout our work.

I would like to express my heartiest gratitude to **Dr.Touhid Bhuiyan**, **Professor and Head**, **Department of Software Engineering**, **Daffodil International University** for his kind help to finish my project and also to other faculty members, the staff of the Software Engineering Department, Daffodil International University.

Finally, I must recognize with due respect the steady support and patients of my Family and friends for completing this project.

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Chapter 1: Introduction

1.1 Project Overview

"Micro Loan Management System" builds for easy, effective, immediate and provides quick service for Customers and bank. We propose to build a web application that can efficiently handle and manage various activities of a Loan management. This is very instructive and fully hassle free online web application which is fast and secured and the system have some fixed service wise stakeholder.

A user fulfills his/her information (Salary details, Bank statement, income statements, NID card, Mobile number etc.) and only authenticate user can apply for loan online. It will be authenticate for Administration and Manager. When the customers complete his/her activities then the administration will take a decision weather he/she is eligible for loan. Administration can view the customer all information and feedback report. It will be happening under the supervision of the organization decision.

1.2 Project Purpose

1.2.1 Background

Online service provider application is a process of providing service via online. User getting there service without any hassle. User also check there activity. This system also Bank and User friendly which are bank authority provide their service, they can check service request, accept customers service, user location.

Currently most service provider application provide their service own way user need to choose loan service and request for a Bank loan then administration contact their own time to providing service.

1.2.2 Benefits & Beneficiaries

Benefits of this project are very broad in terms of other manually taking bank loan.

Few of them are:

- ❖ It helps apply Bank loan online for customer
- ❖ This system will save a lot of time for customer and bank authority
- Customers don't have to present physically in the bank for bank loans
- ❖ Automates the working of online system
- ❖ No time is spent on evaluation
- ❖ Can be easily accessed 24/7 over the open test period
- Easy Accessibility
- User friendly
- Secure because of authentication
- Convenience, security and flexibility
- * Exams can be assembled and previewed, edited and printed forthwith

1.3 Stakeholders

- User
- Administrator
- Manager

1.4 Project Schedule

1.4.1 Gantt chart

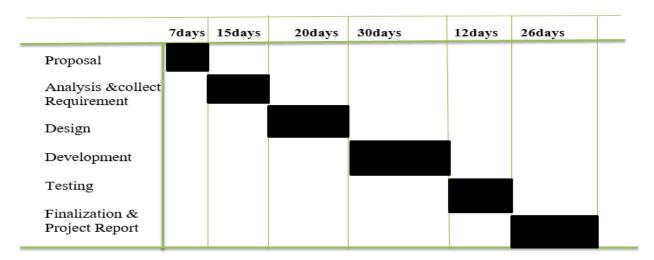


Fig: 1.4.1 Gantt chart

Chapter 2: Software Requirement Specification

Table 2.1 Functional Requirements

SRS Id	SRS Name	SRS Description	SRS Type	Priority
SRS -01	User Registration	All user and manager must be registered in this application and authenticate by administrator.	FR	Н
SRS - 02	Apply Loan	A authenticate user can apply for loan.	FR	Н
SRS - 03	Balance enquiry	Manager can check user balance.	FR	Н
SRS - 04	View Loan Status	User can view their Loan Status.	FR	Н
SRS - 05	See rules and regulation	Application can show the bank rules and regulation.	NR	M
SRS -06	Provide Review	Administrator or manager can review user application or status.	NR	M
SRS - 07	Loan Approve	Administrator or manager can approve application.	FR	M
SRS -08	Report	Manger can provide report.	FR	M
SRS - 09	View Loan Details	Administrator or manager can view loan details.	FR	Н

SRS Type-

- 1. FR Functional requirement
- 2. NR Non-functional requirement
- 3. SRS Software Requirements Specification

Priority-

- 1. H High
- 2. M Medium
- 3. L Low

2.2 Non-Functional requirements

2.2.1 Performance Requirements

2.2.1.1 Capacity Requirements:

This system almost handles 1000 requests at a time .It test in local server. It also provides on demand delivery on call. In local server aspect.

2.2.2 Dependability Requirements

2.2.2.1 Availability Requirements

User can open site anytime to access other data. This system must operate on multiple operating systems and support Windows Operating System.

