
Online Charging System

System/Solution Requirements Specification (SRS)

TO:i2i
Address

FROM:
i2i
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Phone
Fax:
Web

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1 Document Overview

0.1. Scope & Purpose

The scope of this document is to provide system/solution requirements specification (SRS) tool for capturing of the System/Solution related to Account, CRM, OM and MW requirements in Waycell project.

1.2. Version Numbers & Standards

This Specification has been produced by the i2i Systems (i2i) following 3GPP specifications alike versioning scheme and follows the recommendations of “IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications” standard.

The contents of the present document are subject to continuing work and may be changed by i2i. Should the i2i modify the contents of the present document, it will be re-released with an identifying change of **release date** and an increase in **version number** as follows:

Version x.y.z

where:

x the first digit:

- 1 presented for information;
- 2 presented for approval;
- 3 or greater indicates approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

1.3. Audience

The document may be read by the below audience;

- Business/System Analysts
- Solution/System Architects

1.4. Document Structure and Special Conventions

N/A

1.5. Definitions, Symbols and Abbreviations

TERM	DESCRIPTION
OCS	Online Charging Solution
API	Application Programming Interface
BSS	Business Support System
DB	Database
GUI	Graphical User Interface
SAS	System/Solution Architectural Specification
SRS	System/Solution requirements Specification
CDR	Call Data Record
WA	Workaround
SMS	Short Message Service
MMS	Multimedia Messaging Service
FTP	File Transfer Protocol
CCR	Credit Control Request
CCA	Credit Control Answer
3GPP	Third Generation Partnership Program
UDR	Usage Data Record
MSISDN	Mobile Station International Subscriber Directory Number
IMSI	International Mobile Subscriber Identity
WS	Web Service
SOI	Service Oriented Interface
CMS	Content Management System
CRM	Customer Relations Management
OM	Order Management

References

1. Scope of Work
2. RFP Requirements

1. Assumptions, Restrictions and Exclusions

ID	Description
AS-01	
AS-02	
AS-03	
AS-04	
AS-05	
AS-06	
AS-07	
AS-08	
AS-09	
AS-10	
AS-11 (CR)	
AS-12 (CR)	

2. Overall Requirements Description

This section aims to provide a summary section binding all the subsequent more detailed sub sections of the document.

3.1. High Level Required Behavior and Functionality//

Use Case ID	Short Description
1	Successful Login
2	Unsuccessful Login
3	Successful Create Costumer
4	Unsuccessful Create Costumer
5	Successful Inquirebalance
6	Unsuccessful Inquirebalance
7	Forgot Password

3.2. Business Requirements (FROM RFP)

None

3.3. Postpone of Requirements

ID	Short Description
1	All used balance amounts to be shown on different screens with swipe feature on the Remaining Balance Screen.

4. Functional Requirements

Functional Requirement ID	Functional Requirement Description	Dependent Requirement ID
1	Web Login Screen must enable users to login with phone number and password. If the user is not a subscribed user before, the user should be able to click the "Register" button to move to Create User Screen. A "Remember Me" button should be available for frequent users. Subscribers who forgot their password should be able to click "Forgot Password" button to move to Help Screen.	
2	On Web Create User Screen new subscribers should be able to register by using their name, surname, phone number, mail and password. Subscriber must choose a packet while registering. A security question must be answered while registering.	
3	Web Help screen should enable subscribers to retrieve their password by entering their email address and answering previously answered security question.	
4	Android/IOS Login Screen must enable users to login with phone number and password. A "Remember Me" button should be available for frequent users. If the user is not a subscribed user before, the user should be able to click the "Sign Up" button to move to Create User Screen. Subscribers who forgot their password should be able to click "Forgot Password" button to move to Help Screen. A "Change User" button should enable users to switch between different subscriptions.	
5	On Android/IOS Create User Screen new subscribers should be able to register by using their name, surname, phone number, mail and password.	
6	Android/IOS Help screen should enable subscribers to retrieve their password by entering their email address and answering previously answered security question. A "Send SMS" should be available for this.	

