# Software Requirements Specification (SRS)

## for

# Credit Wholesaling Software

**Version 3.0**

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**03.07.2022**

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# Revision History

| Name | Date | Reason For Changes | Version |
|---|---|---|---|
| Project Management Team | 30.06.2022 |  | 1.0 |
| Project Management Team | 03.07.2022 | Feedback from client | 2.0 |

# 1. Introduction

## 1.1 Purpose

The purpose of this document is to present a detailed description of the Credit Wholesaling Operation and Management System software of ▮▮▮▮. It will explain the purpose and features of the system, how the modules will work, how the system will look like and the interfaces of the system. This software will handle different types of accounts, record and data etc. This system should support data migration also. With the help of this system, management can perform operation, monitor and Impact Assessment. This document is intended for both the stakeholders and the developers of the system and will be proposed to the ▮▮▮▮ for its approval.

## 1.2 Product Scope

This software system will be an Operation/Management, Monitor & Impact Assessment platform of Credit Wholesaling Operation and Management System for the concern authority of ▮▮▮▮ This system will be designed for one type of government institution and will be used valid dataset for building the whole system. By entering the valid data of associations, ▮▮▮▮ by the banks, the authority of ▮▮▮▮ can analysis all the reports and necessary information.

We all know, … are **the backbone of the national economy in Bangladesh**. This sector is playing an important role to develop the economy of our country. So, this system will make a good impact for this sector. If we want to describe more details about this system, this system is designed to ▮▮▮▮▮▮ users to operate entrepreneur information, details of loans, Monitor different entrepreneur basic information like name, address, upazilla, district etc. Also, they can see the impact of sales, capitals in a graphical representation and lastly, they can generate a report. Report can be download in different format like PDF, Microsoft Excel. The users have specific roles for operating the system and role will be set by admin. The system will be automated as much as possible and have good UI for a standard view. There will be other more facilities for making users work easy.

## 1.3  References

*IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.*

*<List any other documents or Web addresses to which this SRS refers. These may include user interface style guides, contracts, standards, system requirements specifications, use case documents, or a vision and scope document. Provide enough information so that the reader could access a copy of each reference, including title, author, version number, date, and source or location.>*

# 2.  Overall Description

## 2.1  Product Perspective

████ needs a proper wholesaling software for operate, monitor and manage the entrepreneur details easily and view the impact of sales, capital in a graphical way. The three main important modules are respectively Operation/Management, Monitor and Impact Assessment. The whole credit wholesaling software will be based on this major three modules.

In this system, main user will be ████ specific respective members. Also, Banks and Associations are one of the main users of this system. Banks must enter all the loan disbursement details to this system timely ██████ users will view all the disbursement details in a periodical order. Banks can update or add clusters, associations and details from anywhere in anytime. Here, Association can only view the details of the different ████. User can keep the record of payment collection like date, installment and can add comments.

## 2.2  Key Features of the System

The key features of this software are listed below-
- Allow Management to monitor and analyze all stages and functionalities
- Allow users limited and monitored access to data across the organization according to needs
- The application will be user friendly & have standard look and feel
- Generating impact of sales, capital and benefit

- The application will run in LAN & WAN environment

- The application will run on any devices

- Data level security must be ensured (by function/modules access, multiple security levels)

- The application will have Export Facilities (to PDF, to EXCEL etc.)

- A comprehensive backup (full & incremental) procedure will be ensured

- The application will be accessible by multiple users (SMEF Users/ Bank/ Client Group (Association/Chamber/Cluster))

- Database will have unlimited data storage capability;

- The system should allow dynamic query;

- Source Code with documentation will be delivered with software;

- Email/SMS Management System for giving alert to the users.

## 2.3  User Classes and Characteristics

In this system, there will be mainly three types of Users. They are respectively ▮▮▮▮ specific members, all the banks and Client Group (Association/ Chamber/ Cluster).

1. **▮▮▮▮ Users Group**
    o  Add, View, Update users by selecting user wise roles and permission
    o  View entrepreneur Basic information, personal information, Business information, Entrepreneurs Training information, Previous Loan information, Employment information, Information of current loan.
    o  Monitor monthly reports of the entrepreneurs
    o  Monitor monthly report of banks
    o  Monitor repayment details
    o  View repayment report individually with (Principal amount) and with (Principal amount + Service Charge)
    o  Impact assessment survey for different types of sales, productions, liabilities etc. (Details is given in below chapter)

2. **Bank Users Group**

   - ○ View, Add and Edit Entrepreneurs details
   - ○ Add, View and Edit Entrepreneurs Repayment details, can add comments

3. **Client Group (Association/ Chamber/ Cluster)**

   They will use this system only for viewing purpose.

   - ✓ View Installments
   - ✓ View Loan Amount
   - ✓ View ▇▇▇ Type

## 2.4 Operating Environment

| SL# | Server | HDD | Processor | RAM |
|---|---|---|---|---|
| 1 | Server 1 | 2 TB | 8-16 Core | 32 GB |
| 2 | Backup Server | 2 TB | 8 Core | 16 GB |
| 3 | Dedicated Internet | 20 Mbps for each server | | |
| 4 | *Dedicated IP Address* | *If the users want to access software remotely* | | |
| 5 | *LAN setup for 20-30 users* | *If the software is used only in SMEF premise* | | |

