

Banking Project

Software Requirements Specification

4.0

03/09/2017

Prepared for
Teaching Team

Revision History

Date	Description	Author	Comments
25/10/2016	Version 1	Jean Patrick	Initial Draft
30/10/2016	Version 1.1	Sam Tom	Added section 5.Change management process Added in Technical requirements T3.1, T17.1, T47.1, T60.1,T70.1.
5/11/2016	Version 1.2	Sam Tom	Added section 3.7 Design constraints
15/11/2016	Version 1.3	Sam Tom	Typo;s Fixed
18/11/2016	Version 2.0	Jean Patrick	<ul style="list-style-type: none"> Customized statement Field name “Amount Lower Limit” is changed to “Minimum Transaction Value” Change T39 ,T40, T41 In Edit Account module, Fields Customer Id and Balance is disabled. Changes made in section 3.1 In “Form after submitting Edit Customer” Fields Customer Name, Gender ,Date of Birth cannot be changed.
24/11/2016	Version 3.0	Jean Patrick	<ul style="list-style-type: none"> Added details of web service in section 2.1.3 software interface Changed Scope of the Project in section 1.2 Changed Functional details in F29, F32, F33, F36. In section 3.1 module new customer added password field
02/09/2017	Version 4.0	Sam Tom	<ul style="list-style-type: none"> In Balance Enquiry, Account No changed to Drop down for Customer in section 3.1.

Document Approval

The following Software Requirements Specification has been accepted and approved by the following:

Printed Name	Title	Date
Nick Price	Lead Software Engg.	29/11/2016
Sam Patrick	Lead QA Engineer	29/11/2016
Krishna Rungta	Project Sponsor	29/11/2016

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1. Introduction

The Bank project aims to provide net banking facility to its customers.

This release will have limited features. Over a period of time, new and new functionalities will be added to the site.

1.1 Purpose

The Purpose of this document is to outline the requirements for the RR Banking website to be developed for RR Tech. Pvt. Ltd. This document will be used by all stakeholders including developers and testers.

1.2 Scope

The scope of this project is limited to the testing of the features described in the succeeding sections of this document.

Non-functional testing like stress,performance is beyond scope of this project.

Automation testing is beyond scope.

Functional testing & external interfaces are in scope and need to be tested

No QA support for mobile application developed. Only web service will be tested.

The banking site will be only compatible with Chrome version 27 and above

1.3 Definitions, Acronyms, and Abbreviations

Abbreviation	Word
M	Manager
C	Customer

1.4 References

Nil

2. Specific Requirements

The RR Bank will have 2 roles

1. Manager
2. Customer

Following features/modules will be available to these 2 different roles

Manager	Customer
New Customer	Balance enquiry
Edit Customer	Fund Transfer
Delete Customer	Mini Statement
New Account	Customized Statement
Edit Account	Change Password
Delete Account	Login & Logout
Deposit	
Withdrawal	
Fund Transfer	
Change Password	
Balance Enquiry	
Mini Statement	
Customized Statement	
Login & Logout	

Description of the modules

Module Name	Applicable Roles	Description
Balance Enquiry	Manager Customer	Customer: A customer can have multiple bank accounts. He can view balance of his accounts only

		Manager: A manager can view balance of all the customers who come under his supervision
Fund Transfer	Manager Customer	Customer: A customer can have transfer funds from his “own” account to any destination account. Manager: A manager can transfer funds from any source bank account to destination account
Mini Statement	Manager Customer	A Mini statement will show last 5 transactions of an account Customer: A customer can see mini-statement of only his “own” accounts Manager: A manager can see mini-statement of any account
Customized Statement	Manager Customer	A customized statement allows you to filter and display transactions in an account based on date, transaction value Customer: A customer can see Customized-statement of only his “own” accounts Manager: A manager can see Customized -statement of any account
Change Password	Manager Customer	Customer: A customer can change password of only his account. Manager: A manager can change password of only his account. He cannot change passwords of his customers
New Customer	Manager	Manager: A manager can add a new customer.
	Manager	Manager: A manager can edit details like address, email , telephone of a customer.
New Account	Manager	Currently system provides 2 types of accounts <ul style="list-style-type: none"> • Saving • Current A customer can have multiple saving accounts (one in his name , other in a joint name etc). He can have multiple current accounts for different companies he owns. Or he can have a multiple current and saving accounts. Manager: A manager can add a new account for an existing customer.
Edit Account	Manager	Manager: A manager can add a edit account details for an existing account
Delete Account	Manager	Manager: A manager can add a delete an account for a customer.

Delete Customer	Manager	A customer can be deleted only if he/she has no active current or saving accounts Manager: A manager can delete a customer.
Deposit	Manager	Manager: A manager can deposit money into any account. Usually done when cash is deposited at a bank branch.
Withdrawal	Manager	Manager: A manager can withdraw money from any account. Usually done when cash is withdrawn at a bank branch.