2.2.2.2 Safety-Critical Requirements

Token base responses are more than secure then the normal redirect response. User credential, user permission and also policy for different user are divide by providing access token which provide from our system.

2.2.3 Security Requirements

2.2.3.1 Access Requirements

We use advance token base two factor authentication system with proper user authorization. In this authorization system user must need to provide legal credential. Then our system provides an access token for the user. Without use the token no one can access the selected route. The token provide user details with user privilege log.

2.2.3.2 Integrity Requirements

The loan management system helps for NGO or user the loan management process. The system every post request must have ensuring their activity that each request to a server. As well as the get, put and delete request provide the system. Every user using the system cans easy access for their need.

2.2.3.3 Privacy Requirements

Privacy is the most important think in the system. So, the system store token on data base and the all is secure on database.

2.3 Assumption and Dependencies

2.3.1 Data Entry

Though the data entry operation is out of the scope of Loan Management System, but for giving it a standard look our team has added some meaningful data to check the compatibility of the system. Supply of correct information is possible only when valid data is entered in the database. Since the data entry is a separate task and will be performed by the authority, the authority will be responsible for the validity of the information to be provided to the user through online system.

2.3.2 Server/Hardware Performance

Loan Management System team is not responsible for providing servers or hardware. However, the performance of software sometimes depends on the hardware or server machine in which it is running.

2.3.3 Browser Dependency

The Loan Management System will be compatible with any JavaScript enabled open standard browsers, and it will also support Internet Explorer, Mozilla Firefox (any last version) and other compatible browsers.

Chapter 3: System Analysis

3.1 Use Case Diagram

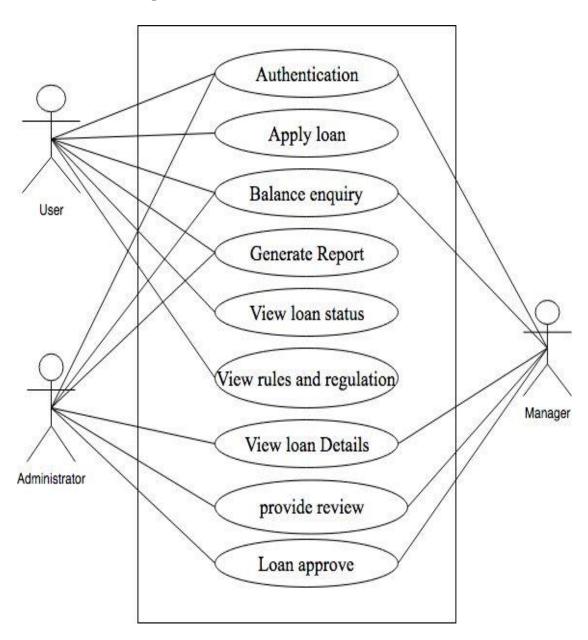


Fig: 3.1 Use case Diagram

3.2 Use case description

Table 3.2.1 Authentication

Use case name	Authentication	
Pre-condition	User need to insert data for proper authentication	
Trigger	Login button or new user for registration	
Actors	Authentication for Administration and Manager	
Description	 All Type Of user must authenticate to use this system Fill all the criteria related to the authentication Submit for login or registration 	
Alternative flows	On registration should check user role	
Post condition	The Authenticated user data are show in where it necessary	

Table 3.2.2 Apply Loan

Use case name	Apply Loan
Pre-condition	User need to insert data for loan
Trigger	Add apply button work for it
Actors	Only authenticate user can apply for loan
Description	Users should submit all documents for loan. Authenticated user can apply for loan
Alternative flows	User can report to authority or can apply other category
Post condition	User get confirmation message/mail

Table 3.2.3 Balance Enquiry

Use case name	Balance Enquiry
Pre-condition	User will be authorized
Trigger	Balance menu work for it
Actors	Authorized user can enquiry about balance
Description	An authorized user can check balance and Installment for loan
Alternative flows	User can report to authority
Post condition	User can generate balance report as pdf format

Table 3.2.4 Report

Use case name	Report
Pre-condition	User will get loan for get report
Trigger	Get report button work for it
Actors	All user can get their individual report
Description	Report will be generating as pdf format and user can download the pdf format
Alternative flows	User can get screenshot for this page
Post condition	The data are show in where it necessary

