Integrate Cucumber With Selenium WebDriver For Website Automation

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CONTENTS

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

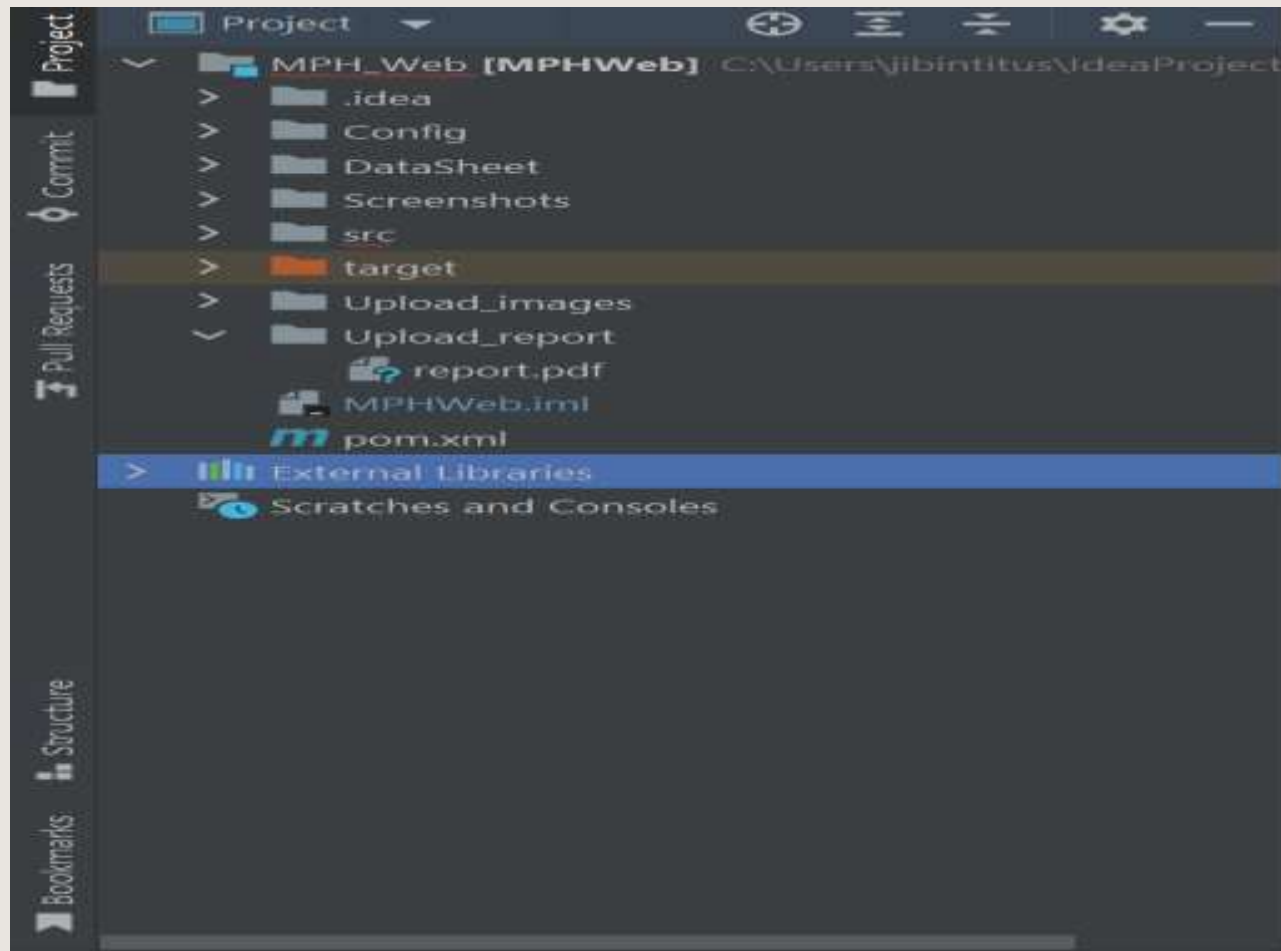# Methodology

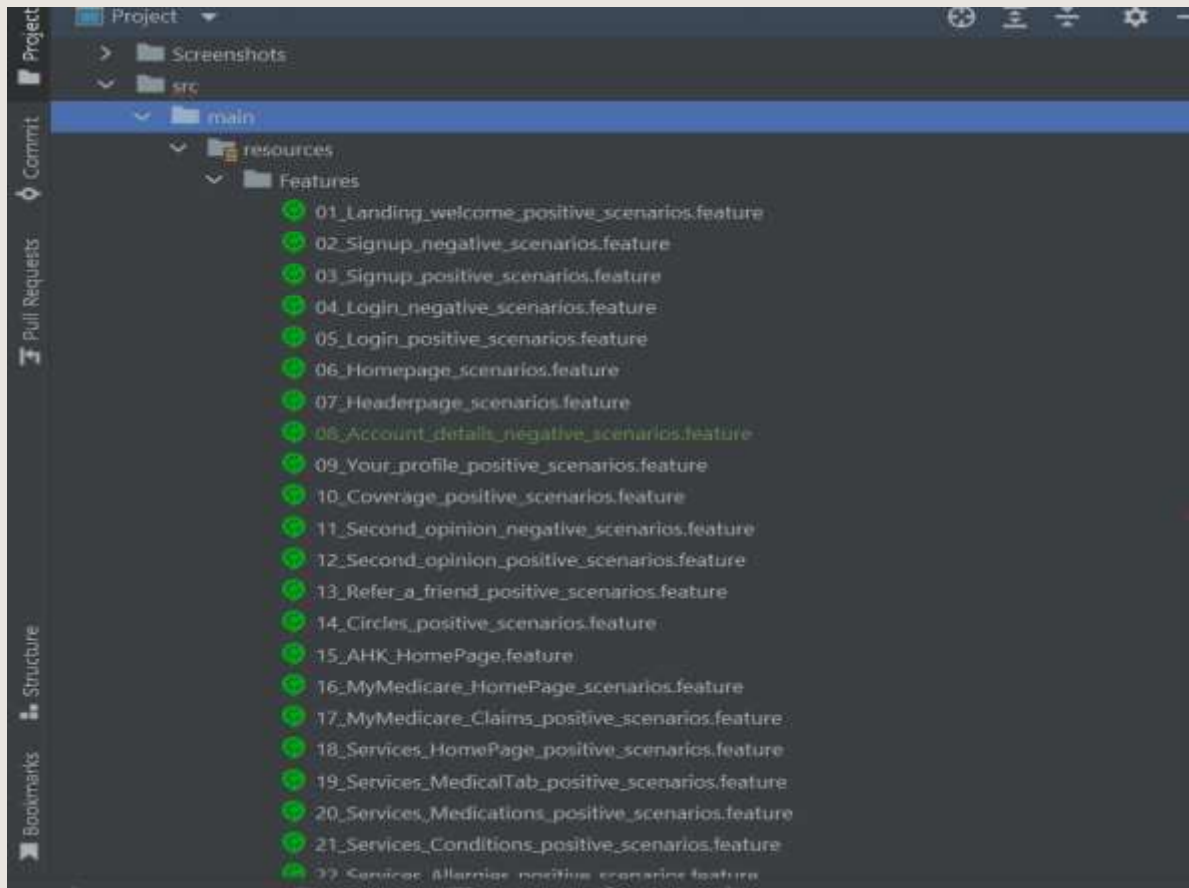# System