2.1 External Interface Requirements

2.1.1 User Interfaces

None

2.1.2 Hardware Interfaces

None

2.1.3 Software Interfaces

The bank will provide a mobile app wherein a customer can

1. See mini statement for his account.
2. See balance enquiry for his account.

Two web service calls are created so the mobile app can connect to net banking database and sink data. Details as below.

Mini Statement

Get last 5 transaction details from server

Output Format

JSON

API call category

User

API Request

http://demo.RR.com/V4/sinkministatement.php?CUSTOMER_ID=68195&PASSWORD=1234!&Account_No=1

<i>Input Parameter</i>	<i>Type</i>	<i>Description</i>
CustomerID	Mandatory	User's customer id
Password	Mandatory	Users' password
AccountNumber	Mandatory	Account Number for which statements are required

Response

```
{
  "result":
  {
    "Statements":[
      {
        "Transaction ID":123,
        "Amount":"10000",
        "Transaction Type":"W",
        "ACCOUNT_NO":"123",
        "Date of Transaction":"2013-10-01",
        "Description":"Self"
      },
      {
        "Transaction ID":142,
        "Amount":"10000",
        "Transaction Type":"d",
        "ACCOUNT_NO":"123",
        "Date of Transaction":"2013-10-09",
        "Description":"Self"
      },
      {
        "Transaction ID":1111,
        "Amount":"700",
        "Transaction Type":"d",
        "ACCOUNT_NO":"123",
        "Date of Transaction":"2013-15-09",
        "Description":"Self"
      },
      {
        "Transaction ID":148,
        "Amount":"7000",
        "Transaction Type":"d",
        "ACCOUNT_NO":"123",
        "Date of Transaction":"2013-17-09",
        "Description":"Self"
      },
    ],
  }
}
```



```

    {
      "Transaction ID":158,
      "Amount":"5500",
      "Transaction Type":"d",
      "ACCOUNT_NO":"123",
      "Date of Transaction":"2013-18-09",
      "Description":"Self"
    }
  ],
  "message":
  {
    "ErrorCode":0,
    "ErrorMsg":"error message"
  }
}

```

Balance Enquiry

Get Balance from User Account

Output Format

JSON

API call category

User

API Request

http://demo.RR.com/V4/sinkbalanceenquiry.php?CUSTOMER_ID=68195&PASSWORD=1234!&Account_No=

<i>Input Parameter</i>	<i>Type</i>	<i>Description</i>
CustomerID	Mandatory	Users customer id
Password	Mandatory	Users password
AccountNumber	Optional	If user enters Account_No then display balance for account associate with Account_No If user not enters Account_No then display balance for all account associated with it.

Response

```

{
  "result":
  {
    "Balance":[

```

```

    {
      "ACCOUNT_NO":123,
      "ACCOUNT_TYPE":"Saving",
      "BALANCE":"10000"
    },
    {
      "ACCOUNT_NO":256,
      "ACCOUNT_TYPE":"Current",
      "BALANCE":"50000"
    },
    {
      "ACCOUNT_NO":298,
      "ACCOUNT_TYPE":"saving",
      "BALANCE":"20"
    }
  ],
  "message":
  {
    "ErrorCode":0,
    "ErrorMsg":"error message"
  }
}

```

Error Code Table

Error Code #	Error Code Message
0	Success
1	NoData
2	Connection Issue
3	Login Credentials Incorrect

2.1.4 Communications Interfaces

None

3.1 Front End Details

This section describes the Front end of RR Bank.
It also lists a few use cases to describe the functioning of the system

Following is a list of module wise fields

Fund Transfer

- Payers account no
- Payees account no
- Amount
- Submit
- Reset

Change Password

- Old Password
- New Password
- Confirm Password
- Submit
- Reset

Balance enquiry

- Account No (Drop down for Customer)
- Submit
- Reset

Mini Statement

- Account No
- Submit
- Reset

Customized Statement

- Account No
- From Date
- To Date
- Minimum Transaction Value
- Number Of Transaction
- Submit
- Reset

New Customer

- Customer Name
- Gender
- Date of Birth
- Address
- City
- State
- PIN
- Mobile Number
- Email Id

- Submit
- Reset

New Account

- Customer Id
- Account Type
- Initial deposit
- Submit
- Reset

Deposit

- Account Number
- Amount Deposit
- Description
- Submit
- Reset

Withdraw

- Account Number
- Amount
- Description
- Submit
- Reset

Fund Transfer

- Payers Account Number
- Payees Account Number
- Amount
- Description
- Submit
- Reset