## 2.5  Design and Implementation Constraints

| # SI | Use For | Proposed Technology |
|---|---|---|
| 1 | System Frontend | HTML5, AJAX, CSS, Bootstrap |
| 2 | System Backend | PHP 7.5 |
| 3 | Framework | Laravel 8 |
| 4 | Design Pattern | MVC |
| 5 | Database Engine | MySQL, Firebase |
| 6 | Web API | RESTful API |
| 7 | Search Engine | Elastics/Haystack search engine |
| 8 | Caching Technology | Redis, Memcached, Varnish, Squid |
| 9 | Service Environment | LAMP |
| 10 | Mobile Application | Flutter |
| 11 | Project Management Tools | Trello, Jira Issue Tracker |
| 12 | Version Control | GitHub |
| 13 | Design Tools | Adobe XD, Photoshop, Illustrator |
| 14 | Testing Tools | Selenium, Zephyr, Testpad |

## 2.6 System Environment

```
                                    ┌──────────────────────────────┐
                                    │   ┌──────────────────────┐   │
                                    │   │  Mobile Application   │   │
   ┌─────────────────────┐          │   └──────────────────────┘   │
   │ ████  User          │──────┐   │        ┌──────────┐          │
   └─────────────────────┘      └──▶│        │ ████ CWS │          │
                                    │        └──────────┘          │
   ┌─────────────────────┐      ┌──▶│   ┌──────────────────────┐   │
   │ ████████            │──────┘   │   │   Web Application     │   │
   └─────────────────────┘          │   └──────────────────────┘   │
                                    │                              │
   ┌─────────────────────┐      ┌──▶└──────────────────────────────┘
   │ Client Group        │──────┘
   │ (Association/       │
   │ Chamber/ Cluster)   │
   └─────────────────────┘
```
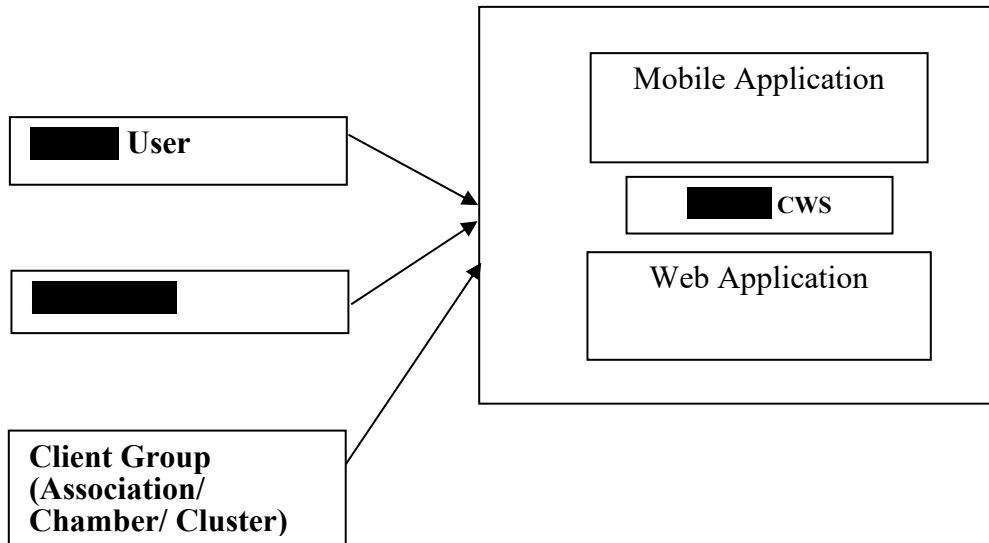
## 2.7 User Documentation

List the user documentation components that will be delivered along with the software:

1. Software Design Document
2. API Documentation
3. User Manual
4. Video Tutorial
5. Handover notes

# 3. System Features

After logging into the system Users will see an interface where they can access the features. Features will be accessible to the user by roles and permission wise.

## 3.1 Dashboard:

o Total number of ████████████████████████████████████████████ ██████████████████████ will be visible

o Total number of Male/Female will be visible individually

- o View no. of entrepreneurs under (Cluster wise/ Sector wise/ Dhaka based/ Outside Dhaka based)

- o Latest notification details of different Installments, Loan Disbursements, Repayment related alerts (Notification bar)

- o Month wise/Year wise loan information (Loan Application vs Loan Approve) show in the form of Bar chart

## 3.2 Roles and Permission Set

████This system will have user friendly graphical user interface for selecting roles for specific users of ████████████████

- o System will record the user activity log for future improvement

- o Add, Edit and View option will be available Role wise

- o Verification will perform in Hierarchical order of office management before any Loan Disburse

## 3.3 Loan Management

There will some sub module under Loan Management. All the loan related features will be added in this section.

**Agreement Section**- For signing new agreement user should enter following information. If user need, they can perform Add and Edit Agreement.

**Mobile/ Web Application**

Agreement Name

Agreement Id:

Financial Year

Agreement Date

Total Fund Amount

Duration of the program

Fee/Service Charge/Interest

Refundable Amount

Location

Attachments if any

Users

Add/Edit

Verification will perform by management in hierarchical Order before confirming any Agreement

