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## WebLoanApp Application

Product Line:	Loan Management
Release:	Moonlight
Product Manager:	Oleg Vertlib
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Distribution List	
Feature Product Manager:	Oleg Vertlib
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## Revision History

Date (mm/dd/yy)	Author	Version	Description
09/08/2022 1:22 PM	Mamata Lama	2.01	First Update
10/08/2022 3:15 PM	Mamata Lama	2.02	Update based on requirement change
11/08/2022 11.30 AM	Mamata Lama	2.03	Update after review

## Review

Date	Author	Version	Reviewed By
2022-08-15	Mamata Lama		Igor Gudhov

## Related Documentation

Functional requirements for WebLoanApp Application are available on:

<http://webloanappsoft/sites/PM/Features.aspx>

WebLoanApp Application Internal Design document can be found on

<http://webloanappsoft/sites/RD/oroject.aspx> in the X project Introduction

The scope of this document is to provide testing framework to fully test WebApp software. The test cases will be created and used to test an application as a part of a smoke, system and regression test.

## 1 Introduction

### 1.1 Functional Overview (Description of the product)

Loan Prequalifier consolidates many different functions of loan management processes into a single integrated solution. WebLoanApp is a digital platform that helps add users and customers to the database for using the loan services from a bank. Furthermore, the process involves calculating interest rates and adding more users from different locations depending on where the admin is located.

### 1.2 Current Release Scope

The Test Plan is designed to prescribe the scope, approach, resources, and schedule of all testing activities of a bank.

The plan identifies the items to be tested, the features to be tested, the types of testing to be performed, the personnel responsible for testing, the resources and schedule required to complete testing, and the risks associated with the plan.

### 1.3 Risks

This software supposes to be compatible with different web browsers such as Google Chrome, Safari, Mozilla Firefox, MS Edge, and many Open-Source Browsers. However, due to time constraints compatibility testing with the latest release of Chromium and Vivaldi won't be conducted. That creates a risk of not identifying potential compatibility problems.

### 1.4 Test Schedule

System familiarization	20/11 – 25/11/2022
System Test	26/11 – 20/12/2022
Documentation Test	20/12 - 25/01/2023

Test Schedule is comprised of major activities Test Planning and Test Execution for the entire WebLoanApp, which is calculated as follows:

#### 1.4.1 Test Planning

*Assumptions:*

Timeframe required for requirements and design analysis = 10% of the Time to Write Test Cases

Timeframe for writing Test Plan = 10% of the Time to Write Test Cases

Timeframe for creating test planning materials = 10% of the Time to Write Test Cases

Timeframe for design and writing test cases:

Number of test cases calculation:

Log in Page - 9 test cases

Home Page - 14 test cases

Users Page - 13 test cases

Add User Page – 16 test cases

Customers Page – 14 test cases

Add Customers Page – 30 test cases

Total number of test cases = 96 test cases

Number of builds = 8

Number of testers on the project = 1

Test Case time = 7-10 minutes per bug (0.12 – 0.16 hour)

So, Average Test Case time = 0.14 hour

*Calculation:*

Time Total Timeframe to write Test Cases per build = Total number of test cases \* Test Case  
= 96 \* 0.14 hour = 13.44 hours per build

So, **Total Test Planning Time = 1.3 \* Total timeframe to write Test Cases = 1.3 \* 13.44  
= 17.47 hours**

#### 1.4.2 Test Execution

*Assumptions:*

number of builds = 8

number of bugs = 50

number of test cases = 96

Test Case execution time = 7-10 minutes per bug (0.12 – 0.16 hour)

So, Average Test Case execution time = 0.14 hour

number of testers on the project = 1

estimate time to report a bug = 10 min (0.17 hour)

*Calculations:*

**Total timeframe to execute test cases = Number of builds \* Total number of test cases  
per build \* Average Test Case execution time  
= 8 \* 96 \* 0.14 hours = 107.52 hours**

**Timeframe to report bugs and verify fixes = 2 (Report + Verify) \* 0.17 hours (estimate  
time to report a bug) \* 50 (number of bugs) = 17 hours**

Now,

$$\begin{aligned} \text{Total Test Execution Time} &= 1.5 \times (\text{Time to Execute Test Cases} + \text{Time to Report Bugs And Verify Fixes}) \\ &= 1.5 * (107.52 + 17) = 186.78 \text{ hours} \end{aligned}$$

$$\begin{aligned} \text{Total Testing Time} &= \text{Total Test Planning Time} + \text{Total Test Execution Time} \\ &= 17.47 \text{ hours} + 186.78 \text{ hours} = 204.25 \text{ hours} \end{aligned}$$

Testers usually can only write up to 6 hours test cases per day for preparing status reports, attend meetings, emails, and other communications. So,  $204.25/6 = 35 \text{ days}$  **approximately to do the complete testing.**

### 1.5 *Total Resource Estimates*

Total Conduct Time: 35 days

Total Personnel: 1 person

### 1.6 *Test Strategy*

The test strategy consists of a series of different tests that will fully exercise the loan management system. The primary purpose of these tests is to uncover the system's limitations and measure its full capabilities. A list of the various planned tests and a brief explanation follows below.