Architecture
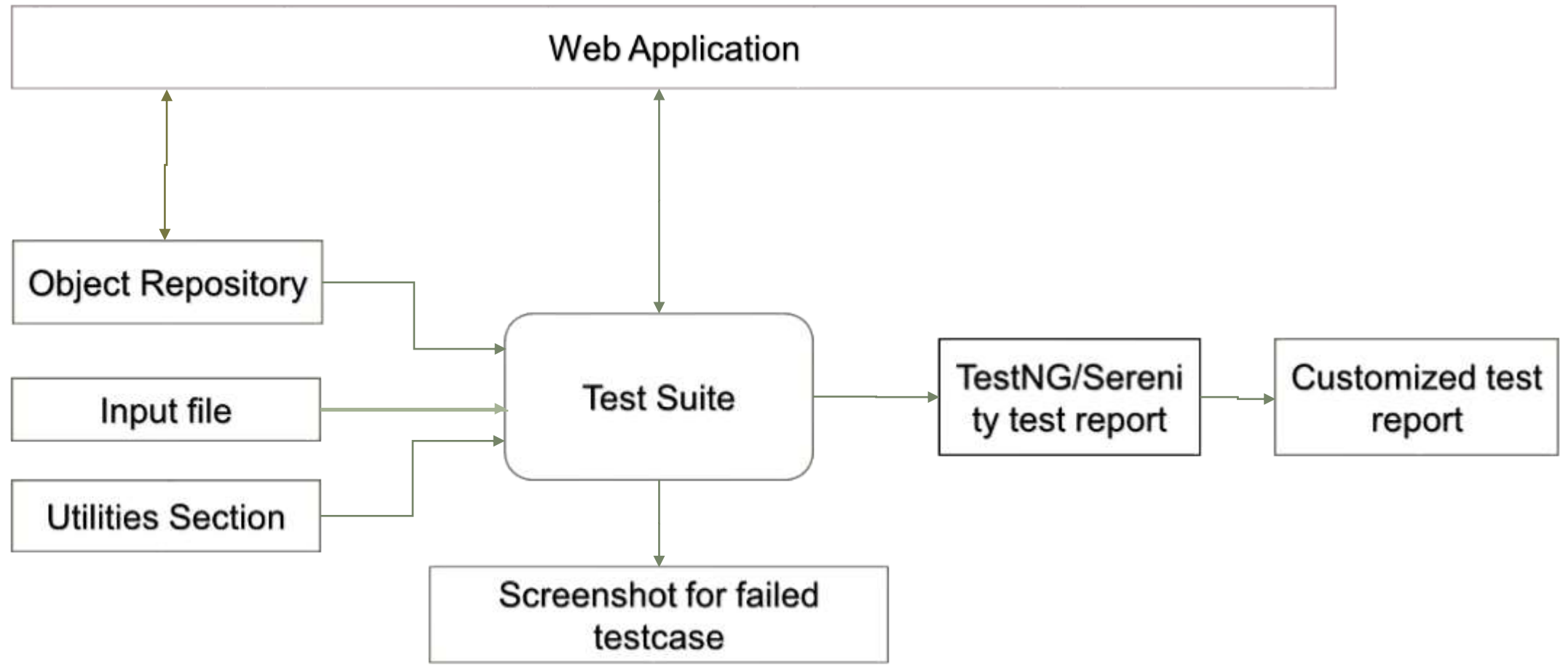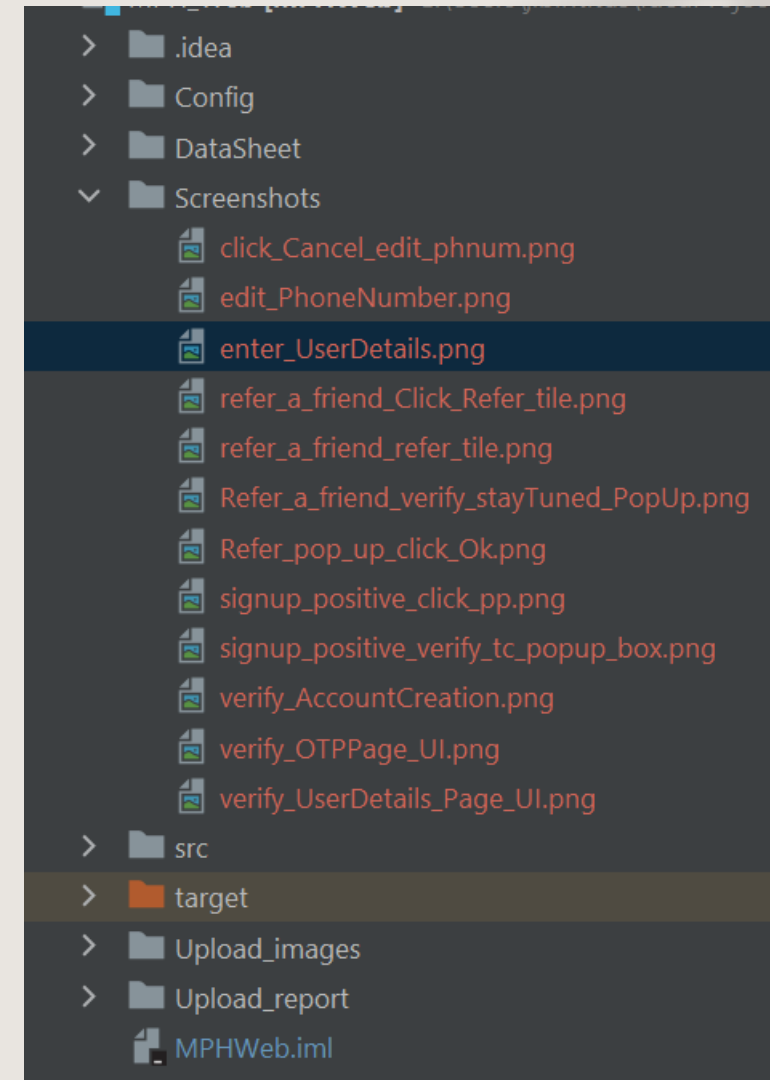
Fig:Architecture of proposed system

