

Integrate Cucumber With Selenium WebDriver For Website Automation

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Introduction

- Test automation is critical for continuous delivery and continuous testing.
- Automating the web application it saves time and effort to test the application.
- Offer huge improvements in test efficiency and effectiveness.

Existing System

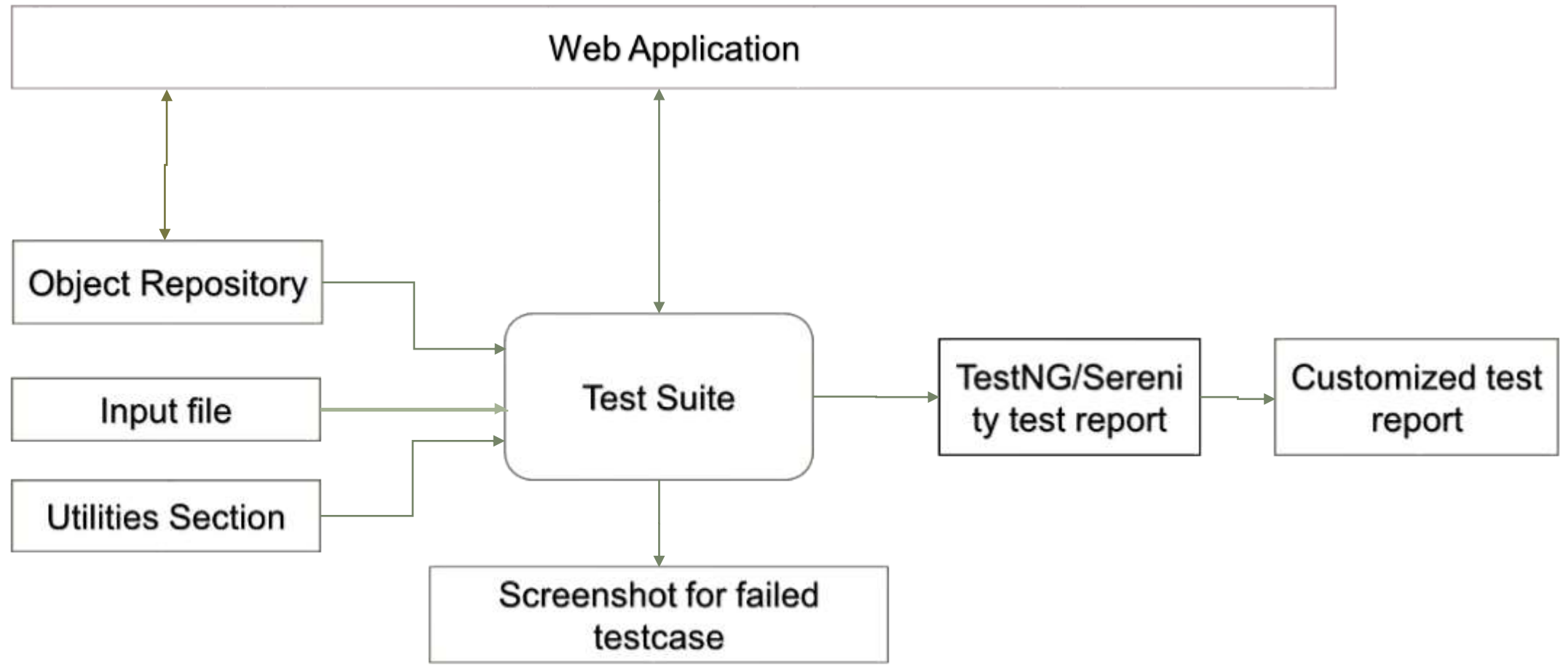
- Time consuming.
- Efficiency and accuracy of test results.
- Regression Test cases performed using manual tests are time-consuming.
- Low performance.

Objectives

- Developed a automation framework using cucumber, selenium ,TestNG
- Switch to maven project from java project.
- Done manual test on Mpowered Health consumer website functionalities and automate those functionalities.
- Generate report for all test scenarios using serenity report
- To capture screenshot of all failed testcases