#### 1.6.1 *Smoke Test*

The smoke test will be performed daily on each new build to define if it stable enough for further testing

#### 1.6.2 *Unit Test*

The unit test will be performed once a week to determine which statements have been executed at least once. This will include temporary programs, namely stubs and drivers to enable testing to check if the user's module and customers module work together in the system.

#### 1.6.3 *System Test*

The System tests will focus on the behaviour of the loan management system. User scenarios will be executed against the system as well as screen mapping and error message testing. Overall, the system tests will test the integrated system and verify that it meets the requirements defined in the requirements document.

#### 1.6.4 *Bug Reporting*

All bugs should be reported and tracked using the company Defect Tracking System. Triage meetings to assign priority should be held daily during the test execution stage.

#### 1.6.5 *Entry Criteria for Test Execution*

- All Functional Design documents have been signed off

- All Test cases and other test supporting documents have been completed and approved
- All test data requirements have been identified and test data has been mapped to the test cases
- Test environments have been setup as per the application requirements
- Test management tool has been setup with required accesses to all testers

#### 1.6.6 Exit Criteria for Test Execution

- All Test scripts/cases need to be run at least once
- All defects irrespective of the severity must be reported to the stakeholders
- All defects with severity Critical, High, Medium need to be fixed and retested successfully. (NOTE. All minor/cosmetic defects can be deferred to be fixed in later stages)
- All defects need to be moved to terminal stages such as Closed, Non-Defect, and Deferred. No defect must be in any stage other than the terminal stages.
- All regression defects fixed and retested
- Passed to a planned ratio of the tests should be at least 95%
- All Functional Design documents have been signed

### 1.6 Tools

The following testing tools will be utilized during the project:

- Elementool Defect Tracking System
- TestLink Test Management Utility
- UFT automation tool for functional and regression testing
- WebLOAD automation tool for performance and stress testing
- LAN Gigabit and an internet line with the speed at least 5 Mb/s

### 1.7 Environment Requirements

#### 1.7.1 Workstations

3 IBM compatible PCs (one with Win10, one with Win11, one with LINUX/Ubuntu), 1 MAC

3.5 GHz processor (minimum)

IE, Mozilla Firefox, Google Chrome, Opera, Safari

8 Gb RAM

512 Gb Hard Drive

A network-attached printer

## 2 Test Coverage

### 2.1 Areas of Independent Testing

2.1.1 Graphical User interface

2.1.2 Database Server

2.1.3 Windows integration

2.1.4 Software compatibility

2.1.5 Printing/ Page Setup

#### *2.1.5.1 Size*

Case1 A4

Case2. Executive

Case3. Legal

Case4. Letter

#### *2.1.5.2 Orientation*

Case1. Landscape

Case2. Portrait

#### *2.1.5.3 Margins*

Case1. Overlapping horizontal margins

Case2. Overlapping vertical margins

Case3. Zero left margin

Case4. Zero right margin

Case5. Zero top margin

Case6. Zero bottom margin

Case7. Max left margin

Case8. Max right margin

Case9. Max top margin

Case10. Max bottom margin



2.1.5.4 Header

2.1.5.5 Footer

2.1.6 About dialog box

2.1.7 Login

2.1.8 User Search

2.1.9 Customer Search

## 2.2 Objects and their Properties

### 2.2.1 Users

- Username
- Password
- First Name
- Last Name
- Company
- Phone
- E-mail

### 2.2.2 Customers

- Username
- Password
- First Name
- Last Name
- Street
- City
- Province
- Zip/Postal Code
- Phone
- E-mail
- Income Amount
- Debt Amount
- Loan Terms
- Prequalification Letter

### 2.2.3 Object Searches

- Cut
- Copy
- Paste
- Delete
- Backspace
- Select (highlight)
- Select All

- *User search*
- *Customer search*

#### 2.2.4 Admin

- *Login name*
- *Login Password*
- *Branch*
- *Logout* -

### 2.4 Methods

#### 2.4.1 Users

- *Add*
- *Edit*
- *Delete*
- *Print*
- *Save*
- *Select*

#### 2.4.2 Customers

- *Add*
- *Edit*
- *Delete*
- *Print*
- *Save*
- *Select*

#### 2.4.3 Searches

- *Customer search*
- *Users search*

#### 2.4.4 Admin

- *Login*
- *Logout*

## 3 Test Cases

Provided at the end of this document.