Table 3.2.5 View loan status

Use case name	View loan Status
Pre-condition	User need to press the button view loan status
Trigger	View loan status button work for it
Actors	Only authenticate user can perform
Description	User can view their loan status
Alternative flows	User can get screenshot for this page
Post condition	He can able to access others function

Table 3.2. 6 See Rules and regulation

Use case name	See Rules and Regulation
Pre-condition	User need to press the button Rules and Regulation
Trigger	View loan status button work for it
Actors	User can perform in this case
Description	When users apply for loan they will see rules and regulation
Alternative flows	They will can another activity
Post condition	They can to access others function

Table 3.2.7 View Loan Details

Use case name	View Loan Details
Pre-condition	All actors can view loan details
Trigger	Loan title "click details "button work for it. click details
Actors	User, manager and administrator
Description	See all users loan details when loan approved
Alternative flows	If it is not working, then system error report
Post condition	All actors can next step for loan

Table 3.2.8 Provide Review

Use case name	Provide Review
Pre-condition	Manager can feedback the selected loan
Trigger	Add feedback button work for it
Actors	Manager can provide review
Description	When manager can review then manager comment for loan status
Alternative flows	Manager can edit comment
Post condition	Another option can access

Table 3.2.9 Loan Approve

Use case name	Loan Approve
Pre-condition	All valid documents should be submitted
Trigger	Approved check box work for it
Actors	Administrator and manager can approved loan
Description	When user apply for loan and his all submitted documents are valid then Administrator and Manager can approved loan
Alternative flows	If it is not working, then system error report
Post condition	User can apply for other categories loan if he want