Fig:Feature files
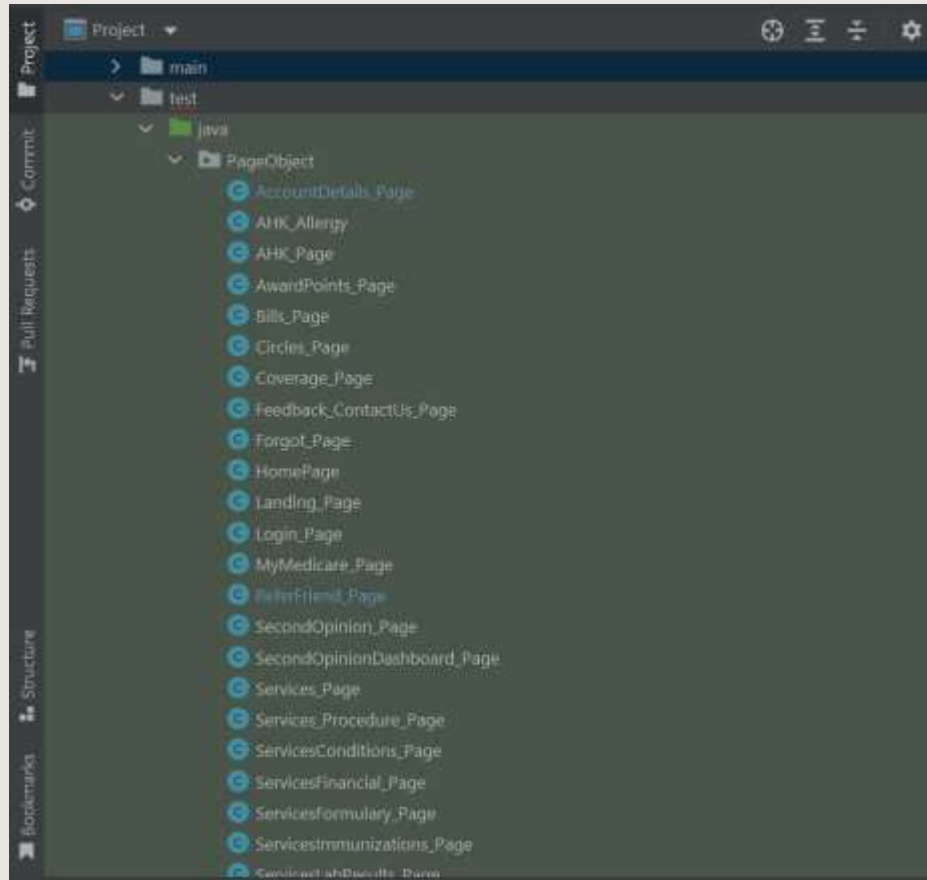

Fig : Screenshot for failed testcase
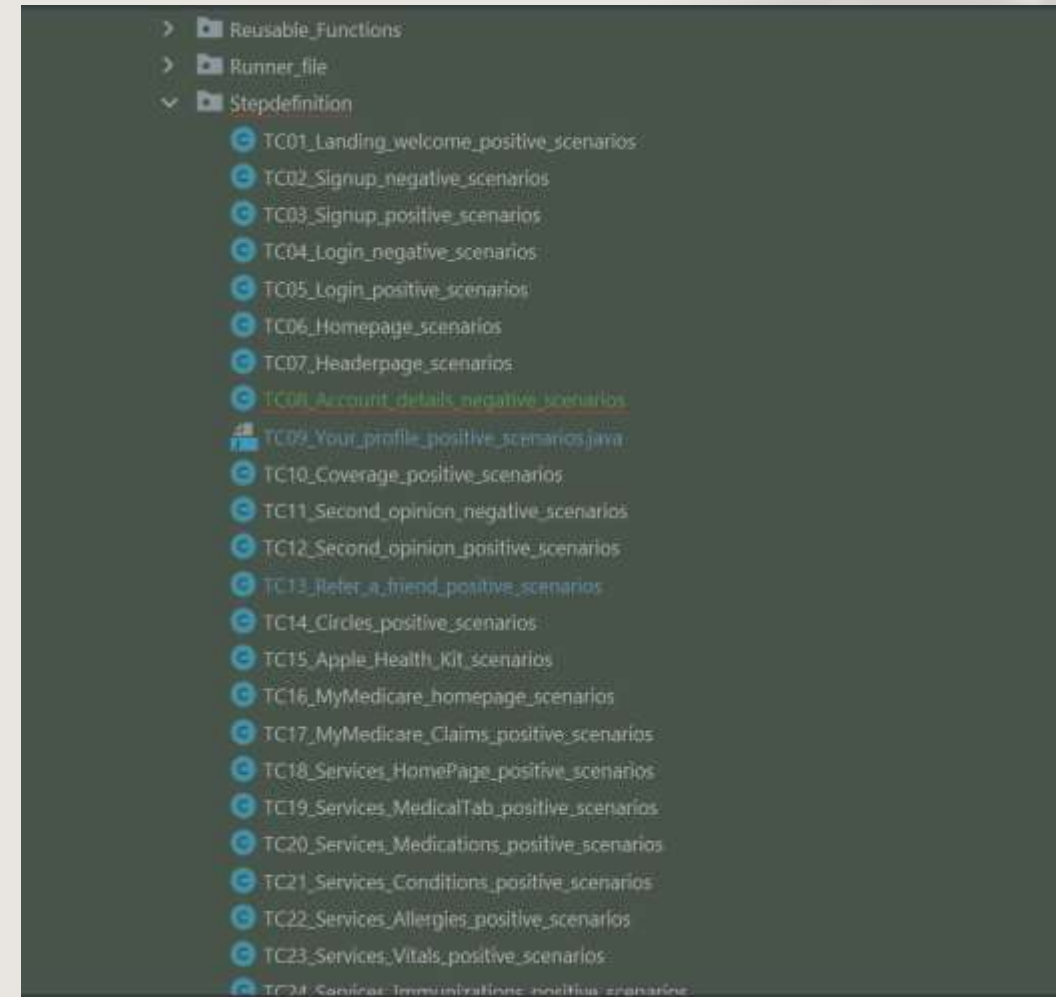