Confirmation Done
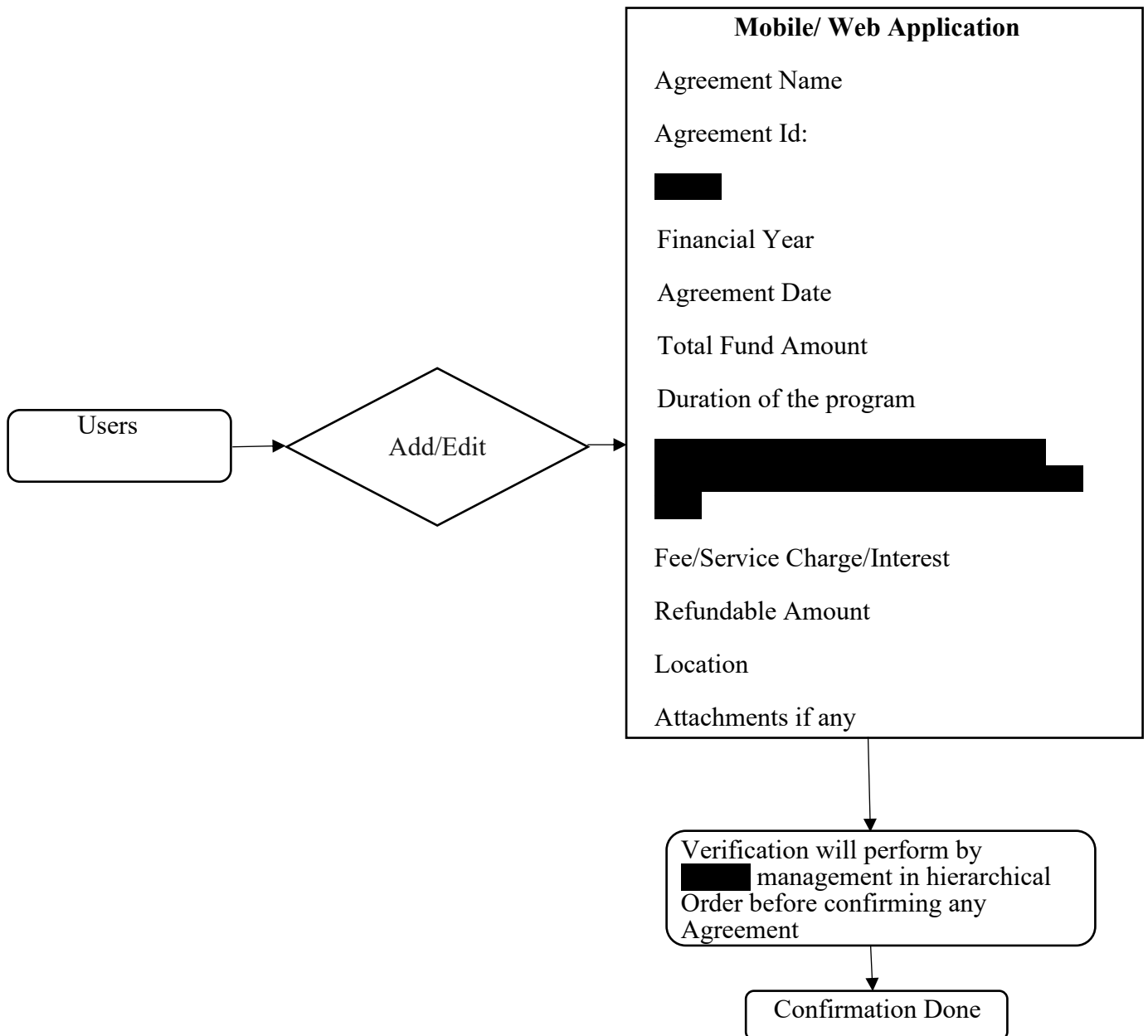
1. Agreement Name

2. Agreement Id

   ██████

4. Add financial year

5. Agreement Date

6. Total Fund Amount

7. Duration of the program

8. Client selection (List of Association/ Chamber/ Cluster will show)

9. Fee/Service Charge/Interest Rate

10. Refundable Amount

11. Location

12. Upload image option for Attachments

██████ User can perform Add and Edit in all the fields.

1. PFI Id

2. PFI Name

3. Description

4. Contact Person Name

5. Contact Person Email

6. Contact Person Phone

**\*More fields can be added if required**

**Fund Release** ██████████████ - User can perform Add and Edit in all the fields.

**Mobile/Web Application**

Agreement Name

Agreement Id

Phase Title: (1$^{st}$/2$^{nd}$/…)

Phase Release Date

Clearance Date (Date will be editable for some reasons)