3.3 Activity Diagram

3.3.1 User Activity Diagram

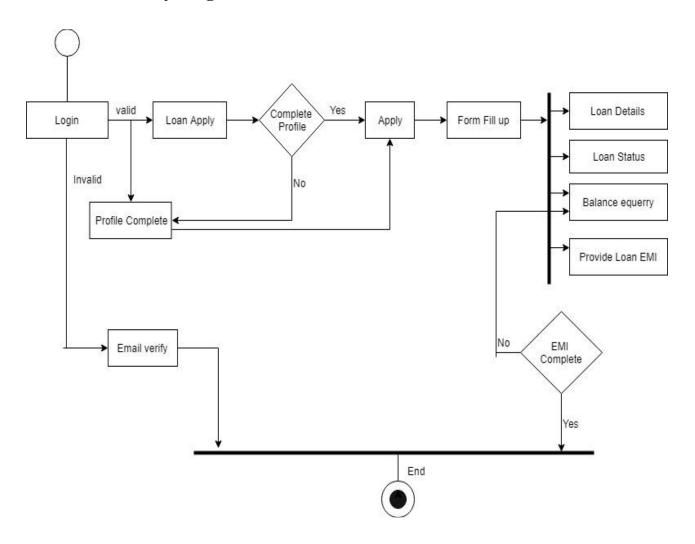


Fig: 3.3.1 User Activity Diagram

3.3.2 Manager Activity Diagram

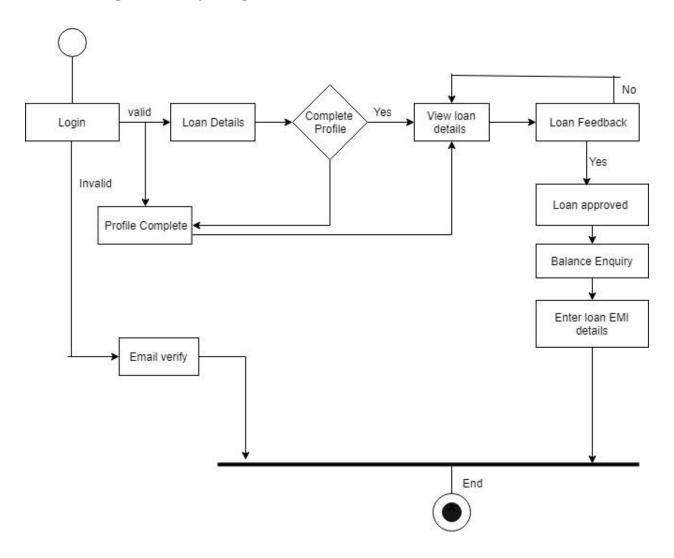


Fig: 3.3.2 Manager Activity Diagram

3.4 System Sequence Diagram

3.4.1 User Sequence Diagram

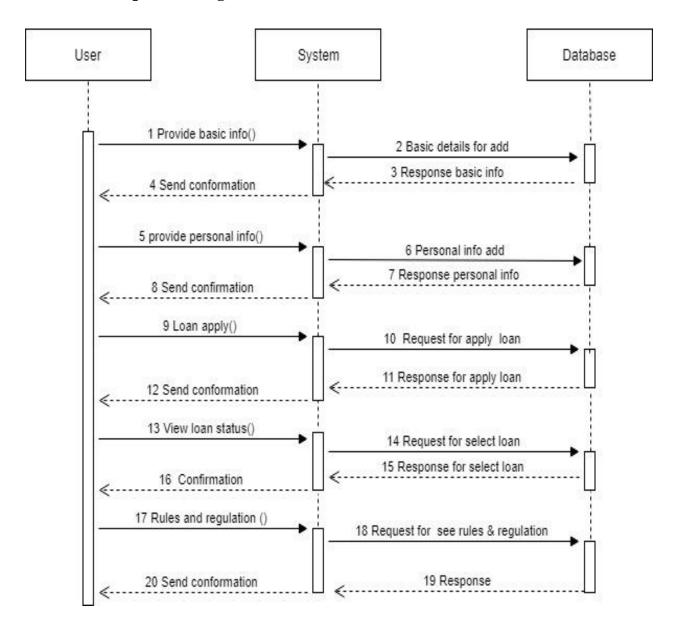


Fig: 3.4.1 User Sequence Diagram

3.4.2 Manager Aspect

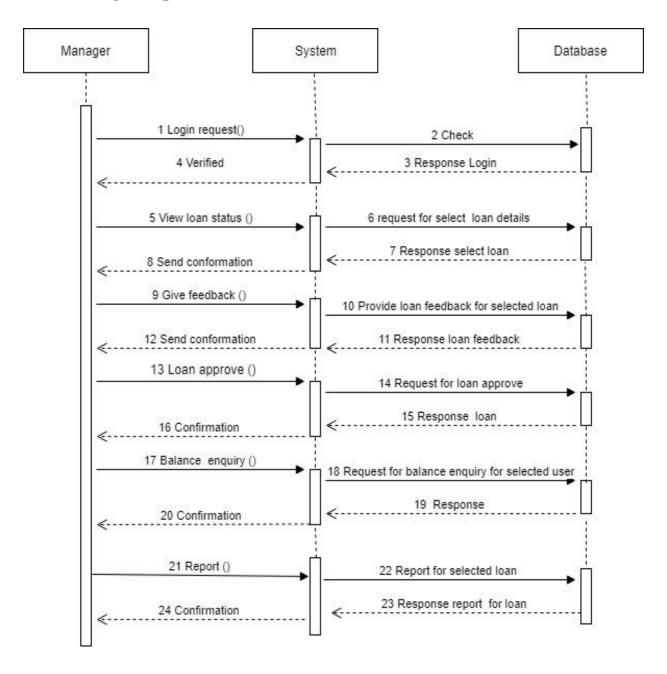


Fig: 3.4.1 Manager Sequence Diagram

Chapter 4: System Design Specification

4.1 ER Diagram

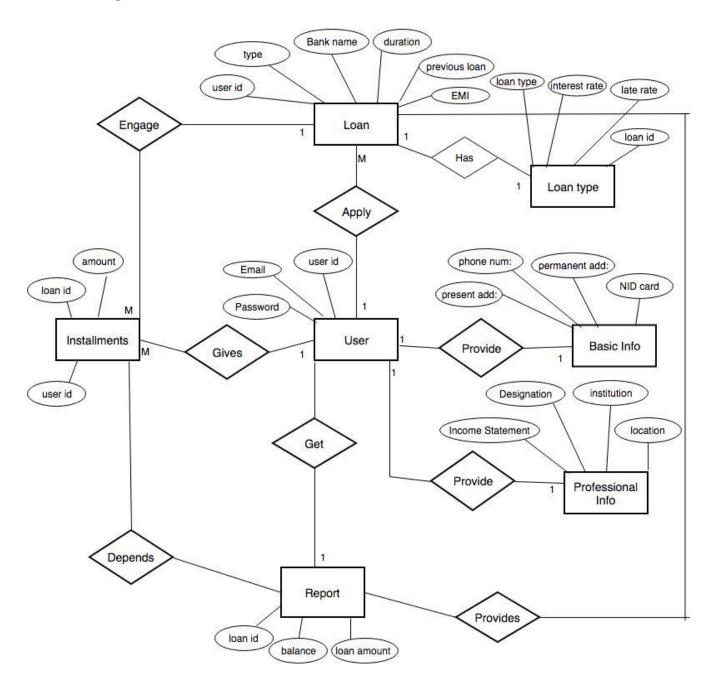


Fig: 4.1 ER Diagram

4.2 Development Tools & Technology

4.2.1 Software Language or Framework:

The design of Loan Management System is heavily structured for maintainability, flexibility. For this reason it may seem complex when first approached. Data storage and representation, user interface presentation, and control are separated into different layers. The major categories follow:

Page Layouts: which are responsible for assembling HTML pages to display to user **Page classes:** which receive requests from user's web browsers, delegate any required processing to various other classes, and call up the appropriate template to generate a response.

Action classes: which are used by the page classes to perform non-trivial processing of user request

Model classes: which implement PHP objects representing the systems various entities **Support classes:** which provide core functionalities, miscellaneous common classes and functions etc. Again for the PHP codes there are some formations and standards we maintain. Those are given below:

- ❖ Wherever possible, global variables and functions outside of classes should be avoided.
- ❖ Symbolic constant, mapped to integers using the PHP define function, are preferred to numeric or string constants.
- ❖ Filenames should match class names.
- Class names use Camel Case, and instances use lower Camel Case.
- * Whenever possible and logical, the variable name should match the class name.
- Class names and source code filenames should be descriptive and unique.