Methodology

System Architecture



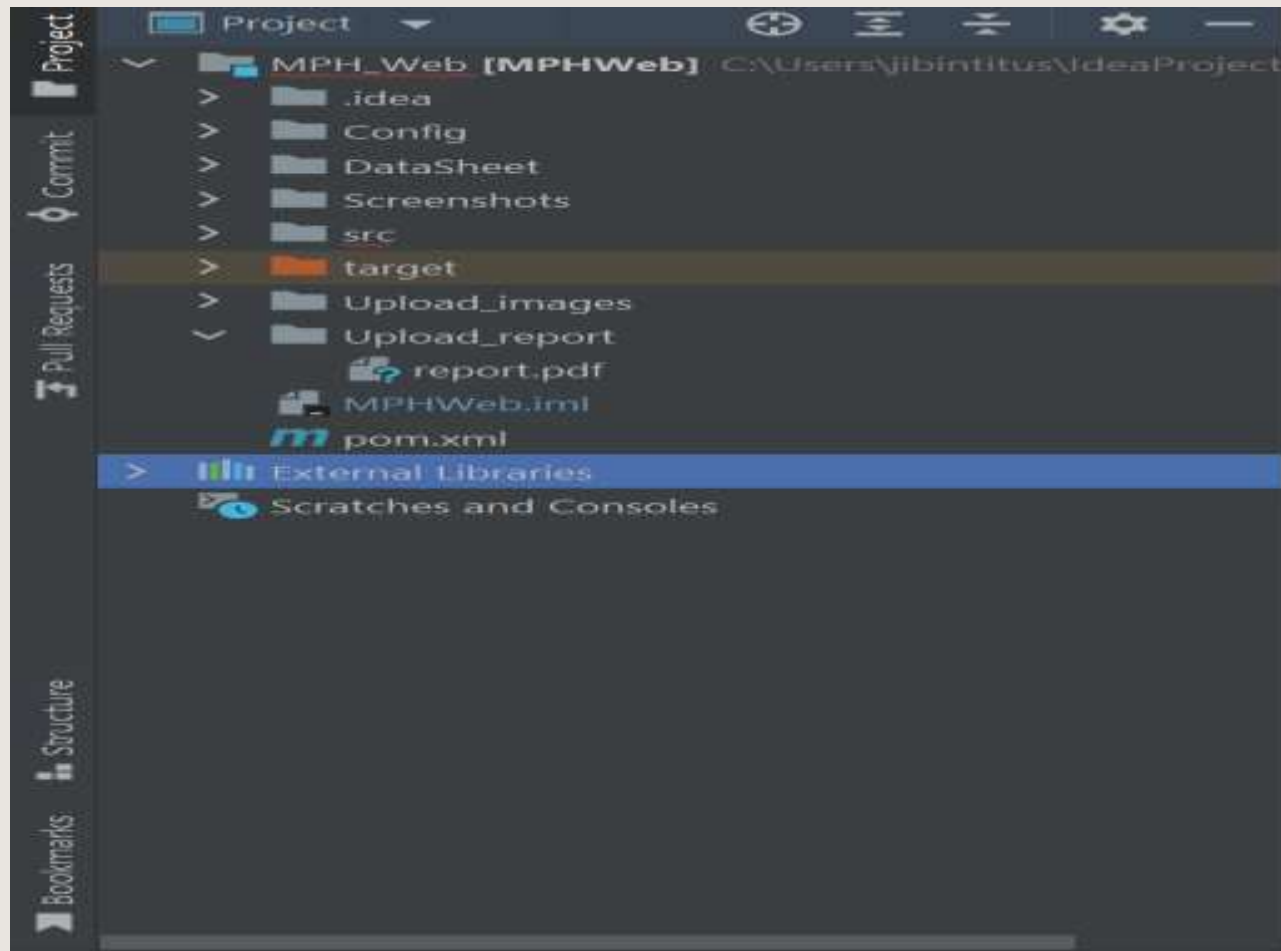


Fig:Architecture of proposed system

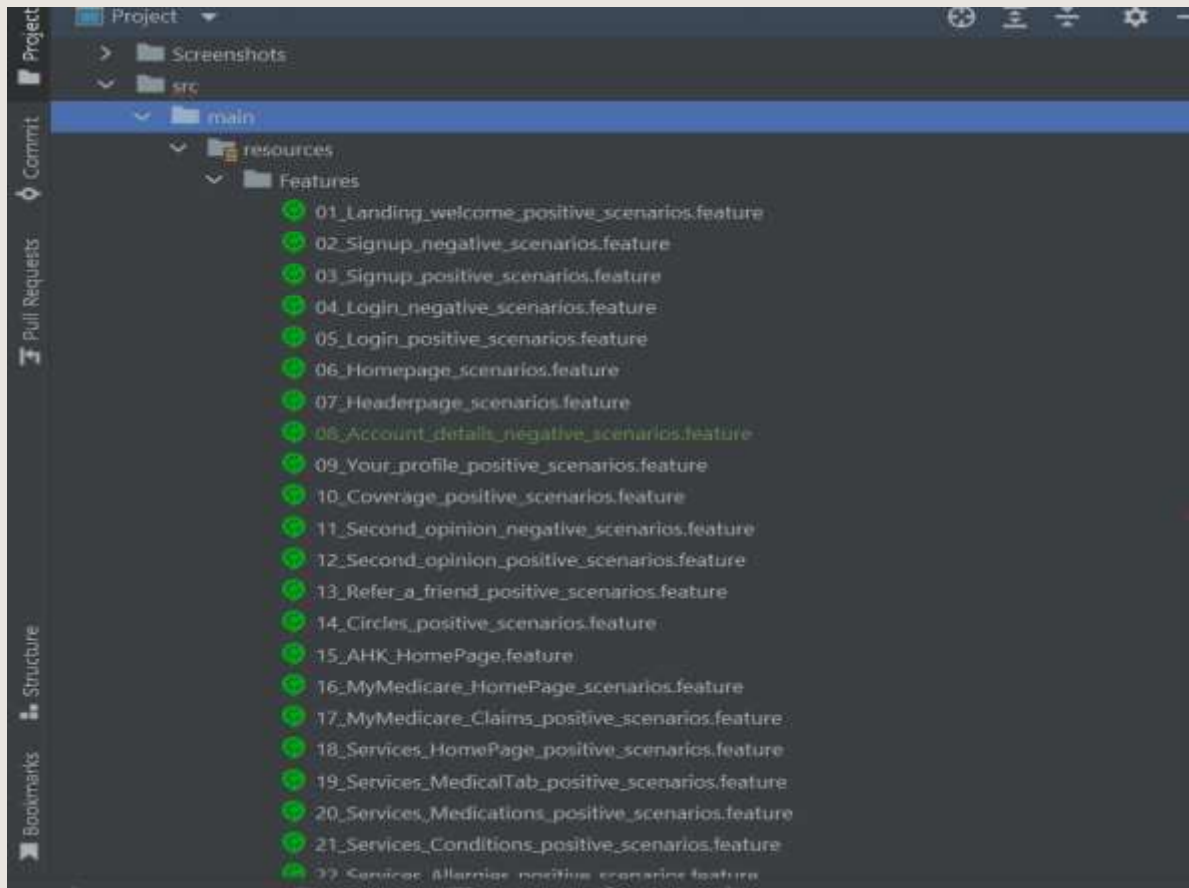


Fig:Feature files

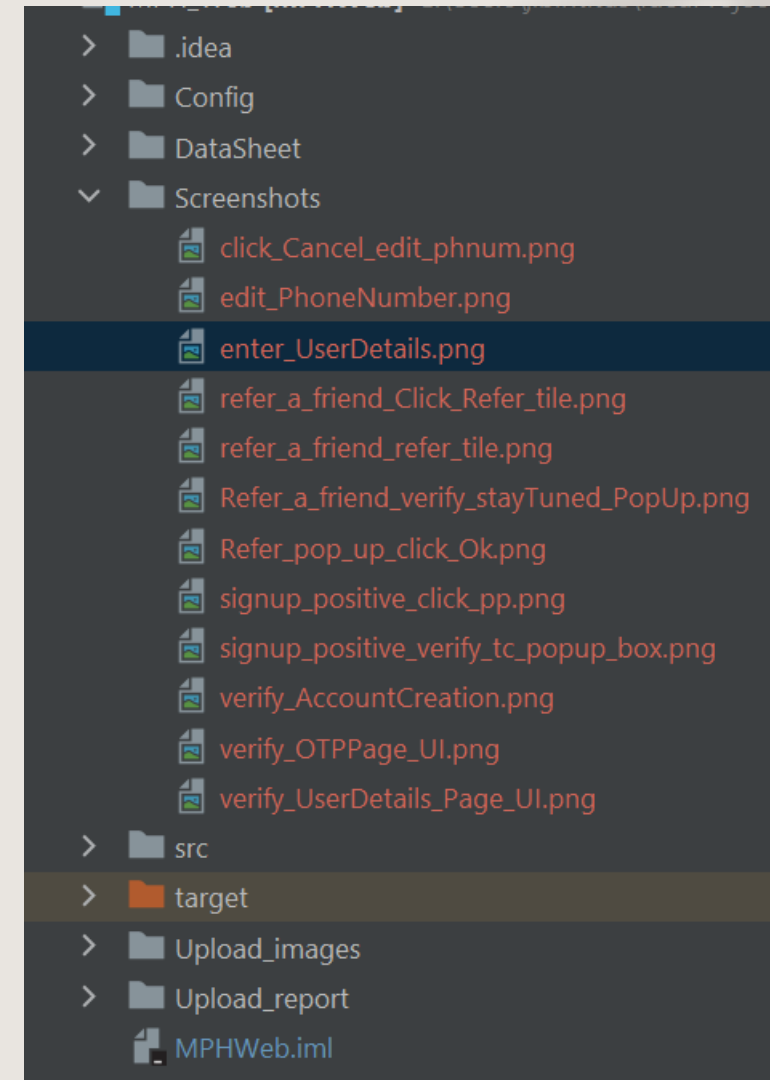


Fig : Screenshot for failed testcase

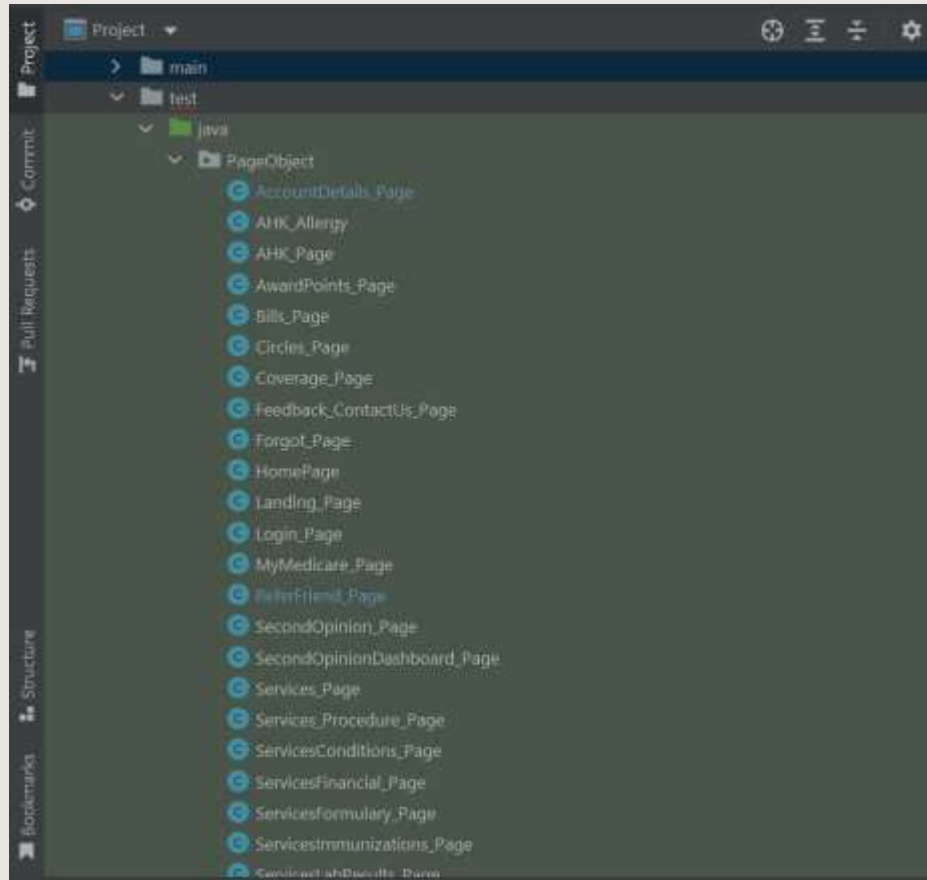


Fig: Object repository java files

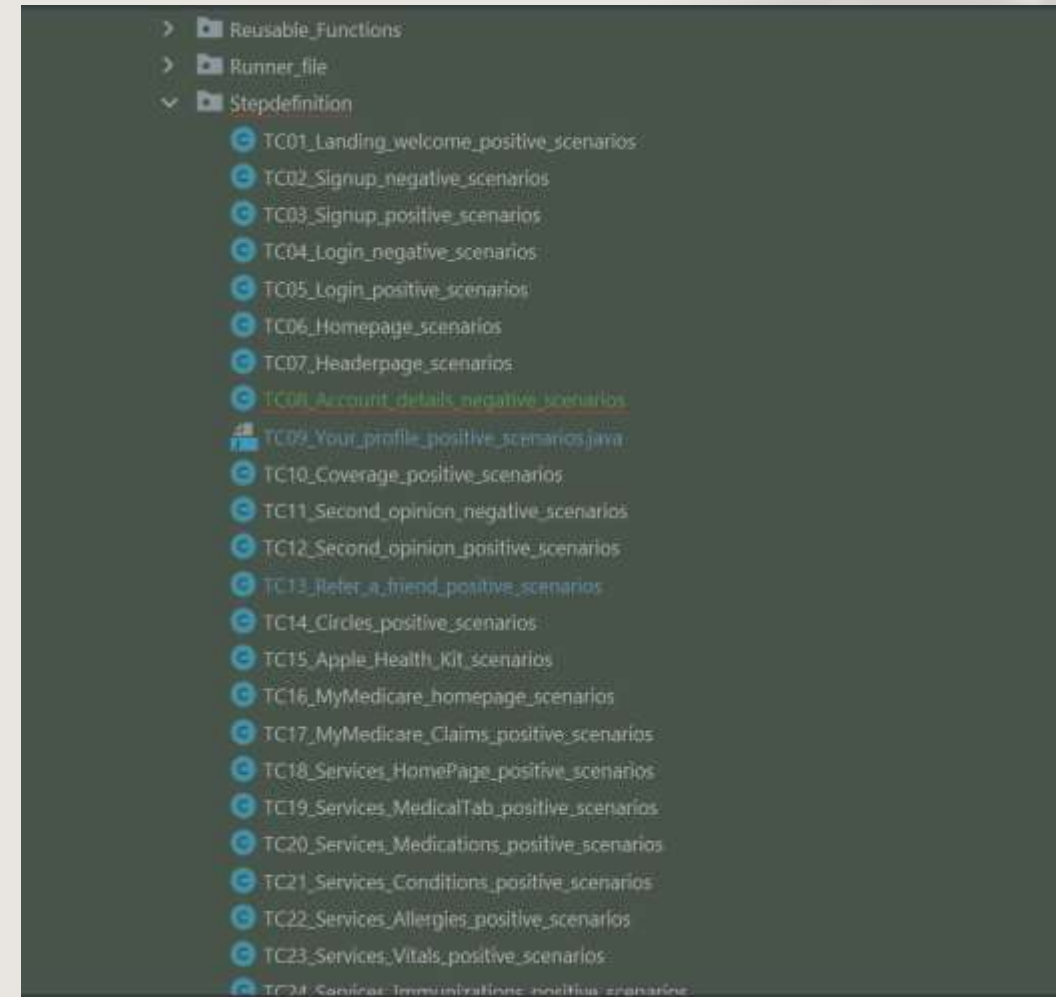


Fig: StepDefinition files

Tools and Technologies

1. IntelliJ IDEA

- Integrated Development Environment (IDE) used by developers to develop computer software.
- It is primarily designed and used for Java .
- It is also support various other programming languages like Kotlin, SQL, JavaScript, TypeScript.
- Support multiple frameworks like Android, Spring etc..
- It support VCS

2. Java

- Java is a high-level, class-based, object-oriented programming language.
- Java is platform independent

3. TestNG

- TestNG is automation test framework.
- TestNG is inspired from Junit and NUnit.
- It overcome the disadvantage of Junit and designed to make end to end testing easy.
- TestNG uses annotation(@).

4. Selenium

- Selenium is a free test automation framework that is used for automating web based application.