Total Amount

PFI/Bank Id

Client name

Users → Add/Edit →
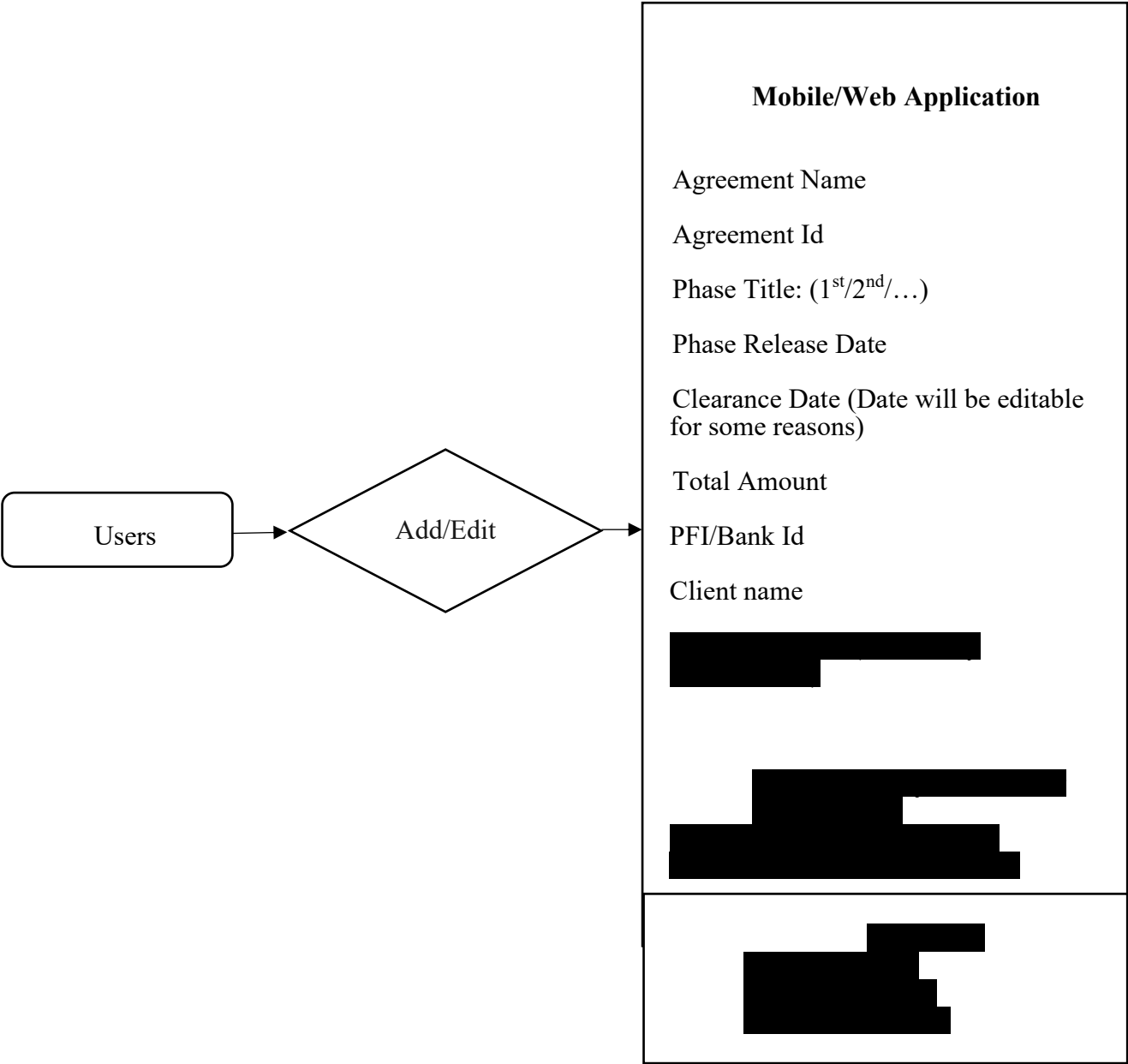
1. Agreement Name
2. Agreement Id
3. Phase Title: (1st/2nd/…)
4. Phase Release Date
5. Total Amount
6. PFI's name
7. Client name

███████████████████████

█████████████████████████████

**Refund from** █████████ - User can Add or Edit in all the fields.

| | | **Mobile/ Web Application** |
|---|---|---|
| Users | Add/Edit | Agreement Name |
| | | Agreement Id |
| | | Total Refund Amount |
| | | PFI's name: |
| | | Client name |
| | | Phase Title: (1st/2nd/3rd…) |
| | | Installment no: |
| | | Principle Amount: |
| | | Principle amount with Service Charge: |
| | | Interest Rate |
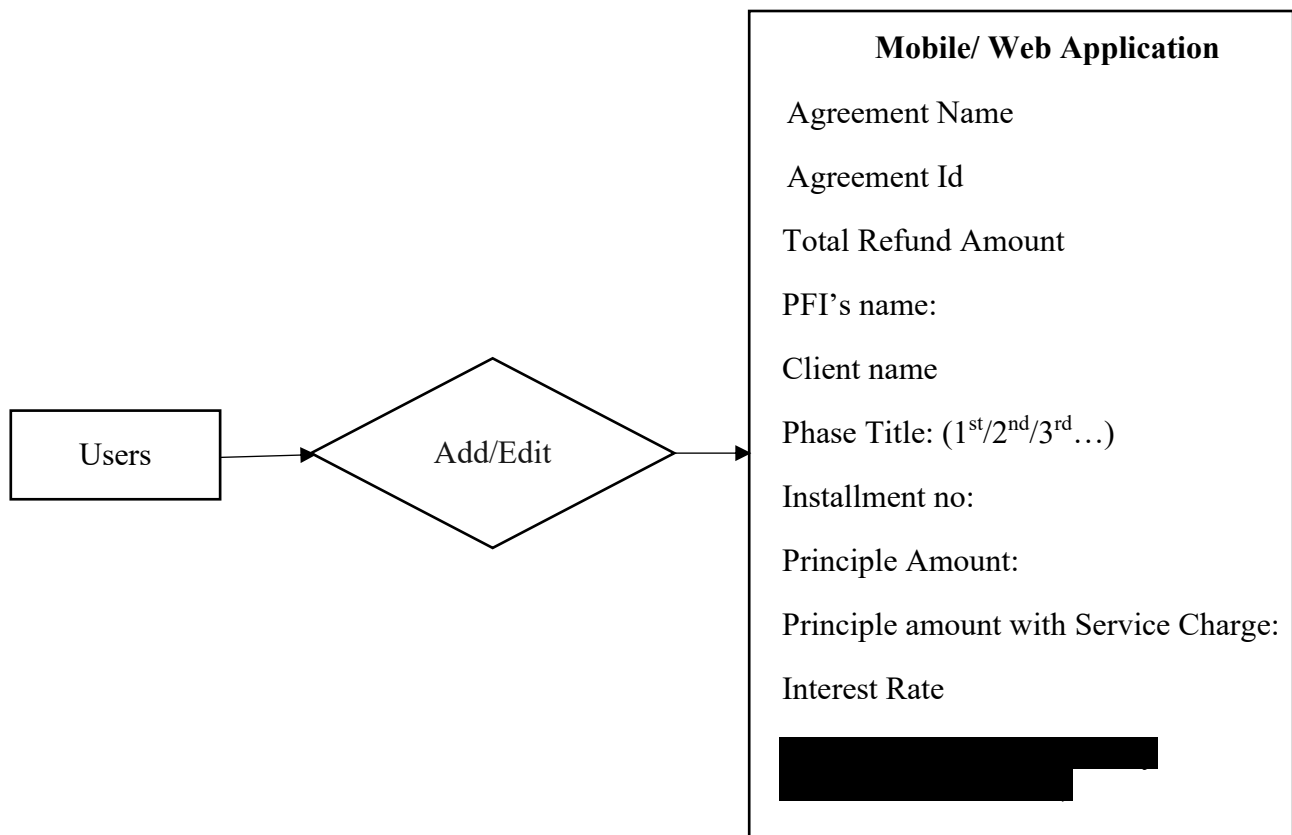
Clearing Date: (Date will be editable for
　　　　some reasons)
Charge if any:

1.  Agreement Name

2.  Agreement Id

3.  Total Refund Amount

4.  PFI's name

5.  Phase Title: ($1^{ST}$/$2^{nd}$/…)

6.  Installment no:

7.  Principle amount:

8.  Principle amount with Service Charge:

9.  Interest Rate:

11. Clearing Date (Editable)

12. Charge if any

**Calculate Refund amount** (**PFI to SMEF**)-

Agreement Name:
Phase Selection (Multiple):

**VIEW (Total Recovery amount from Entrepreneur)**

　　　**Amount will show**

**Repayment Percentage** ▮▮▮▮▮▮▮▮▮▮▮▮

　　　Enter %: _ (System will Calculate from principal amount ▮▮▮▮▮▮▮▮▮)

　　　Month: (System will calculate the disburse amount in months)

　　　**View Amount-** (System will show the amount automatically)
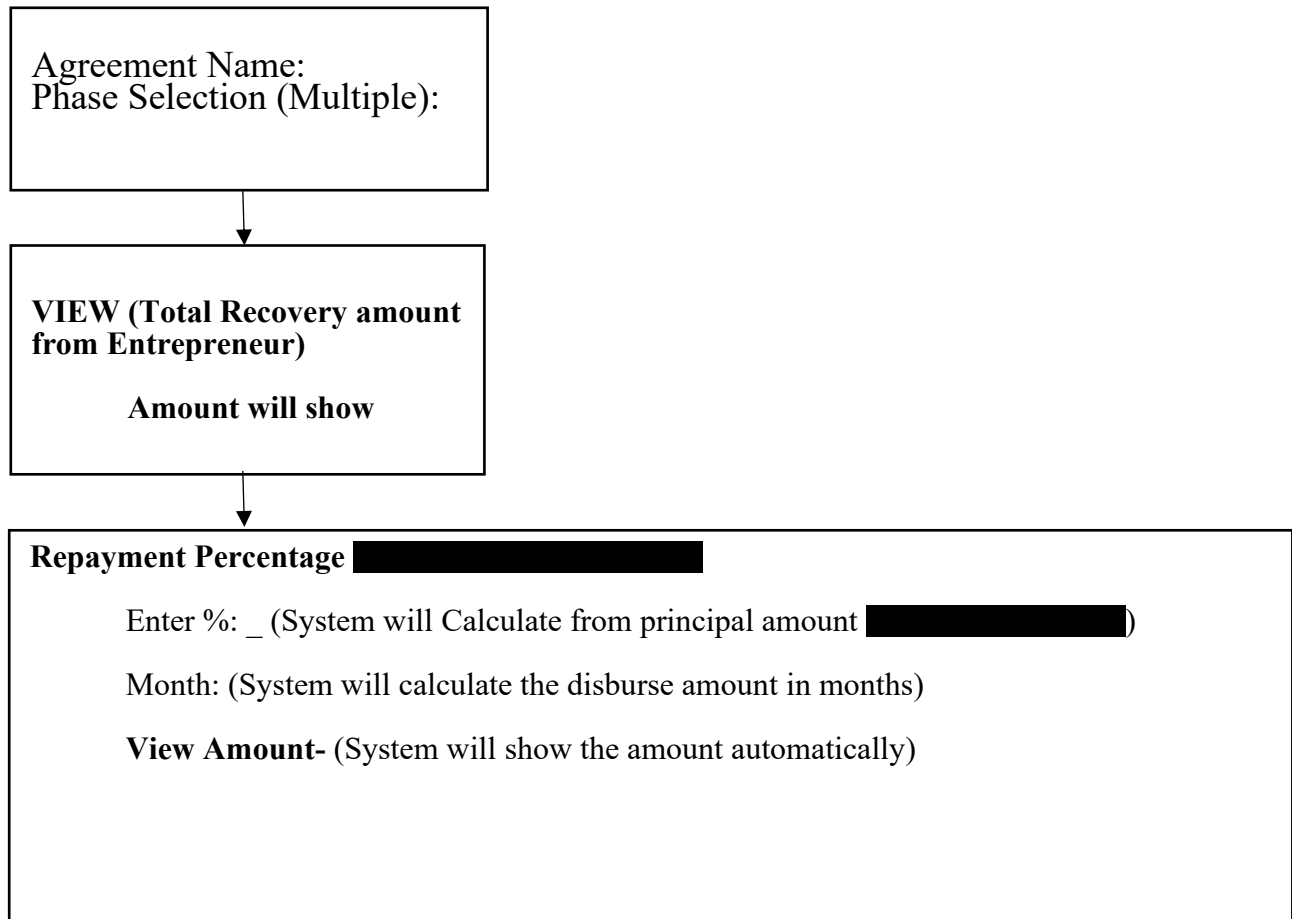
**Repayment Schedule-** User can find Repayment details here.