Fig: Object repository java files

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…

```gherkin
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
```
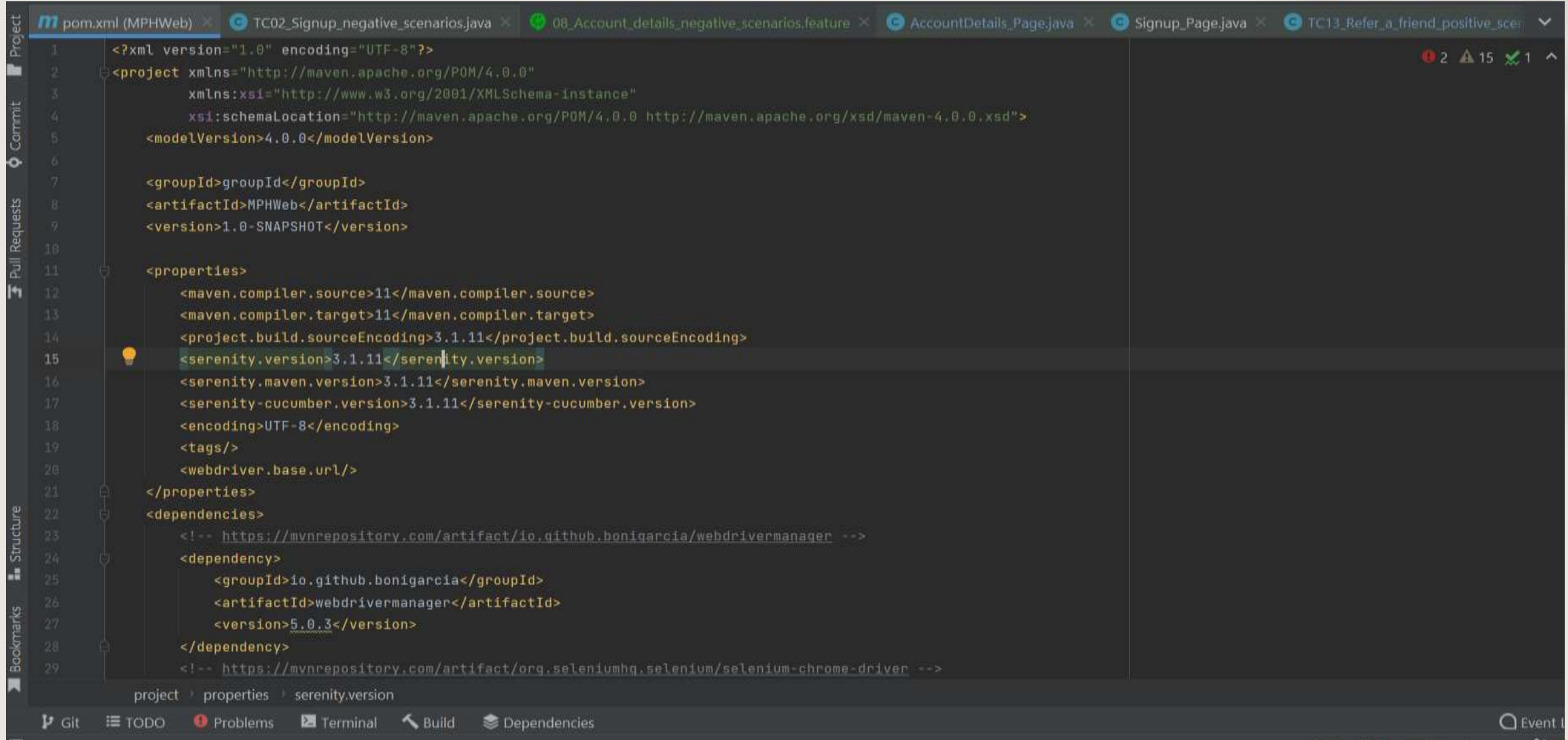
6. Maven

- 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.