Change Password

- Old Password
- New Password
- Confirm Password
- Submit
- Reset

Delete Customer

- Customer Id
- Submit
- Reset

Edit Account

- Account Number
- Submit
- Reset

Form after submitting Edit Account

- Customer Id (Disabled)
- Account Type (Drop Down - Saving or Current)
- Balance (Disabled)
- Submit
- Reset

Delete Account

- Account Number
- Submit
- Reset

Edit Customer

- Customer Id
- Submit
- Reset

Form after submitting Edit Customer

- Customer Name (Disabled)
- Gender (Disabled)
- Date of Birth (Disabled)
- Address
- City
- State
- PIN
- Mobile Number
- Email Id
- Submit
- Reset

3.2 Technical Requirements

New Account

T1 Customer Id - Customer ID is required

- T2 Customer Id - Special character are not allowed
- T3 Customer Id - Characters are not allowed
- T3.1 Customer Id - First character cannot have space

New Customer

- T4 Customer Name – Numbers are not allowed
- T5 Customer Name – Special characters are not allowed
- T6 Customer Name – Customer name must not be blank
- T7 Customer Name – First character cannot have space
- T8 Address - Address Field must not be blank
- T9 Address - First character can not have space
- T10 Address - Special characters are not allowed
- T11 City - Special character are not allowed
- T12 City - City Field must not be blank
- T13 City – Numbers are not allowed
- T14 City - First character can not have space
- T15 State – Numbers are not allowed
- T16 State - State must not be blank
- T17 State – Special characters are not allowed
- T17.1 State – First character cannot have space
- T18 Pin - Characters are not allowed
- T19 Pin - PIN Code must not be blank
- T20 Pin – Special characters are not allowed
- T21 Pin – PIN Code must have 6 Digits
- T22 Pin - First character can not have space
- T23 Mobile Number – Mobile no must not be blank
- T24 Mobile Number – Special character are not allowed
- T25 Mobile Number – Character are not allowed
- T26 Mobile Number - First character can not have space
- T27 Email : Email ID must not be blank
- T28 Email : Email ID is not valid
- T29 Email : First character can not have space

Balance Enquiry

- T30 Account No must not be blank
- T31 Special character are not allowed
- T32 Characters are not allowed

Customized Statement Form

- T33 Account No - Account Number must not be blank

- T34** Account No - Characters are not allowed
- T35** Account No - Special characters are not allowed
- T36** Minimum Transaction Value – Special character are not allowed
- T37** Minimum Transaction Value – Amount Lower Limit is required
- T38** Minimum Transaction Value – Characters are not allowed
- T39** Number of Transaction – Special character are not allowed
- T40** Number of Transaction – Minimum Transaction Value must not be blank
- T41** Number of Transaction – Character are not allowed

Delete Account Form

- T42** Account No must not be blank
- T43** Special character are not allowed
- T44** Characters are not allowed

Delete Customer

- T45** Customer Id - Customer ID is required
- T46** Customer Id - Special character are not allowed
- T47** Customer Id - Characters are not allowed
- T47.1** Customer Id - First character cannot have space

Deposit

- T48** Account No must not be blank
- T49** Special character are not allowed
- T50** Characters are not allowed
- T51** Amount field must not be blank
- T52** Special characters are not allowed
- T53** Characters are not allowed
- T54** Description must not be blank

Edit Account

- T55** Account No must not be blank
- T56** Special character are not allowed
- T57** Characters are not allowed

Edit Customer form

- T58** Customer Id - Customer ID is required
- T59** Customer Id - Special character are not allowed
- T60** Customer Id - Characters are not allowed
- T60.1** Customer Id - First character can not have space

Edit Customer

- T61** Address - Address Field must not be blank

- T62** Address - First character can not have space
- T63** Address - Special characters are not allowed
- T64** City - Special character are not allowed
- T65** City - City Field must not be blank
- T66** City – Numbers are not allowed
- T67** City - First character can not have space
- T68** State – Numbers are not allowed
- T69** State - State must not be blank
- T70** State – Special characters are not allowed
- T70.1** State – First character cannot have space
- T71** Pin - Characters are not allowed
- T71** Pin - PIN Code must not be blank
- T72** Pin – Special characters are not allowed
- T73** Pin – PIN Code must have 6 Digits
- T74** Pin - First character cannot have space
- T75** Mobile Number – Mobile no must not be blank
- T76** Mobile Number – Special character are not allowed
- T77** Mobile Number – Character are not allowed
- T78** Mobile Number - First character cannot have space
- T79** Email : Email ID must not be blank
- T80** Email : Email ID is not valid
- T81** Email : First character cannot have space

Fund Transfer

- T82** Payers Account Number must not be blank
- T83** Special characters are not allowed
- T84** Characters are not allowed
- T85** Payees Account Number must not be blank
- T86** Special characters are not allowed
- T87** Characters are not allowed
- T88** Amount Field must not be blank
- T89** Characters are not allowed
- T90** Special characters are not allowed
- T91** Description cannot be blank