4.1. Functional Requirements (Cont.)

Functional Requirement ID	Functional Requirement Description	Dependent Requirement ID
7	A subscriber that logs onto the Android/IOS application should reach the Main Screen where he/she must see remaining allowances and invoice information.	
8	Subscriber must be able to see his/her remaining Data, Minutes and SMS information on separate circular graphs on the Android/IOS application. Graphs should change color according to the remaining allowance.	
9	Subscriber must be able to see previous and current invoice information on the Invoice Information of the Android/IOS application.	
10	Subscriber that logs onto the Web application must be able to reach the Main Page and see remaining allowances and invoice information.	
11	Remaining Allowances section of Web application must display the remaining allowances (Data, Minutes, SMS) of the subscriber in separate circular graphs. Graphs should change color according to the remaining allowances.	
12	Invoice Information section of the Web application must display the current and previous invoices. Subscriber should be alerted for the invoices that has passed last payment date.	

4.2. Functional Requirements (Cont.)

Functional Requirement ID	Functional Requirement Description	Dependent Requirement ID
13	Subscriber must select a packet while registering.	
14	Packet prices and allowances are; EYECCELL 3GB => 3000 Minutes,3GB,3000 SMS ,30 Days,50 TL EYECCELL 5GB =>5000 Minutes,5GB,5000 SMS,30 Days,100 TL EYECCELL 7GB =>7000 Minutes,7GB,7000 SMS,30 Days, 120 TL EYECCELL 10GB =>10000 Minutes ,10GB ,10000SMS,30 Days,150 TL LAVANTA 500 Minutes,20GB,7000SMS,10 Days, 85 TL BİZONTELE15GB=>1000 Minutes,15GB,5000SMS,30 Days, 185 TL	
15		
16		
17		
18		

5.Solution Overview



Phone Number

Password

☐ Remember me

Login

[Forgot Password ?](#)

[Sign Up](#)