4.2.2 Development Tools and Technology

Micro Loan Management System is written in object-oriented PHP LARAVEL and data is stored in MySQL database. We are trying to build the system with updated technology for more stable and faster way.

IDE: Sublime Text 3Database: MySQL

Server Side: PHP (Laravel 5.6)Web-Server: XAMPP Server

Chapter 5: System Testing

5.1Testing Features

Features to be tested: For this project we are going to test below features:

- Authentication
- Login
- Apply Loan
- Loan Approve
- **❖** Balance Enquiry

5.2 Testing Strategies

5.2.1 Test Approach

Test plan is one of the standard documents that should be produced in most software project. If the project does not have any test plan this means that the software proves not qualify. This means it is not acceptable to the user since it will not satisfy their needs.

5.2.2 Test category

- **❖** Module Testing.
- **System Testing.**
- Integration Testing.

5.2.3 Testing Environment (hardware/software requirement)

- Key area in this system
- **❖** System
- **❖** Test data
- Server
- **❖** Operating system
- Browser
- **❖** Network
- Documentation requisite like user manual

5.3 Test Cases

Table 5.3.1: Authentication

Test case ID: 01	Authentication
Module: Authentication	Test Designed: Repon
Test Priority: (Low/Medium/High): Medium	Test Date: 10.10.2018
Test Title: Add new user.	Test Executed By: Repon
Description: Test the system Authenticate	Test Executed Date: 10.10.2018

Table 5.3.2: Login

Test case ID: 02	Module Name: Login
Module: User Login	Test Designed: Repon
Priority: (High/Low/Medium): High	Test Date: 11.11.2018
Title: Login valid email, password.	Test Executed By: Repon
Description: Test the system User sign in page.	Test Executed Date: 11.11.2018

Table 5.3.3: Apply loan

Test case ID: 3	Module Name: Apply loan
Module: Apply for loan	Test Designed: Repon
Priority: (High/Low/Medium): High	Test Date: 15.11.2018
Title: Test Apply loan	Test Executed By: Repon
Description: user id, type ,duration, NID card and all valid data	Test Executed Date: 15.11.2018
Status (successful/fail):	successful