### Matrix using the boundary conditions technique with “Corner Approach”

Test Case #	Age	Height	Education	Driving Certificate	Driving Medical Form	Explanation
1	29	180	Yes	Surface-Supplied	Yes	(Max+min)/2 for all conditions + covers education, driving certificate and medical form = Yes
2	18	170	Yes	Open Water Scuba	Yes	Min for all conditions + covers education, driving certificate and medical form = Yes
3	39	190	Yes	Surface Supplied	Yes	Max for all conditions + covers education, driving certificate and medical form = Yes
4	17	180	Yes	Open Water Scuba	Yes	Min-1 for Age
5	18	169	Yes	Surface Supplied	Yes	Min-1 for Height
6	18	170	No	Open Water Scuba	Yes	Missing High School Diploma
7	18	170	Yes	None	Yes	Missing Driving Certificate
8	18	170	Yes	Open Water Scuba	No	Missing Driving Medical Form
9	40	170	Yes	Surface Supplied	Yes	Max+1 for Age
10	18	191	Yes	Open Water Scuba	Yes	Max+1 for Height

### Decision Table for a Community College Application

	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7	Rule 8
<b>Conditions</b>								
Is the applicant 17 years or older?	Y	N	Y	N	Y	N	Y	N
Does the applicant have Secondary School Diploma?	Y	Y	N	N	Y	Y	N	N
Has the applicant passed an entrance exam?	Y	Y	Y	Y	N	N	N	N
<b>Actions</b>								
Eligibility	Y	N	N	N	N	N	N	N

## State- Transition Table

Current State	Event	Action	Next State
Off	Turn faucet on	Water on	On
Off	Turn faucet off	--	Off
On	Turn faucet off	Water off	Off
On	Turn faucet on	--	On

## Matrix for boundary conditions with “corner” approach for “Add Customer Personal Data”

Test Case #	Title	First Name	Last Name	City	State/ Province	ZIP/Postal Code	Description	Expected Results
1	From the drop-down list	1 char	1 char	1 char	2 char	5 char	Contains min valid values for all conditions	User is created
2	From the drop-down list	32 char	32 char	32 char	3 char	7 char	Contains max valid values for all conditions	User is created
3	From the drop-down list	16 char	16 char	16 char	2 char	6 char	Contains average values for all conditions	User is created
4	<b>0 char</b>	16 char	16 char	16 char	2 char	6 char	No value for Title	Warning Message “Mandatory field ‘Title ’ is empty”
5	From the drop-down list	<b>0 char</b>	16 char	16 char	2 char	6 char	Contains min-1 value for First Name	Warning Message “Mandatory field ‘First Name ’ is empty”
6	From the drop-down list	16 char	<b>0 char</b>	16 char	2 char	6 char	Contains min-1 value for Last Name	Warning Message “Mandatory field ‘Last Name ’ is empty”
7	From the drop-down list	16 char	16 char	<b>0 char</b>	2 char	6 char	Contains min-1 value for City	Warning Message “Mandatory

								field 'City ' is empty"
8	From the drop-down list	16 char	16 char	16 char	1 char	6 char	Contains min-1 value for State/Province	Warning Message " 'State/Province' must be at least 2 and no more than 3 symbols"
9	From the drop-down list	16 char	16 char	16 char	0 char	6 char	Contains no value for State/Province	Warning Message " 'State/Province' must be at least 2 and no more than 3 symbols"
10	From the drop-down list	16 char	16 char	16 char	2 char	4 char	Contains min-1 value for Zip/Postal Code	Warning Message " 'ZIP/Postal Code' must be at least 5 and no more than 7 symbols and should contain letters and numbers only"
11	From the drop-down list	16 char	16 char	16 char	2 char	0 char	Contains no value for Zip/Postal Code	Warning Message " 'ZIP/Postal Code' must be at least 5 and no more than 7 symbols and should contain letters and numbers only"
12	<b>Not from the drop-down list (i/p from keyboard )</b>	16 char	16 char	16 char	2 char	6 char	Contains values from outside the drop-down list for Title	Warning Message "Select from the drop-down list only"
13	From the drop-down list	33 char	16 char	16 char	2 char	6 char	Contains max+1 value for First Name	Warning message "'First Name' must be no more than 32 symbols"

14	From the drop-down list	16 char	<b>33 char</b>	16 char	2 char	6 char	Contains max+1 value for Last Name	Warning message “Last Name’ must be no more than 32 symbols”
15	From the drop-down list	16 char	16 char	<b>33 char</b>	2 char	6 char	Contains max+1 value for City	Warning message “City must be no more than 32 symbols”
16	From the drop-down list	16 char	16 char	16 char	<b>4 char</b>	6 char	Contains max+1 value for State/Province	Warning Message “ ‘State/Province’ must be at least 2 and no more than 3 symbols”
17	From the drop-down list	16 char	16 char	16 char	2 char	<b>8 char</b>	Contains max+1 value for ZIP/Postal Code	Warning Message “ ‘ZIP/Postal Code’ must be at least 5 and no more than 7 symbols and should contain letters and numbers only”