FIGURE-1: ANDROID/IOS LOGIN

Change User

User Info

Current Subs name

%xx
with number

Data

Package Name

When it Will ends



FIGURE-2: ANDROID/IOS USER INFO



Enter Your Mail to take a security code

Name

Surname


Phone Number

E-Mail

Password

Register

FIGURE 3-: ANDROID / IOS REGISTER



Enter Your Mail to take a security code

E-posta

Send Mail

FIGURE 4-ANDROID/IOS

5.2. Solution Overview (Cont.)



FIGURE 5- WEB CURRENT SUBSCRIPTION



FIGURE 6-WEB CREATE USER

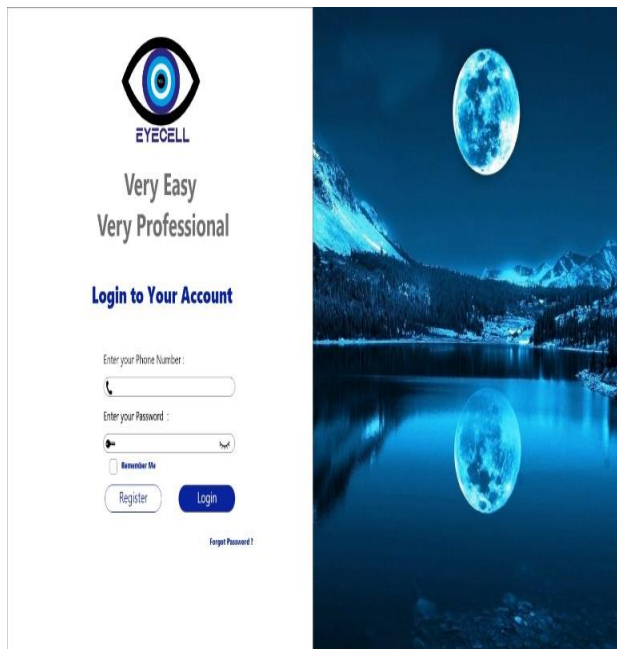
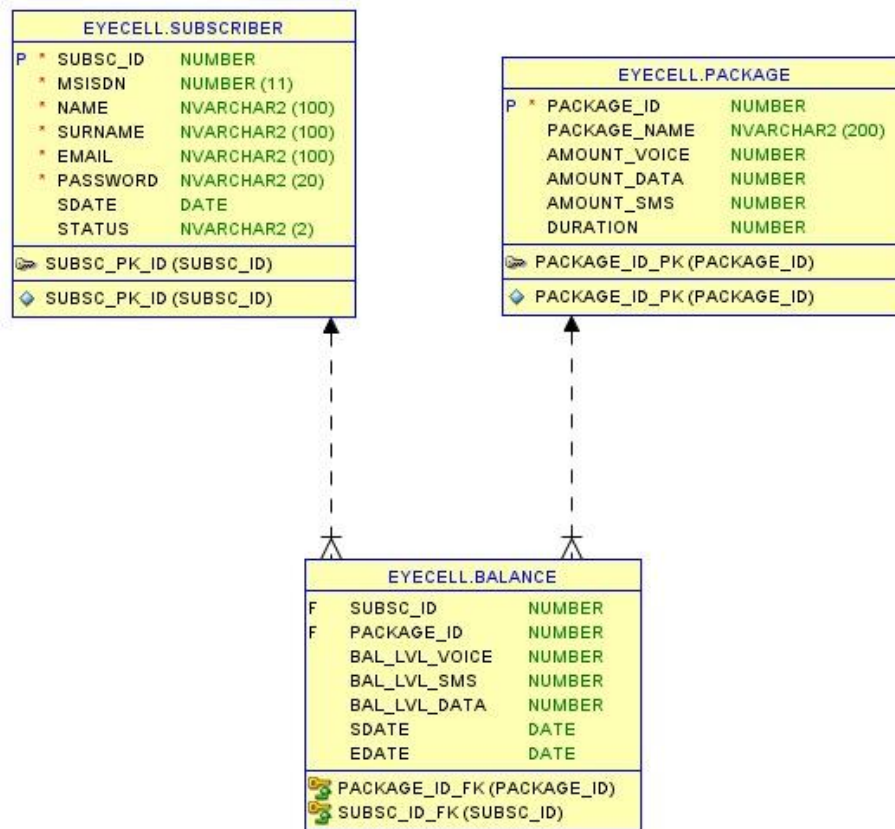