Table 5.3.4: Loan Approve

Test case ID: 04	Module Name: Loan Approve
Module: Apply for loan	Test Designed: Repon
Priority: (High/Low/Medium): Medium	Test Date: 15.11.2018
Title: Test loan approve	Test Executed By: Repon
Description: user id, NID card and all valid data check	Test Executed Date: 15.11.2018
Status (successful/fail):	successful

Table 5.3.5: System check

Test Case: 5	System check
Test step:	 Enable interface logging Run a correct or incorrect authentication Chose the user account Enter password
Test data:	Username:admin@gmail.com Password:12345
Expected result:	User should able to login
Actual result:	User successfully logged in
Status (successful/fail):	successful

Chapter 6: User Manual

6.1 User

User need to insert data for proper authentication and user need to insert data for loan. All Type Of user must authenticate to use this system.

6.1.1 Apply Loan Page

This is applying loan page. User will apply for loan with their valid user name and password. User can select loan type, duration and select EMI number.

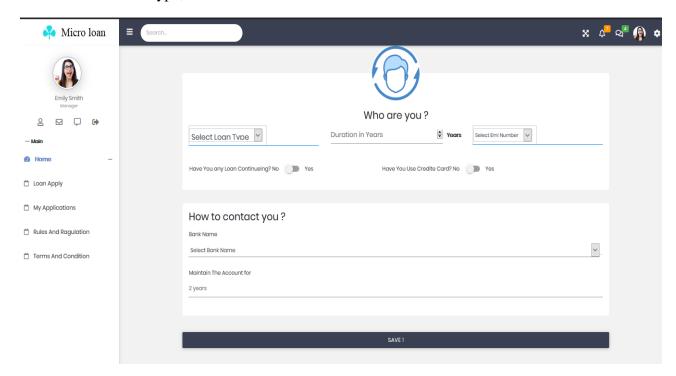


Fig 6.1.1: Apply Loan Page

6.1.2 Loan Status

User and manager can view loan status such as name, loan type, duration, EMI type and loan status.