- It support multiple browsers, programming languages and platforms
- Selenium WebDriver tool is used to automate web application testing to verify that it work as excepted.

5. Cucumber

- Cucumber is a tool based on Behaviour Driven Development(BDD) framework.
- Gherkin is the language used by cucumber tool.
- Gherkin language uses several keywords to define the behaviour of application. Such as Feature, Scenario , Given, When, Then etc...

Feature: Validation on refer a friend functionality

Background: Open the browser and land on login page

Given Launch the browser

When Login to mph

#User must click on the refer a friend and navigated to refer a friend page

Scenario: Verify refer a friend tile under home page

Then Verify refer a friend text and logo

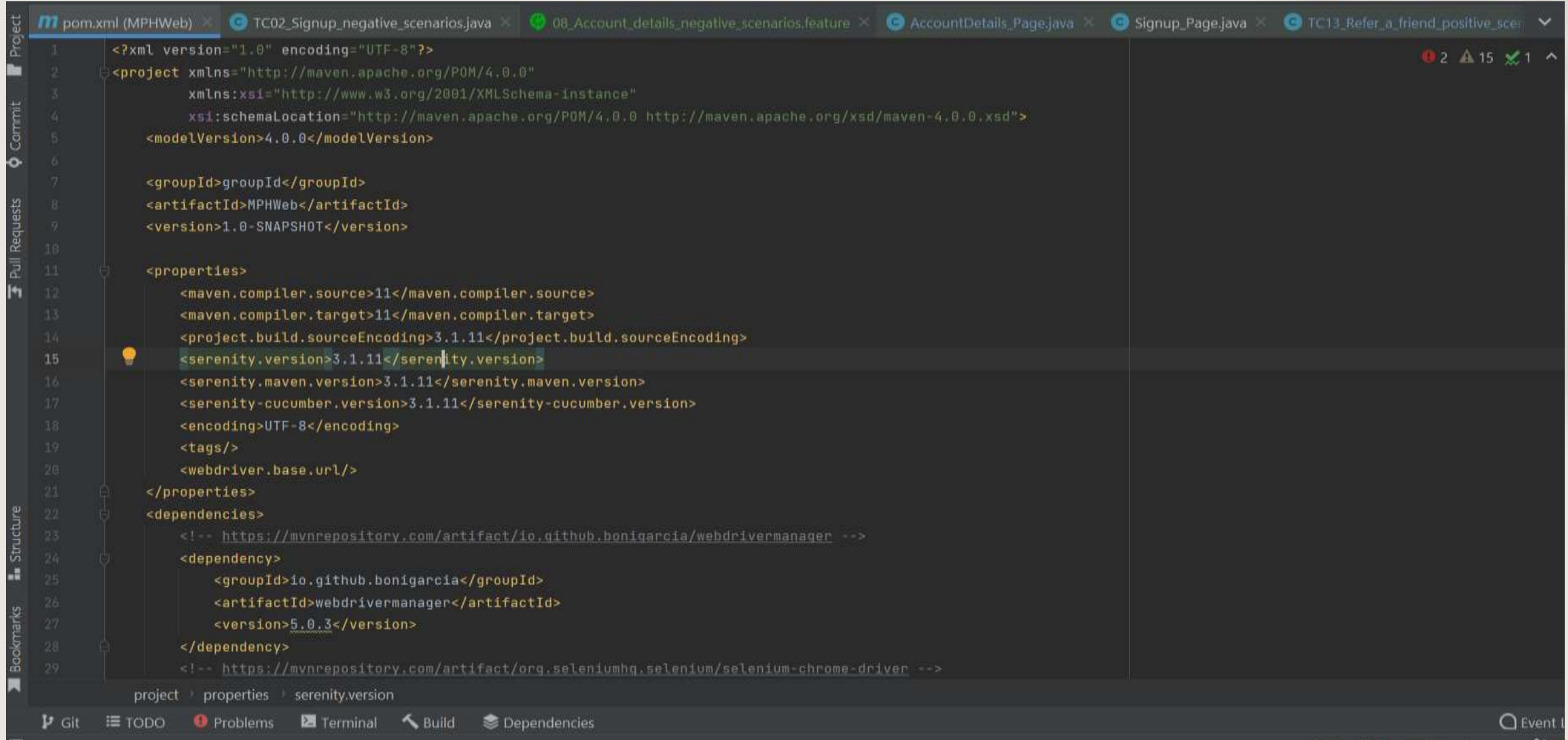
And logout

And close the browser

6. Maven

- Maven is a build automation tool used primarily for Java projects.
- Maven project is hosted by Apache software foundation.
- Maven project structure and content are declared in an xml file.
- POM.xml is the fundamental unit of entire maven system.