FIGURE 7-WEB LOGIN



FIGURE 8-WEB HELP

5.3. Solution Overview (Database)



5.4. High Level Design Details

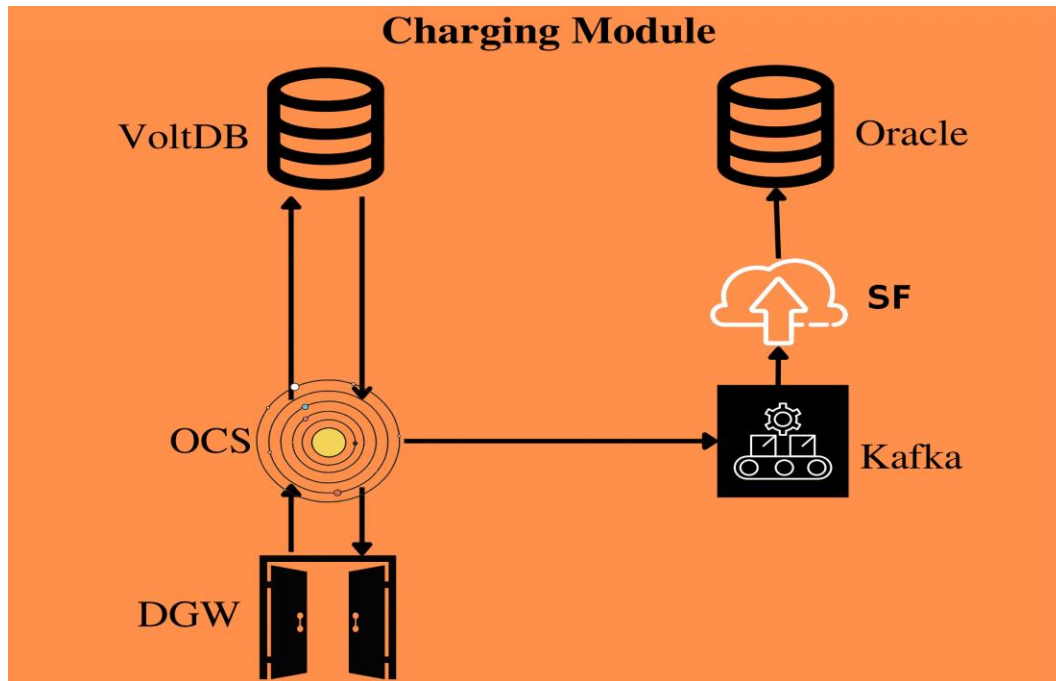


FIGURE 9- CHARGING MODULE

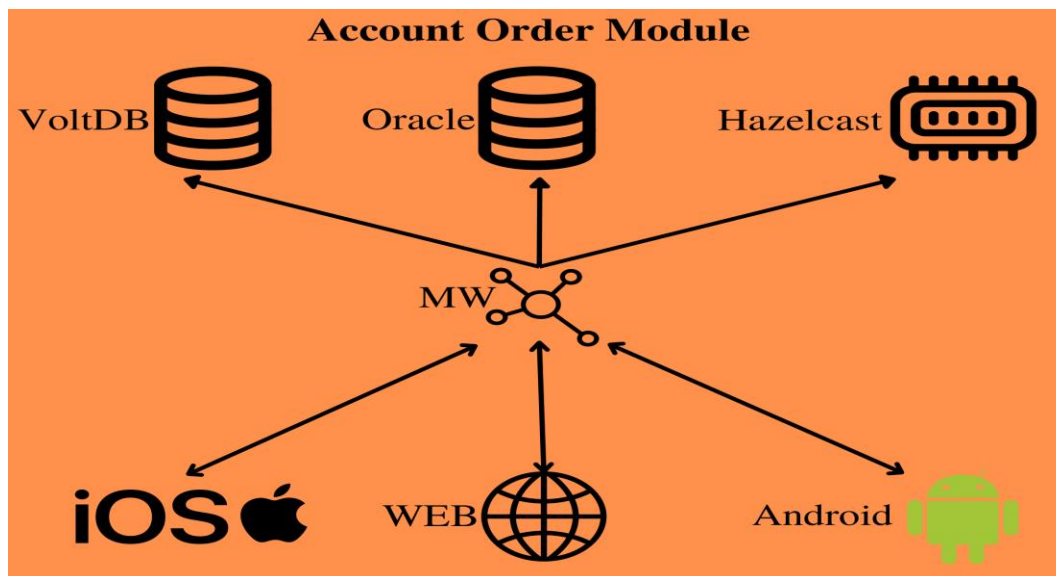


FIGURE 10-ACCOUNT ORDER MODULE

6.End to End Use Cases

6.1. Use Cases

6.1.1. Use Case 1

Summary	Successful Login
Impacted System Components	OCS, DGW, MW, HAZELCAST, VOLTDB, KAFKA
Pre-conditions	Subscriber must successfully register to the system to be able to login to the system successfully.
Post-conditions	Subscriber successfully logs onto the system and sees his/her invoice information.
Main Success Scenario	1-Subscriber enters his/her phone number and password information on the Login Screen and clicks Login button. 2-A check is done to match entered information with the registration data on the database. 3-Subscriber successfully logs onto the system.

Alternate Flows	-
Exceptions/Errors	1-Subscriber will not be able to login to the system if he/she enters phone number or password information incorrectly.
Open Items	-
Functional Requirements	1

6.1.2. Use Case 2

Summary	Unsuccessful Login
Impacted System Components	OCS, DGW, MW, HAZELCAST, VOLTDB, KAFKA
Pre-conditions	N/A
Post-conditions	N/A
Main Success Scenario	1-Subscriber's login information will not be matched with the registration data on the database when enters his/her phone number or password incorrect. 2-Subscriber will not be able to login.

Alternate Flows	-
Exceptions/Errors	-
Open Items	-
Functional Requirements	2

6.1.3 Use Case 3

Summary	Successful Create Costumer
Impacted System Components	OCS, DGW, MW, HAZELCAST, VOLTDB, KAFKA
Pre-conditions	Subscriber must have a packet.