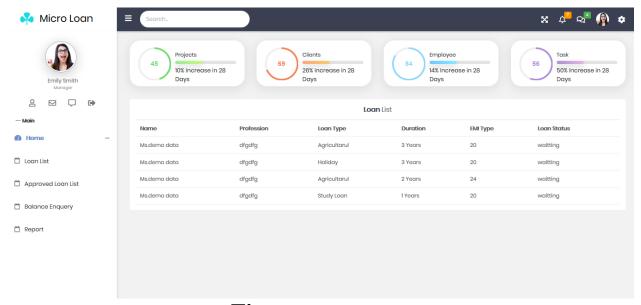


Fig 6.1.2: Loan Status

6.1.3 User Loan List

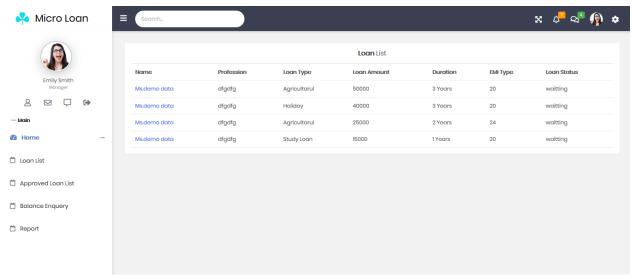


Fig 6.1.3: User Loan List

6.1.4 Loan Details

Administrator and Manager can see user loan details

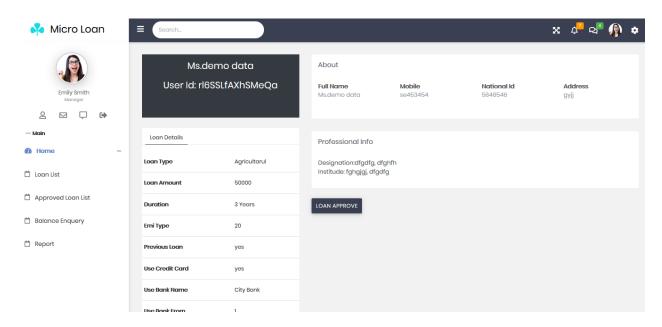


Fig 6.1.4: Loan Details

6.1.5 Add EMI

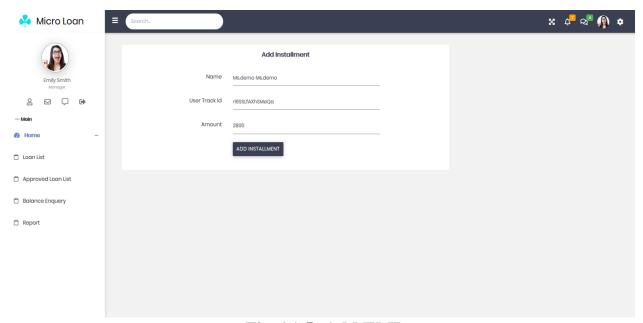


Fig 6.1.5: Add EMI

6.2 Manager

When user apply for loan and his all submitted documents are valid then Administrator and Manager Can approved loan.

6.2.1 Add Manager

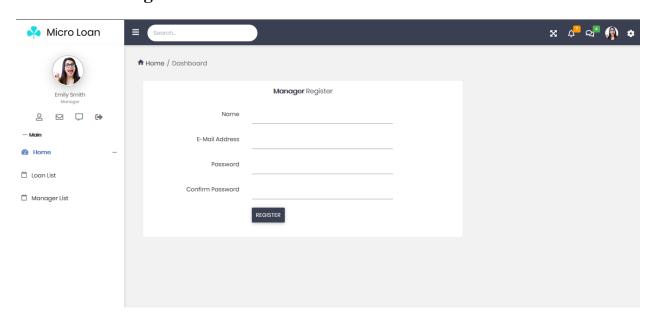


Fig 6.2.1: Add Manager

6.2.2 Manager List

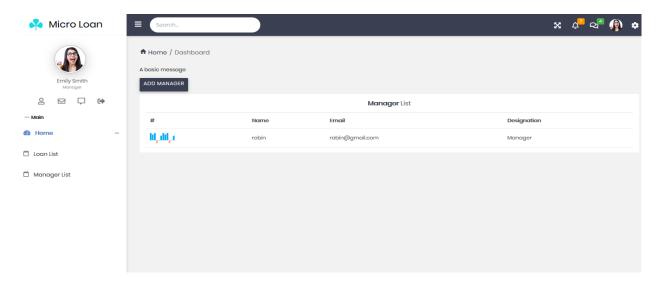


Fig 6.2.2: Manager List

6.2.3 Loan Approved

When users submit his/her loan application then administrator can view all document and approve the loan.

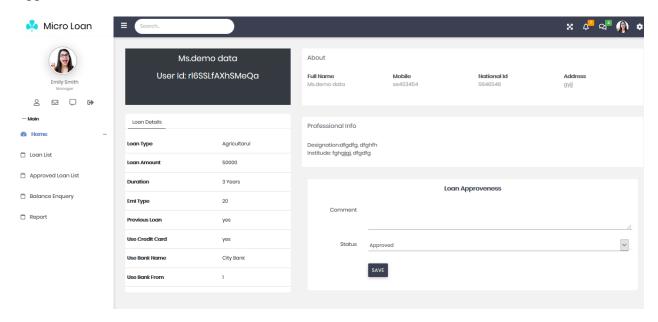


Fig 6.2.3: Loan Approved

Chapter 7: Project Summary

7.1 Critical Evolution

"Micro Loan Management System" is a web based project. The technologies are use here that most recently release. Resources are limited and also errors are not understandable for developers. On the other hand both developers are placed separated. These types of project are complex to handle.

7.2 Future Scope

"Micro Loan Management System" is releases are first version on it. On time going it should be more fetcher able. In Future more fetcher also adding like below

- ❖ Apply process also be modify for user.
- ❖ On future we try to fix it for a certain domain.
- **❖** Code IDE Integration
- Completely automated loan management system.
- ❖ API based system.
- ❖ More Secure system.

Chapter 8: Conclusion

The web-based system (Micro Loan management system), it is subjected to modification on its features as time to time This system will make progress on loan management, help to the management and users. A user uses the system, save his important time, hassle-free life, and other advantages. Organization also would have can benefit with this system. As a result of the authentication feature of the system, the system can guarantee that the right users would have access to the system provide exact benefit and take their assessment.

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