POM.xml



```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <groupId>groupId</groupId>
  <artifactId>MPHWeb</artifactId>
  <version>1.0-SNAPSHOT</version>

  <properties>
    <maven.compiler.source>11</maven.compiler.source>
    <maven.compiler.target>11</maven.compiler.target>
    <project.build.sourceEncoding>3.1.11</project.build.sourceEncoding>
    <serenity.version>3.1.11</serenity.version>
    <serenity.maven.version>3.1.11</serenity.maven.version>
    <serenity-cucumber.version>3.1.11</serenity-cucumber.version>
    <encoding>UTF-8</encoding>
    <tags/>
    <webdriver.base.url/>
  </properties>
  <dependencies>
    <!-- https://mvnrepository.com/artifact/io.github.bonigarcia/webdrivermanager -->
    <dependency>
      <groupId>io.github.bonigarcia</groupId>
      <artifactId>webdrivermanager</artifactId>
      <version>5.0.3</version>
    </dependency>
    <!-- https://mvnrepository.com/artifact/org.seleniumhq.selenium/selenium-chrome-driver -->
```

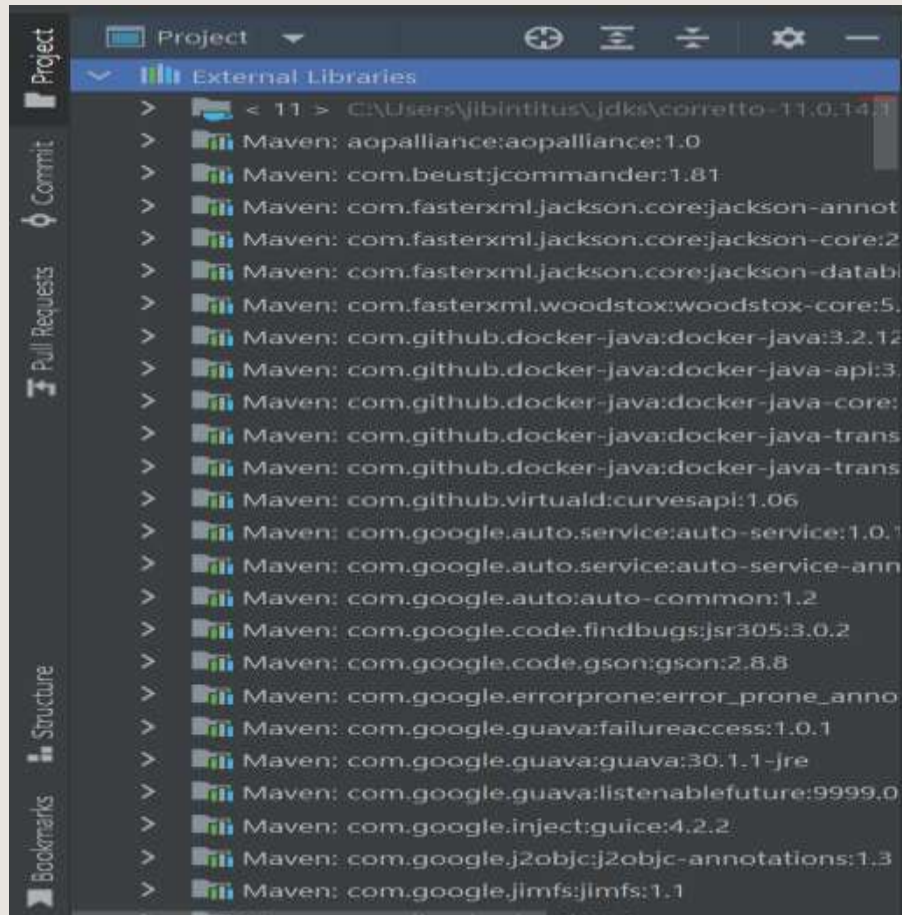


Fig : JAR files downloaded from Maven central repository

7. Serenity report

- Serenity BDD is a library that makes it easier to generate powerful report and living documentation features.
- Makes it easy to write, execute, and report on automated acceptance tests.

8. ChroPath

- ChroPath is considered as a development tool to edit, inspect and generate XPath and CSS Selectors.

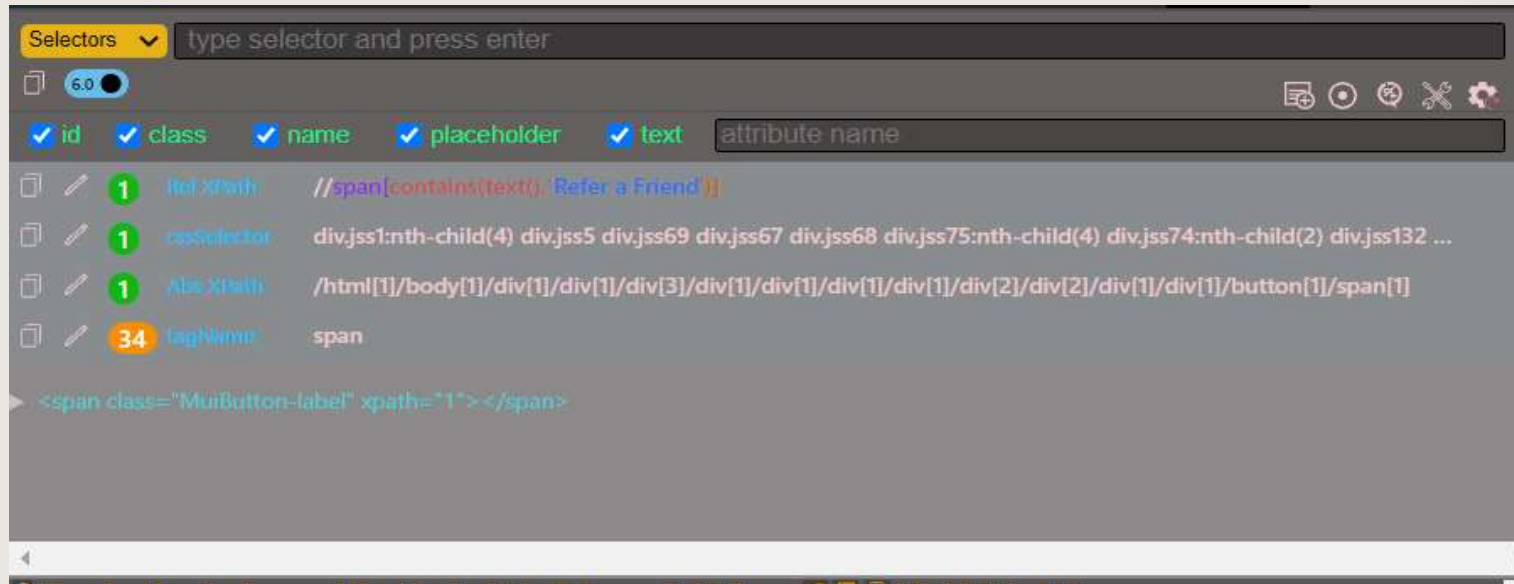


Fig :Capature xpath of Web element using ChroPath.