Post-conditions	Subscriber successfully registers to the system.
Main Success Scenario	Subscriber registers to the system with his/her name, surname, email and password. Subscriber must have one of the available packets. Subscriber must answer a security question. Subscriber's registration data are recorded to the database.

Alternate Flows	-
Exceptions/Errors	Subscriber will not be able to register if there is missing or incorrect data. Subscriber will not be able to register without choosing an available packet.
Open Items	-
Functional Requirements	3

6.1.4 Use Case 4

Summary	Unsuccessful Create Costumer
Impacted System Components	OCS, DGW, MW, HAZELCAST, VOLTDB, KAFKA
Pre-conditions	N/A
Post-conditions	Subscriber will not be able to register.
Main Success Scenario	Subscriber will not be able to register if there is missing or incorrect data. Subscriber must choose an available packet. Subscriber will not be able to register without choosing an available packet. Subscriber must answer a security question.

Alternate Flows	-
------------------------	---

Exceptions/Errors	-
Open Items	-
Functional Requirements	4

6.1.4 Use Case 5

Summary	Successful Inquirebalance
Impacted System Components	OCS, DGW, MW, HAZELCAST, VOLTDB, KAFKA
Pre-conditions	Subscriber must be successfully logged onto the system.
Post-conditions	Subscriber successfully sees his/her remaining Data, Minute and SMS allowances.
Main Success Scenario	1-Subscriber successfully logs onto the system. 2-Subscriber's remaining balances are inquired from the database. 3-Subscriber successfully sees his/her remaining Data, Minute and SMS allowances.

Alternate Flows	-
Exceptions/Errors	-
Open Items	-
Functional Requirements	5

6.1.5 Use Case 6

Summary	Unsuccessful Inquirebalance
Impacted System Components	OCS, DGW, MW, HAZELCAST, VOLTDB, KAFKA
Pre-conditions	Subscriber must be successfully logged onto the system.
Post-conditions	Subscriber is not able to see his/her remaining Data, Minute and SMS allowances.
Main Success Scenario	<p>1-Subscriber successfully logs onto the system.</p> <p>2-There is an issue during inquiring remaining balances on the database and no data is returned.</p> <p>3-Subscriber is not able to see remaining allowances.</p>

Alternate Flows	-
Exceptions/ Errors	-
Open Items	-
Functional Requirements	6

6.1.6 Use Case 7

Summary	Forgot Password
Impacted System Components	OCS, DGW, MW, HAZELCAST, VOLTDB, KAFKA
Pre-conditions	Subscriber must be registered on the system previously.
Post-conditions	Subscriber carries on logging into the system with existing password.

Main Success Scenario	<p>Subscriber clicks the “Forgot Password” button on Login Screen.</p> <p>Subscriber enters his/her mail address and uses the previously answered security question to retrieve the existing password. Password will be sent to subscribers registered mail address.</p>
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Alternate Flows	Subscriber will be completely deleted from the system and will register with a new phone number.
Exceptions/ Errors	Subscriber will not be able to retrieve his/her password if unable to answer security question.
Open Items	-
Functional Requirements	7