**Phase wise view/Cumulative wise collection:**

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | | | | | | |
| ▮ | | | | | | |
| ▬▬ | | | | | | |
| ▯ | | | | | | |

## 3.4 Loan Monitoring

User will monitor all the details of Entrepreneurs loan related queries etc.

**Entrepreneur details-** ▉▉▉▉▉▉ can only view Entrepreneurs Basic Information, Personal Information, Business Information, Entrepreneur Training Information and Employment Information in this module. Bank will input this information in the software.

| 1. Basic Information |
|---|
|  |

| 2. Personal Information of the Entrepreneur(s) |
|---|
|  |

| 3. Business Information |
|---|
|  |

**4. Entrepreneurs Training Information**

**6. Employment Information**

**Loan Disbursement Details-** [REDACTED] can view all the loan disbursement related information in this module. Bank will input this information in the software. Information details are listed below-

**7. Information of Current Loan**

**5. Previous Loan Information**

**Repayment Collection-**

| | | Mobile/Web Application |
|---|---|---|
| | | Entrepreneur name: |
| User → Add/Edit → | | ▮ name: |
| | | Interest rate: |
| | | Loan type: |
| | | Total Loan Amount: |
| | | Remaining amount: |
| | | *Fields are not static here. More fields can be added if required |
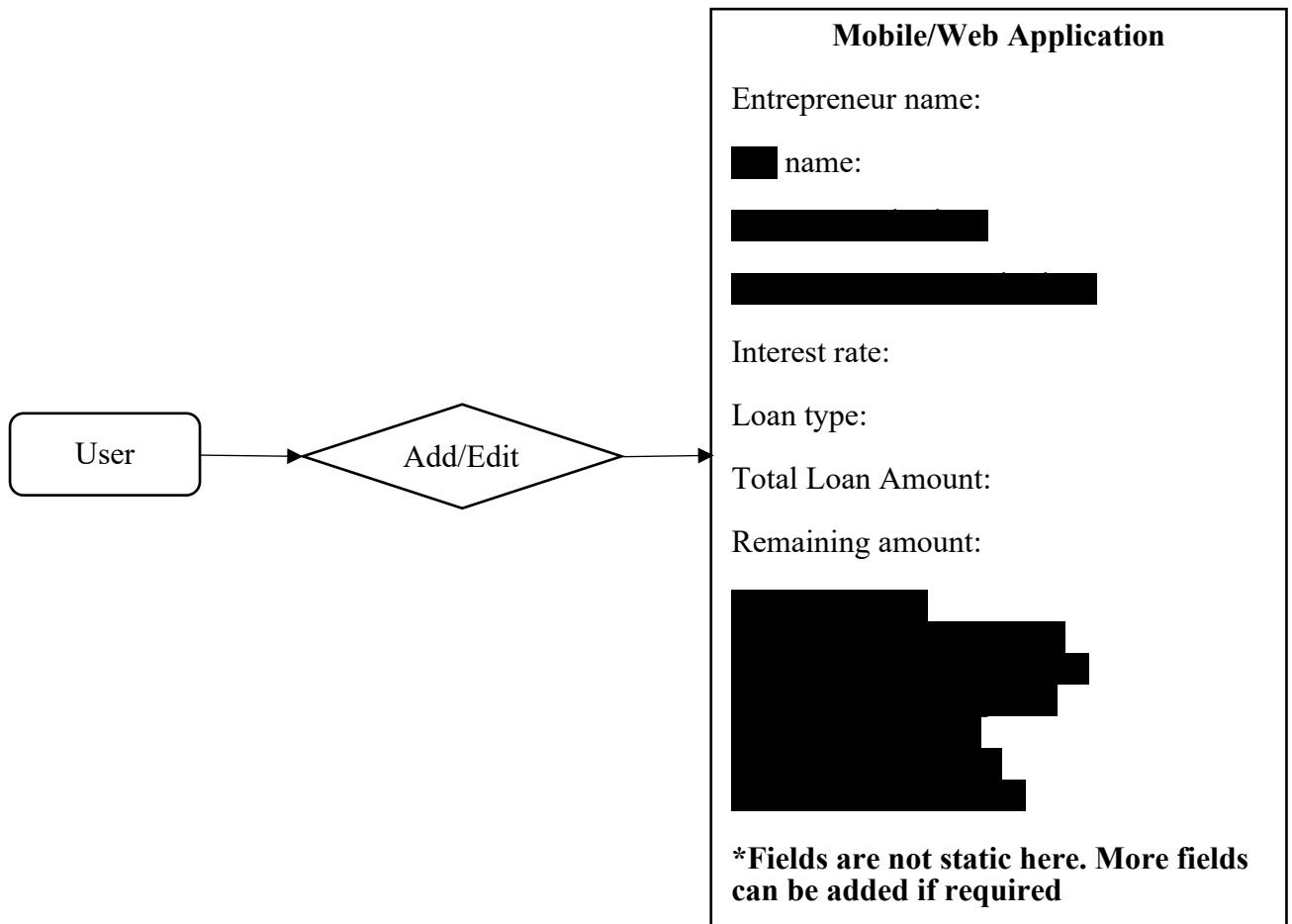
## 3.5  Impact Assessment