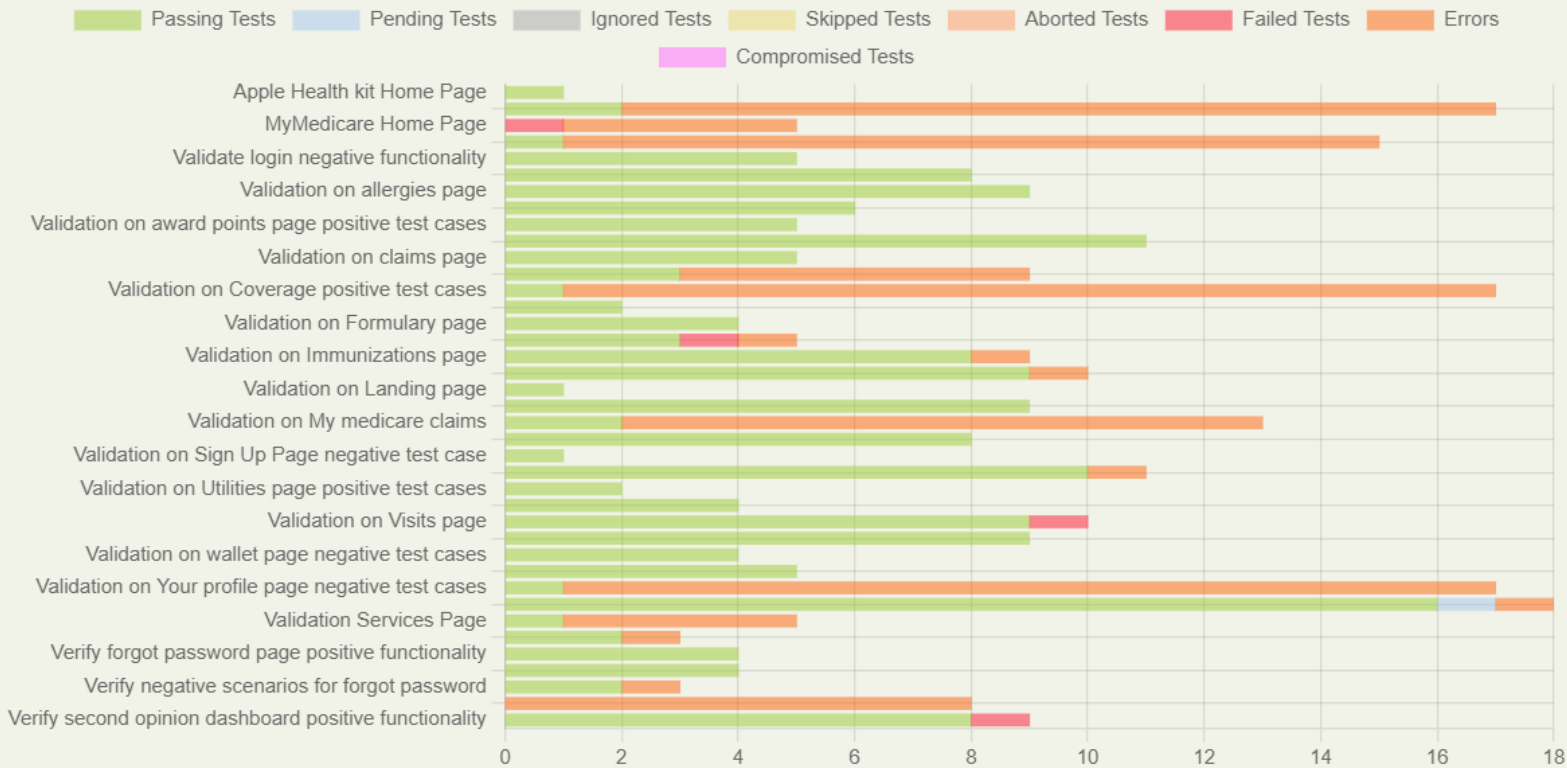
Result and Discussion



Fig :Serenity Report of test execution

Functional Coverage Overview

Features



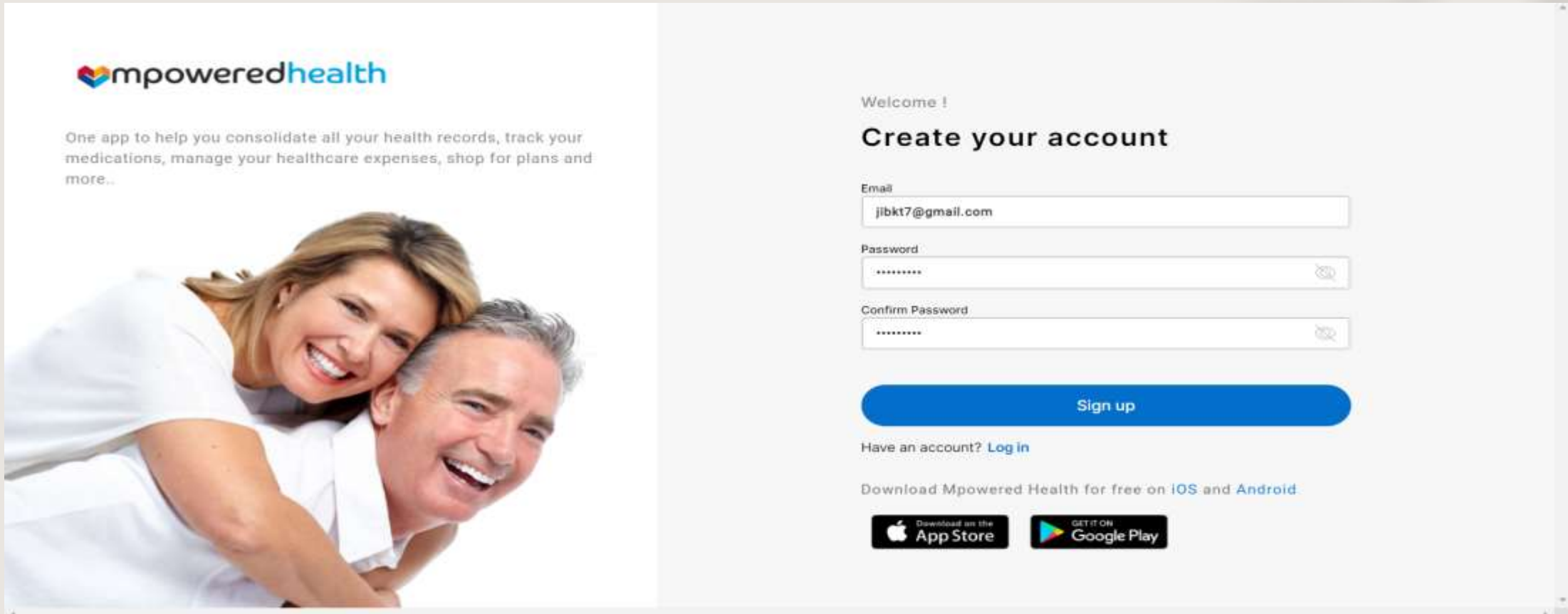
Key Statistics

Tests Started	Mar 03, 2022 06:22:31
Tests Finished	Mar 03, 2022 08:15:03
Total Duration	1h 52m 32s
Fastest Test	0ms
Slowest Test	1m 25s
Average Execution Time	23s
Total Execution Time	1h 52m 16s

Conclusion And Future Enhancement

- Screenshots will be captured if any failure of test cases.
- Serenity report generate living documentation that contains meaningful report for each Test.
- Automating the mobile application of Mpowered Health.

Screenshots



The image shows a screenshot of the Mpowered Health app landing page. On the left, there is a logo for 'mpoweredhealth' with a heart icon. Below the logo, text describes the app's features: 'One app to help you consolidate all your health records, track your medications, manage your healthcare expenses, shop for plans and more...'. A photograph of a smiling couple is positioned below the text. On the right, the 'Create your account' section is visible. It includes a 'Welcome !' message, followed by input fields for 'Email' (containing 'jibkt7@gmail.com'), 'Password', and 'Confirm Password'. Each password field has a toggle icon for visibility. A blue 'Sign up' button is located below the password fields. At the bottom of the right section, there is a link for 'Log in' and a message about downloading the app for free on iOS and Android, accompanied by the App Store and Google Play logos.

mpoweredhealth

One app to help you consolidate all your health records, track your medications, manage your healthcare expenses, shop for plans and more...

Welcome !

Create your account

Email
jibkt7@gmail.com

Password

Confirm Password

[Sign up](#)

Have an account? [Log in](#)

Download Mpowered Health for free on [iOS](#) and [Android](#).

[Download on the App Store](#) [GET IT ON Google Play](#)

Fig :Signup positive scenario – enter valid details



One app to help you consolidate all your health records, track your medications, manage your healthcare expenses, shop for plans and more..



Welcome !