6.2. UML DIAGRAM

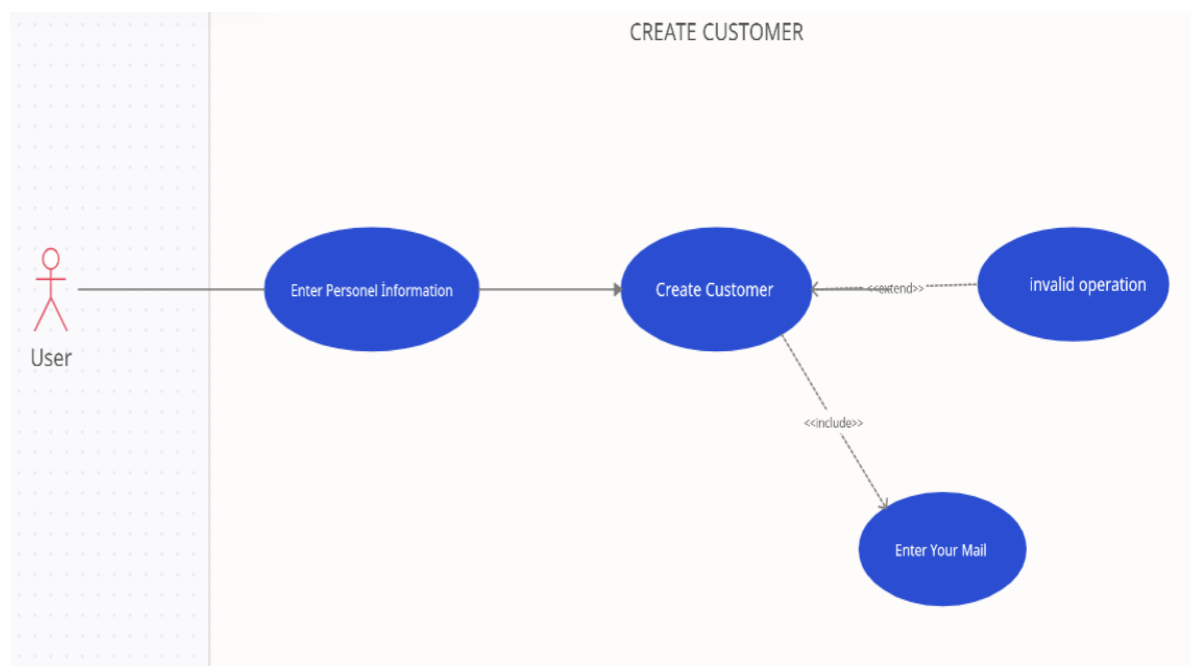


FIGURE-9: UML DIAGRAM (CREATE CUSTOMER)

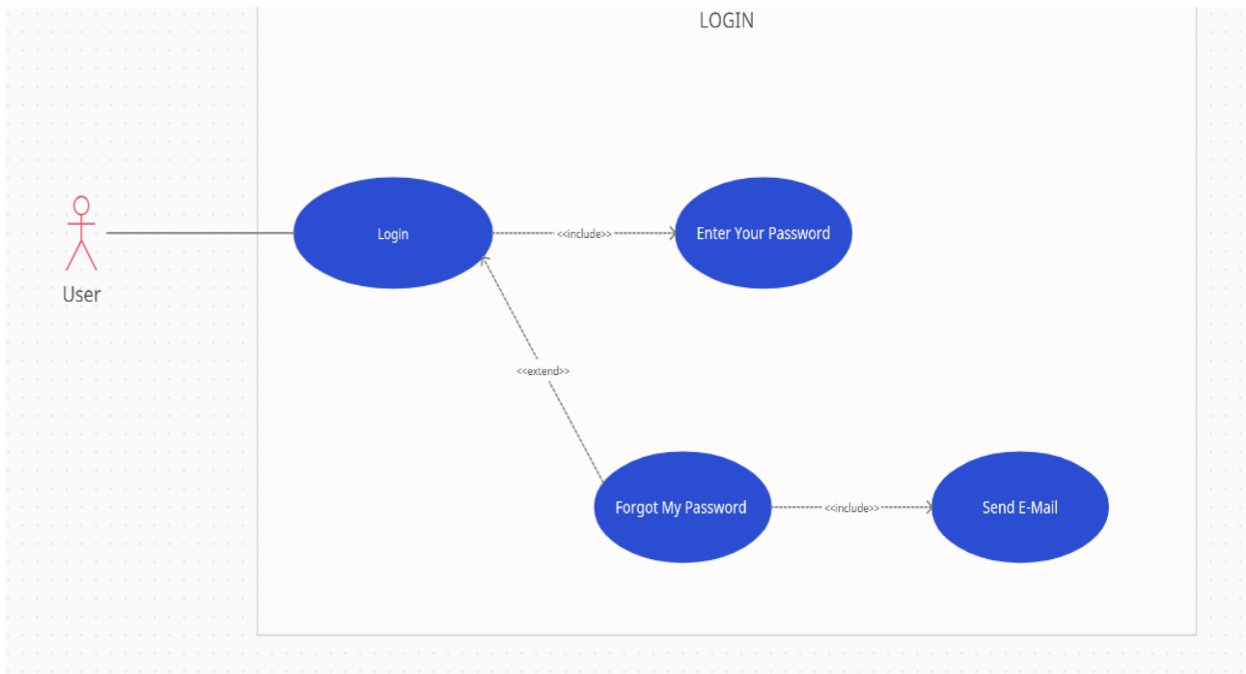


FIGURE-10: UML DIAGRAM (LOGIN)