User can observe some impacts in the dashboard. Impact can be-

1.  Impact of Annual Sales Revenue
2.  Impact of Annual Production
3.  Impact of Liabilities
4.  Impact of number of employees

| Titles | Previous Loan Result | Current Loan Result | Impact |
|---|---|---|---|
| Annual Sales Revenue | ● ● ● | ● ● ● | **Positive**/ **Negative** |
| Annual Production | ● ● ● | ● ● ● | **Positive**/ **Negative** |
| Liabilities | ● ● ● | ● ● ● | **Positive**/ **Negative** |
| Number of Employee | ● ● ● | ● ● ● | **Positive**/ **Negative** |

## 3.6  Report Generate

Mainly, two types of report user will generate from the CWS Software. Report will be based on

██████████████████████████████

**Banks perspective report includes-**

1.  Date wise total agreement amount
2.  Date wise total disbursement amount
3.  Date wise outstanding report
4.  Date wise overdue report

**Entrepreneur perspective report includes-**

1.  Cluster wise report
2.  Segment wise report
3.  Gender wise report
4.  Demography wise report

## Email/SMS Notification

System will provide the feature of Email Notification to the users. Notification system will be different for different types of users. Mainly, ████████████ all types of notification of different installments (████████████████████████████████████████████████ will be notified by email). ██████ will only get the notification of different installments of the ██████ Association/ Cluster/ Chamber/ Individual client will get the notification of installment notice etc.

```
┌─────────────────────────────────────────────────────────────────────┐
│                      Mobile/Web Application                           │
│                                                                       │
│                                      ┌──────────────────────────────┐ │
│                                      │            Bank              │ │
│                                      │                              │ │
│                                      │  Types of notifications-     │ │
│                                      │  ████  details               │ │
│  ┌──────────────────────────┐        │  Installments                │ │
│  │  ████  will get all types │        │                              │ │
│  │  All types of notification│        └──────────────────────────────┘ │
│  │                          │──┐                                       │
│  │                          │  └──┌──────────────┐                    │
│  └──────────────────────────┘     │ Notifications │                    │
│                                    └──────────────┘                    │
│                                      │    ┌──────────────────────────┐ │
│                                      │    │        Association       │ │
│                                      └────│                          │ │
│                                           │  Types of notifications- │ │