Create your account

Email

● Email already exist... Try log in

Password

Confirm Password

Sign up

Have an account? [Log in](#)

Download Mpowered Health for free on [iOS](#) and [Android](#)



Fig :Signup negative scenario - User enters existing email id



One app to help you consolidate all your health records, track your medications, manage your healthcare expenses, shop for plans and more...



Welcome !

Create your account

Email

invalid email id

Password

Confirm Password

Sign up

Have an account? [Log in](#)

Download Mpowered Health for free on [iOS](#) and [Android](#)



Fig :Signup negative scenario –User enter invalid email address



One app to help you consolidate all your health records, track your medications, manage your healthcare expenses, shop for plans and more..



Welcome !

Create your account

Email

❗Email ID required

Password

❗Password required

Confirm Password

❗Re password required

Sign up

Have an account? [Log in](#)

Download Mpowered Health for free on [iOS](#) and [Android](#)



Fig :Signup negative scenarios testing – Blank fields



One app to help you consolidate all your health records, track your medications, manage your healthcare expenses, shop for plans and more..



Welcome Back!

Log In

Email/Phone

Password

[Forgot Password?](#)

[Log In](#)

Don't have an account? [Sign up](#)

Fig :Login positive scenario-Enter valid data



One app to help you consolidate all your health records, track your medications, manage your healthcare expenses, shop for plans and more..



Welcome Back!

Log In

Email/Phone

Invalid username or password.

Password

[Forgot Password?](#)

Log In

Don't have an account? [Sign up](#)

Fig: Login negative scenario- for invalid credentials

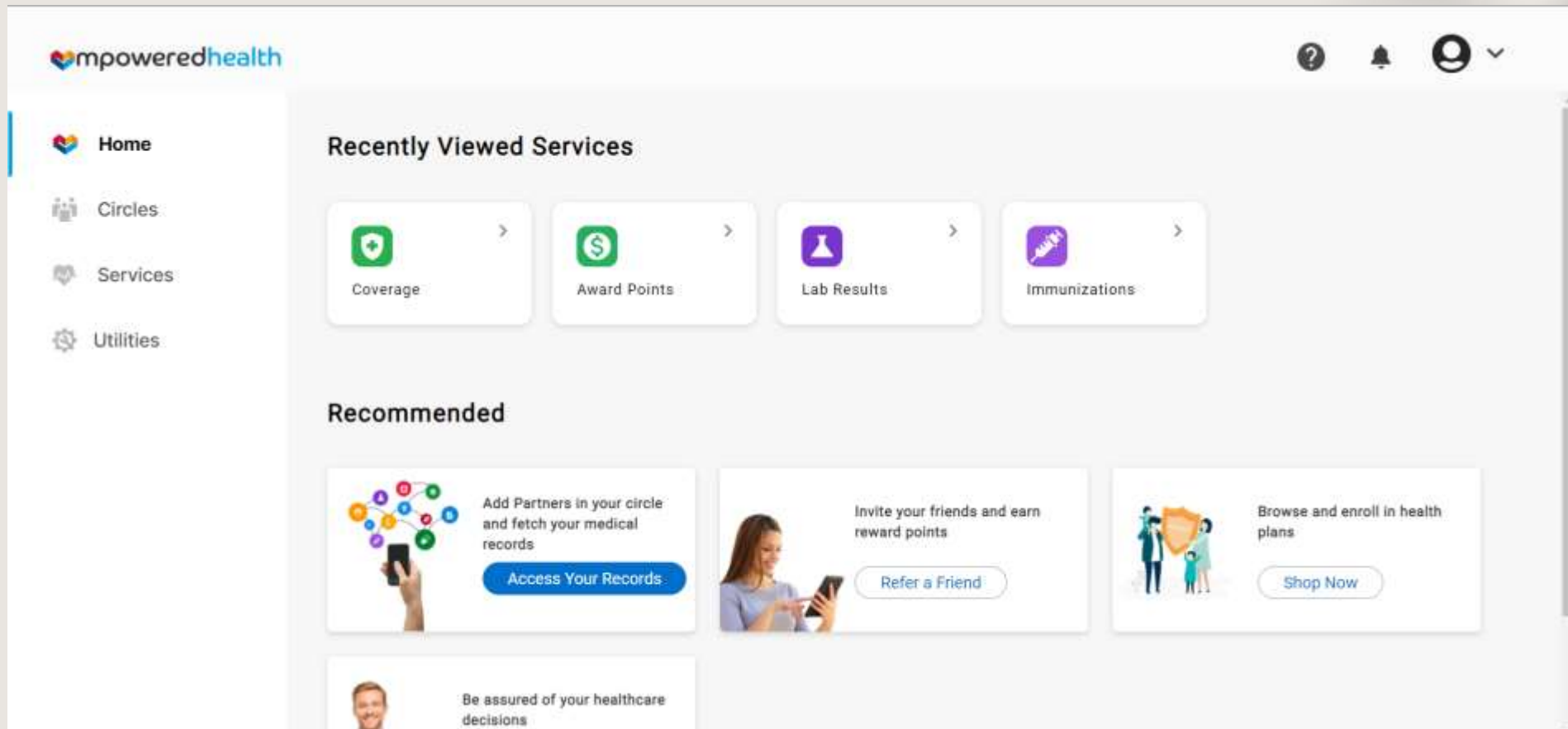


Fig :Home positive scenarios -navigated to home page

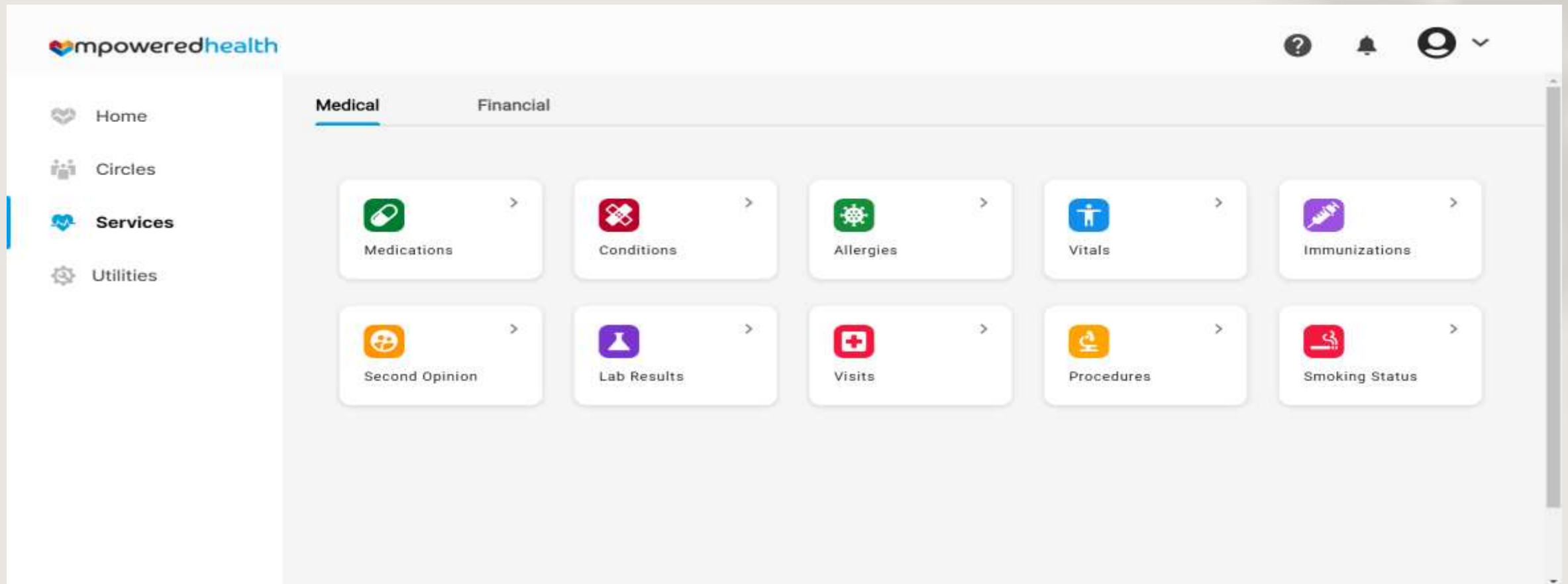


Fig :Services positive scenario-navigated to medication tab

Home

Circles

Services

Utilities

Services / Medications

Medications

All

All

All

Active

Inactive

Others

Add Data

Recorded on	Medication	Status	Doses	Data Source	
Aug 3, 2021	-	● Unknown	Take 125 mg by mouth daily for 3 days.	INDEPENDENC...	View Details
Jun 23, 2019	-	● Unknown	TAKE 2 CAPSULES BY MOUTH 3 TIMES A DAY...	INDEPENDENC...	View Details
Dec 8, 2020	-	● Unknown	Take 5 mg by mouth nightly.	INDEPENDENC...	View Details
Apr 1, 2019	-	● Unknown	1 each nightly . Inject with insulin daily	INDEPENDENC...	View Details
Dec 1, 2020	-	● Unknown	Take 10 mg by mouth at bedtime.	INDEPENDENC...	View Details
Dec 1, 2020	-	● Unknown	Take 2 mg by mouth as needed.	INDEPENDENC...	View Details
Mar 29, 2020	-	● Unknown	Inject 6 Units under the skin 3 (three) times a ...	INDEPENDENC...	View Details