Login

- T92** User-ID must not be blank
- T93** Password must not be blank

Mini Statement Page

- T94** Account No must not be blank
- T95** Special character are not allowed
- T96** Characters are not allowed

Change Password

- T97** Old Password must not be blank
- T98** New Password must not be blank
- T99** Enter at-least one numeric value
- T100** Enter at-least one special character
- T101** Choose a difficult Password
- T102** Confirm Password must not be blank
- T103** Passwords do not Match

Withdraw

- T104** Account No must not be blank
- T105** Special character are not allowed
- T106** Characters are not allowed
- T107** Amount Field must not be blank
- T108** Characters are not allowed
- T109** Special characters are not allowed
- T110** Description cannot be blank

3.3 Functional validations

Balance Enquiry

Manager

- F1** Manager can view balance of accounts associate with him
- F2** Account number entered should exist in database

Customer

- F3** Customer can view balance of only his accounts
- F4** Account number entered should exist in database

Fund Transfer

Manager

- F5** If these source and destination account numbers are invalid, system displays an error
"Account #### does not exist!!!"
- F6** If these source and destination account numbers are same, system displays an error

F7 If the source account does not have the necessary balance, system displays an error

F8 If the source account does not associated with manager, System displays an error

Customer

F9 If the destination account number is not valid, system displays an error "Account ### does not exist!!!"

F10 If these source and destination account numbers are same, system displays an error

F11 If the source account does not have the necessary balance, system displays an error

F12 If the source account is not associate with customer itself, System displays an error.

Withdrawal

Manager

F13 If source account number is invalid, system displays an error

F14 If source account does not have the necessary balance, system displays an error

F15 If source account does not associate with manager, System displays an error.

Customer

F16 If source account number is invalid, system displays an error

F17 If source account does not have the necessary balance, system displays an error

F18 If source account does not associate with customer, System displays an error.

Deposit

Manager

F19 If destination account number is invalid, system displays an error

F20 If destination account number does not associate with manager, System displays an error.

Customer

F21 If destination account number is invalid, system displays an error

F22 If destination account number does not associate with customer, System displays an error.

Delete Customer

Manager

F23 If Customer Id is invalid, system displays an error.

F24 If account associate with Customer Id, System displays an error.

F25 If Customer Id does not associate with manager, System displays an error.

Delete Account

Manager

F26 If Account Number is invalid, system displays an error

F27 If account does not associate with manager logged in, System displays an error.

Edit Account

Manager

F28 If Account Number is invalid, system displays an error.

F29 If Account number does not associate with manager, System displays an error. On success , Account details must be shown.

New Account

Manager

F30 If Customer ID is invalid, system displays an error.

F31 If initial deposit is less than 500, System displays an error.

F32 If Customer Id does not associate with manager, System displays an error. On success account detail must be shown.

New Customer

Manager

F33 If same Email Id exist in the system, system shows an error. On success , user registration details must be shown.

Edit Customer

Manager

F34 If same Email Id exist in the system, system shows an error.

F35 If Customer Id is invalid, System displays an error.

F36 If Customer Id does not associate with Manager, System displays an error. On success , user registration details must be shown.

Change Password

Manager

F37 If Old Password is invalid, System shows an error.

Customer

F38 If Old Password is invalid, System displays an error

Customized Statement

Manager

F39 If account no is invalid, System displays an error

F40 If From Date is greater than To Date, System displays an error.

Customer

F41 If account no is invalid, System displays an error

F42 If From Date is greater than To Date, System displays an error.

Mini Statement

Manager

F43 If account no is invalid, System displays an error

F44 If transaction not exist in system, System displays an error.

F45 If account not associate with manager itself, System displays an error.

Customer

F46 If account no is invalid, System displays an error.

F47 If account associate with customer itself, System displays an error.

Balance Enquiry

Manager

F48 If account no is invalid, System displays an error

Customer

F49 If account no is invalid, System displays an error

3.4 Classes / Objects

3.5.1.1 Attributes

3.5.1.2 Functions

3.5 Non-Functional Requirements

Nil

3.6 Inverse Requirements

Nil.

3.7 Design Constraints

Many of the RR Bank users may not have adequate computer knowledge to use the site. Hence, System must be intuitive and easy to understand.

3.8 Logical Database Requirements

Nil

3.9 Other Requirements

Nil

4. Analysis Models

Nil

5. Change Management Process

Changes to the SRS either from the development, testing team or the client side will be communicated to the project sponsor Mr Krishna Rungta.

Any change made to the SRS will require a sign off from the Development lead, QA lead and the client.

Once approved changed will be made to the SRS and the new SRS will be circulated to all stakeholders

A. Appendices

Nil