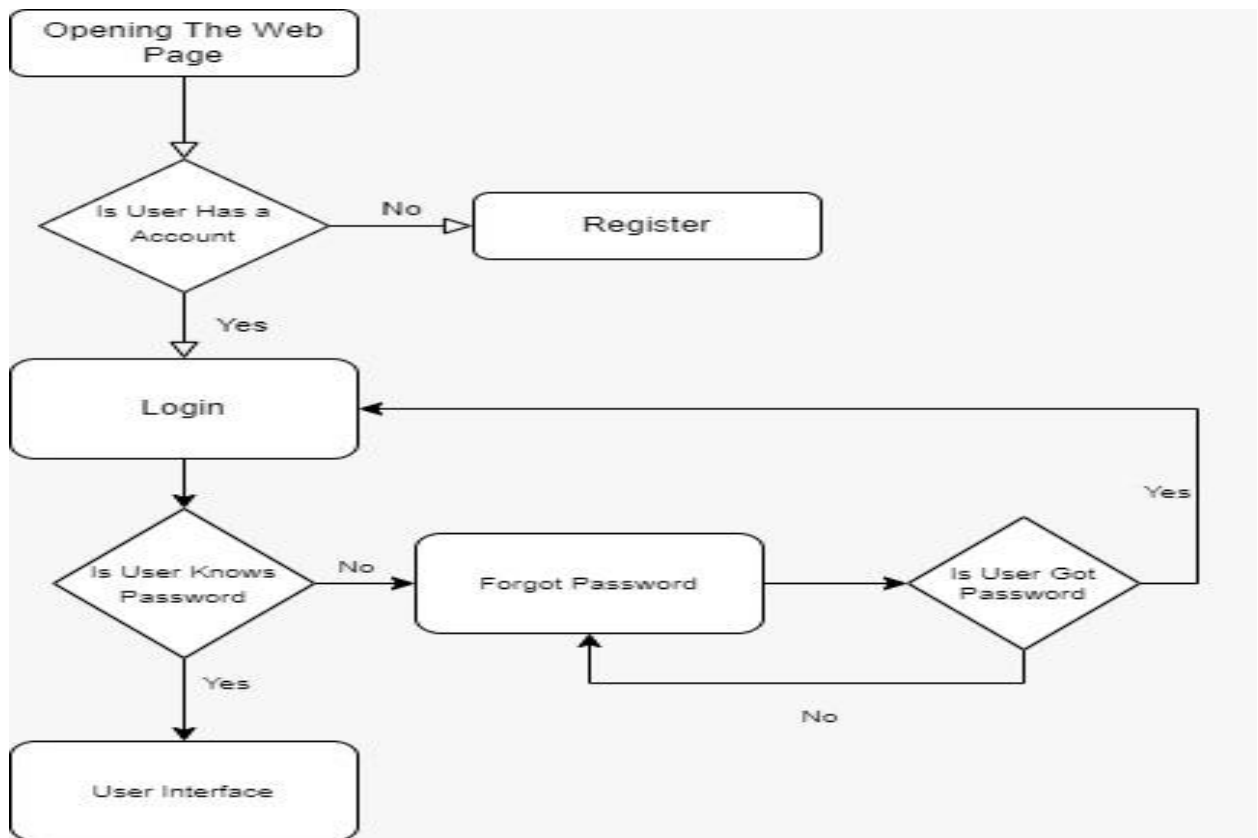


FIGURE –11: FLOWCHART

Appendix

Document Control

Superseded Documents

N/A

Change Control & Distribution

Owner	Hacı Ahmet Güden
Reviewer	
Approved By	
Distribution	
File Name	

Version History

Version	Change Descriptions	Author	Date
1.0.0	Initial Version	Hacı Ahmet Güden	16\08\2022
1.1.0			
1.2.0			

Approvals

This document requires the following approvals:

Name	Title	Date	Signature	Version