Fig :Services medication positive scenario-navigated to medications

Home

Circles

Services

Utilities

Add Data



Add Data



Documents

Name of Medication*

Name of medicine

Type of Medication

Enter type of medication e.g. powder, tablets, capsule, etc

Code

Enter medication code

Frequency

Choose frequency

Dosage

Enter medication dosage e.g. 10 mg, 5 mg, etc

Start Date*

MM / DD / YYYY



Recorded by

Recorded by e.g. John Robertson

Status*

Choose status

Fig :Services medication positive scenario-navigated to medicationself reporting

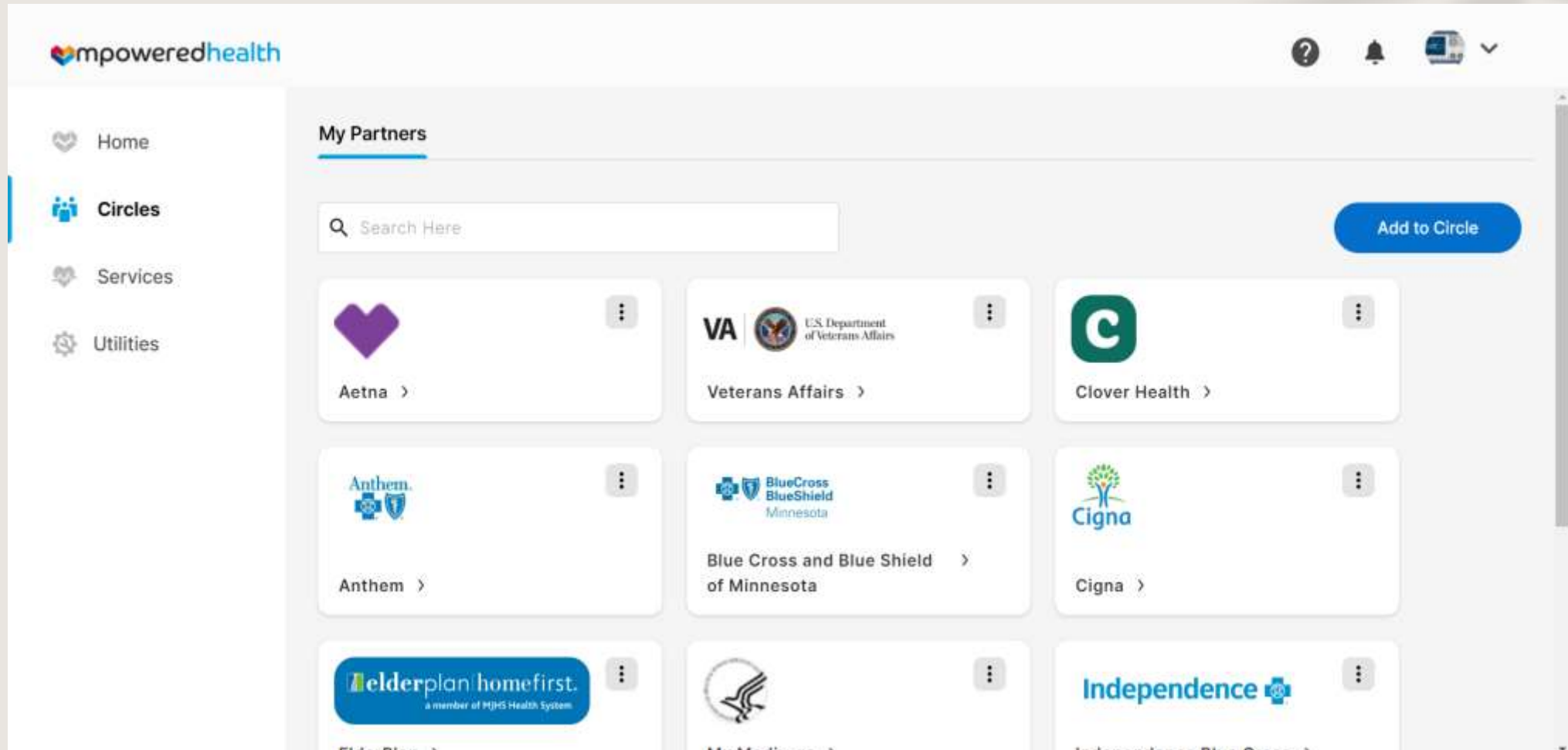


Fig :Circles positive scenarios- User on circles

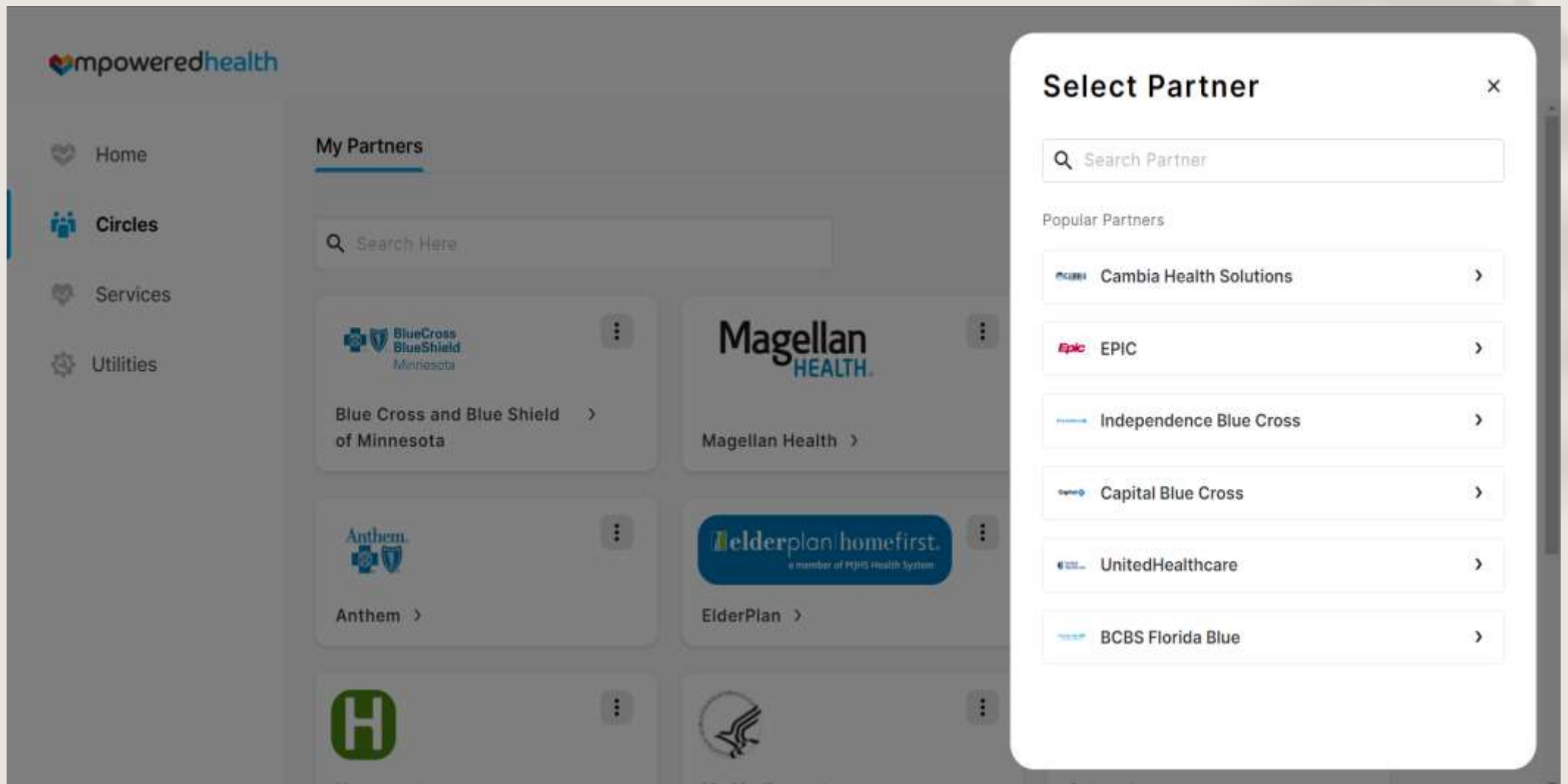


Fig :Circles positive scenarios- User add partner



Connecting personal health data

Log in using your credentials

Username

Password

[Forgot username?](#)