│                                           │  Installment notices     │ │
│                                           └──────────────────────────┘ │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```
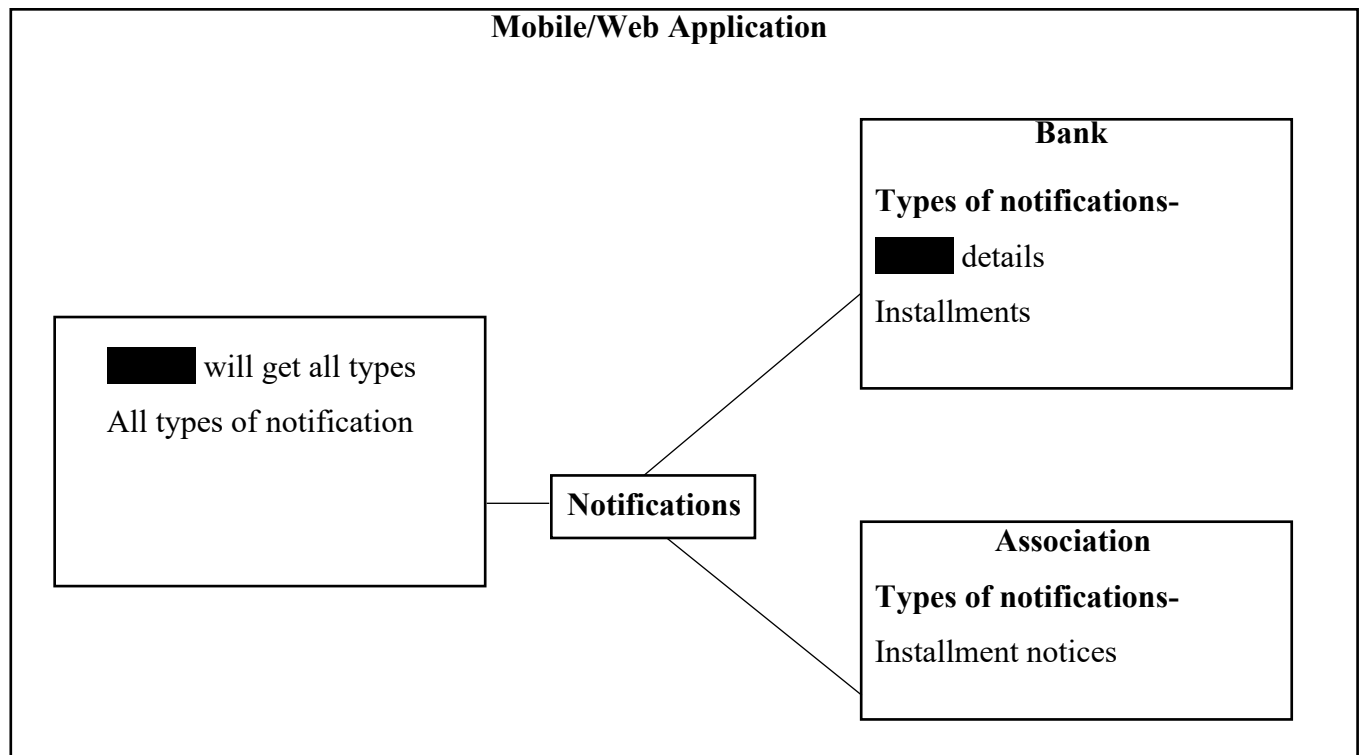
# 4. Other Nonfunctional Requirements

## 4.1 Security Requirements

The system must be protected from internal and external threats. We will use encryption policy for user credential. Also, we provide some prioritized security threats marked by OWASP as of 2017

## 4.2 Software Quality Attributes

Dram71 will ensure the software quality with the below mentioned activity

**User Acceptancy Test**- User acceptance testing (UAT) is the last phase of the software testing process. During UAT, actual software users will mainly test the software to make sure that it can handle required tasks in real-world scenarios, according to specifications. UAT is one of the final and

critical software project procedures that must occur before newly developed software is rolled out to the market. Also, we want to inform our client that, UAT is also known as beta testing, application testing or end user testing.

**Unit and System testing by our QA engineers-** For ensuring the security of this system, we will design a security development lifecycle. Security will be considered and tested throughout the project lifecycle. Security testing will be performed to ensure that the system protects the data and maintains its intended functionality. The security testing will involve an active analysis of the application for any weaknesses, technical flaws, or vulnerabilities. The tests carried out by the testing team will include from the following security vulnerabilities wherever applicable:

| Security Vulnerability | Testing Tool |
|---|---|
| SQL Injection | Burp |
| Cross Site Scripting | Burp |
| Broken Authentication and Session Management | Burp |
| Insecure Direct Object References | Burp |
| Cross Site Request Forgery | Burp |
| Invalidated Redirects and Forwards | Burp |
| Sensitive Data Exposure | Burp |
| Using components with known vulnerabilities | Burp |

**Regular client feedback on sprint release-** Client feedback will be taken after the release of each iteration and used to modify plans for next sprints.

# 5. Process Flow of Credit Wholesaling Software
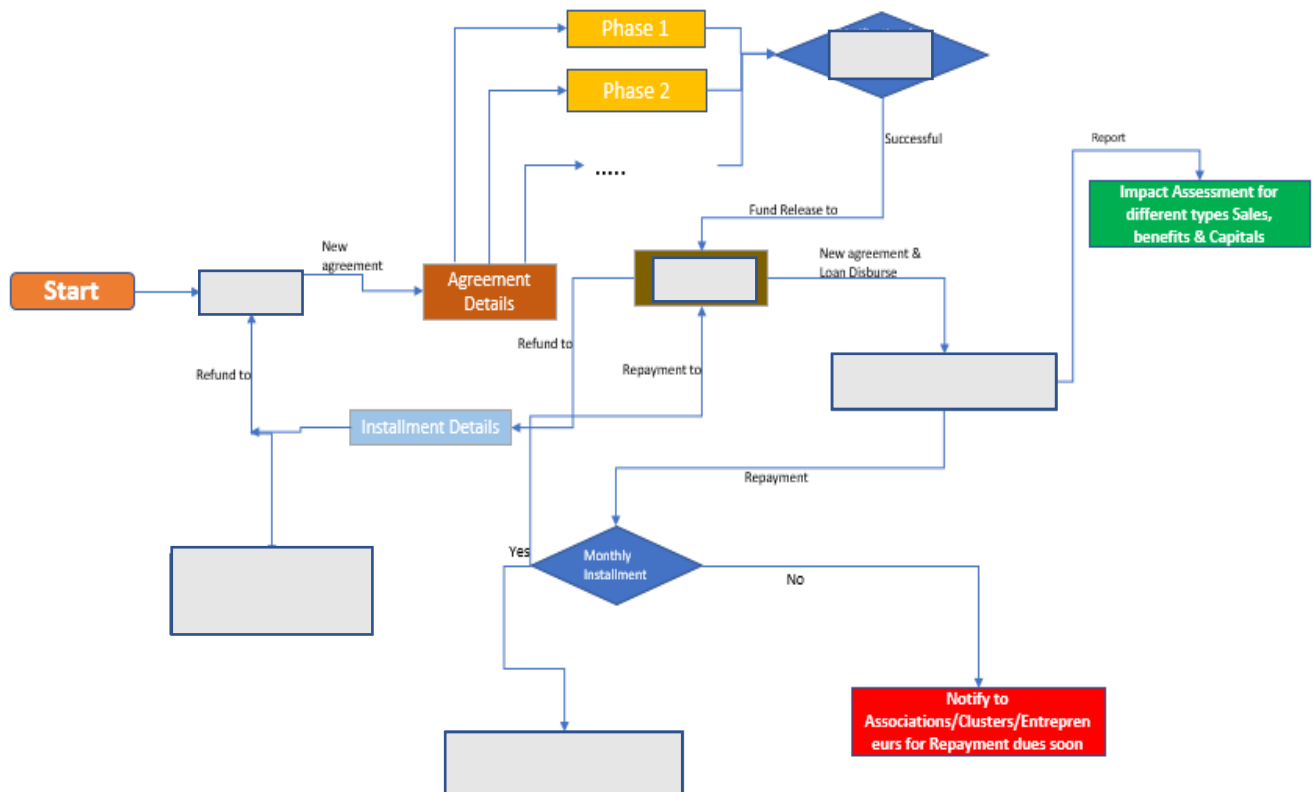


# 6. Required Documents

All types of associations, clusters and entrepreneur profile we need for input the fields in the software. As associations, clusters, entrepreneurs can be different types of so we need all type of profiles. The required profiles are listed below-

1. List of all associations under each ▮▮▮▮▮▮
2. Agreement copy list of ▮▮▮▮▮▮
3. Bank/PFI wise selected associations all types profile information (For designing dataset its required)

▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