[Forgot password?](#)

Login

[← Back to welcome page](#)



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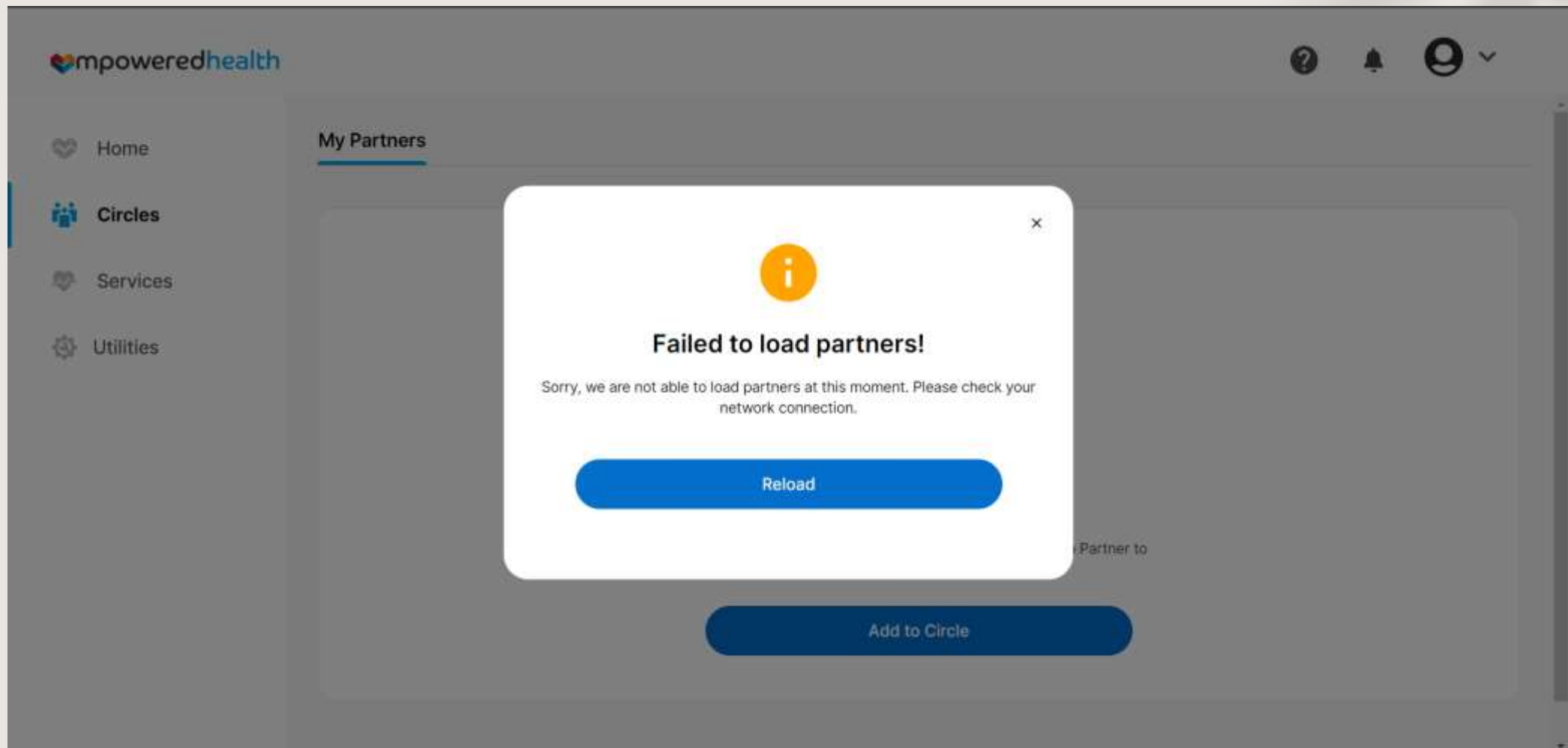


Fig : Circles negative scenarios- Failed to load partner

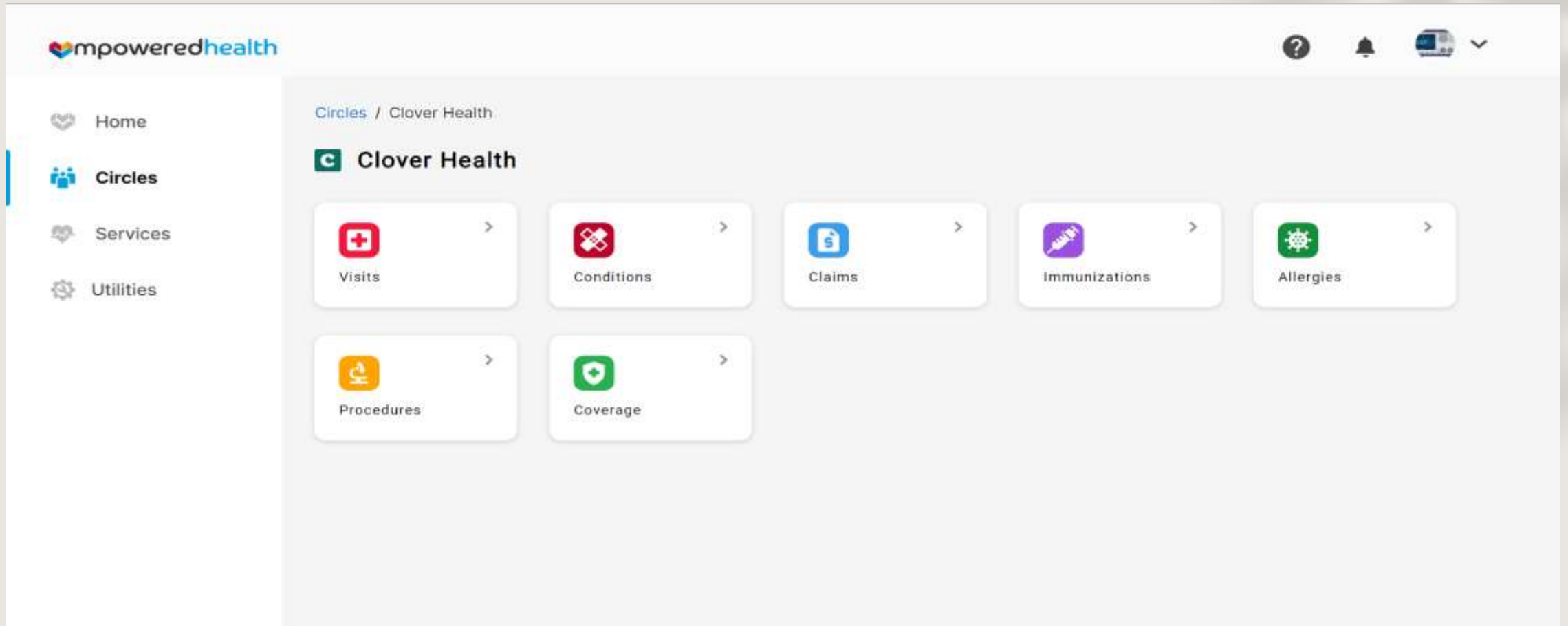


Fig :Circles postive scenarios- navigation to clover health

Thanks