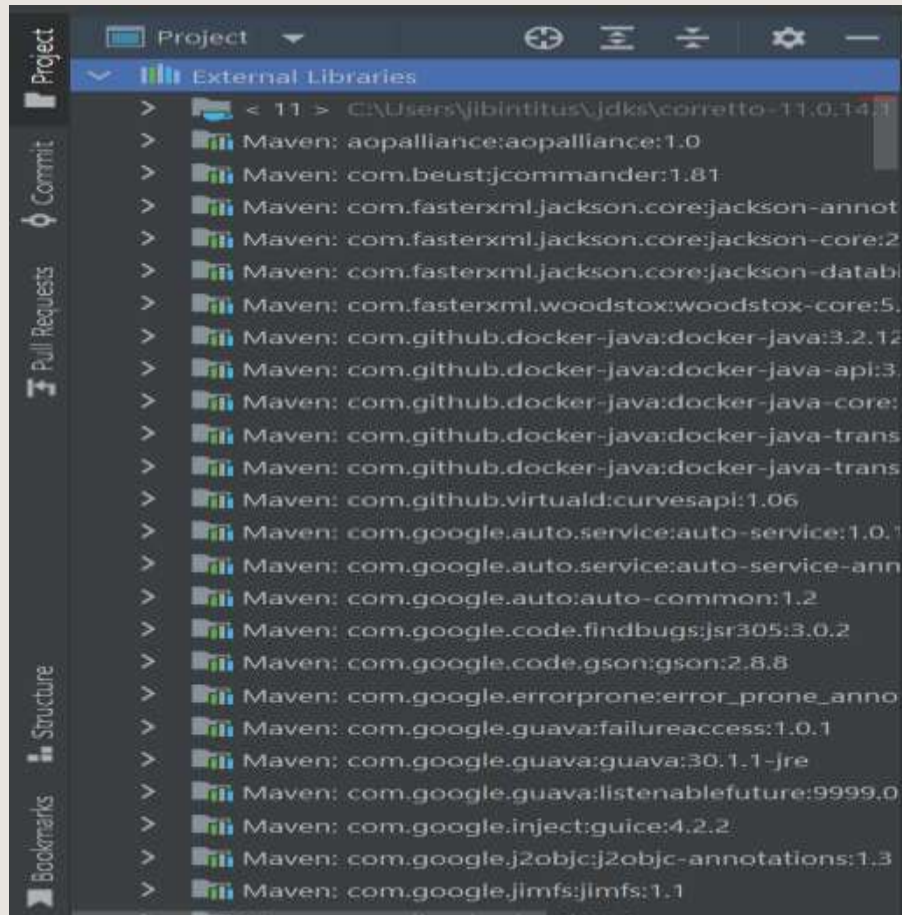
POM.xml

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.
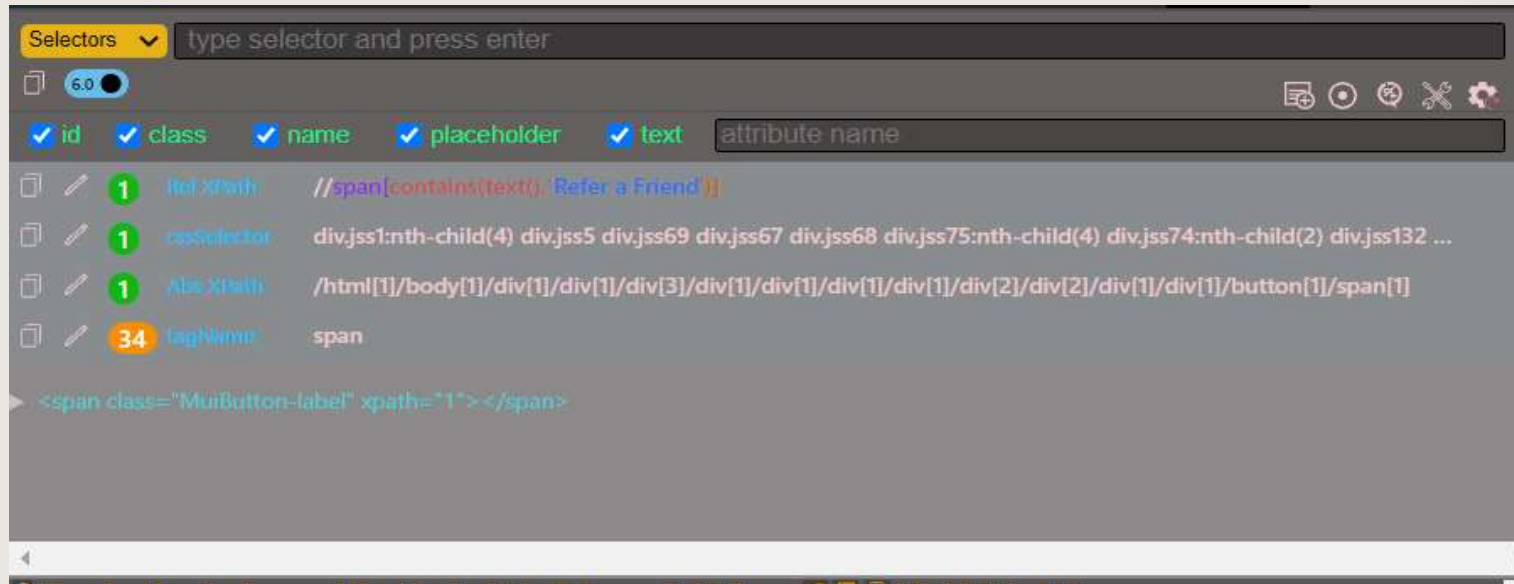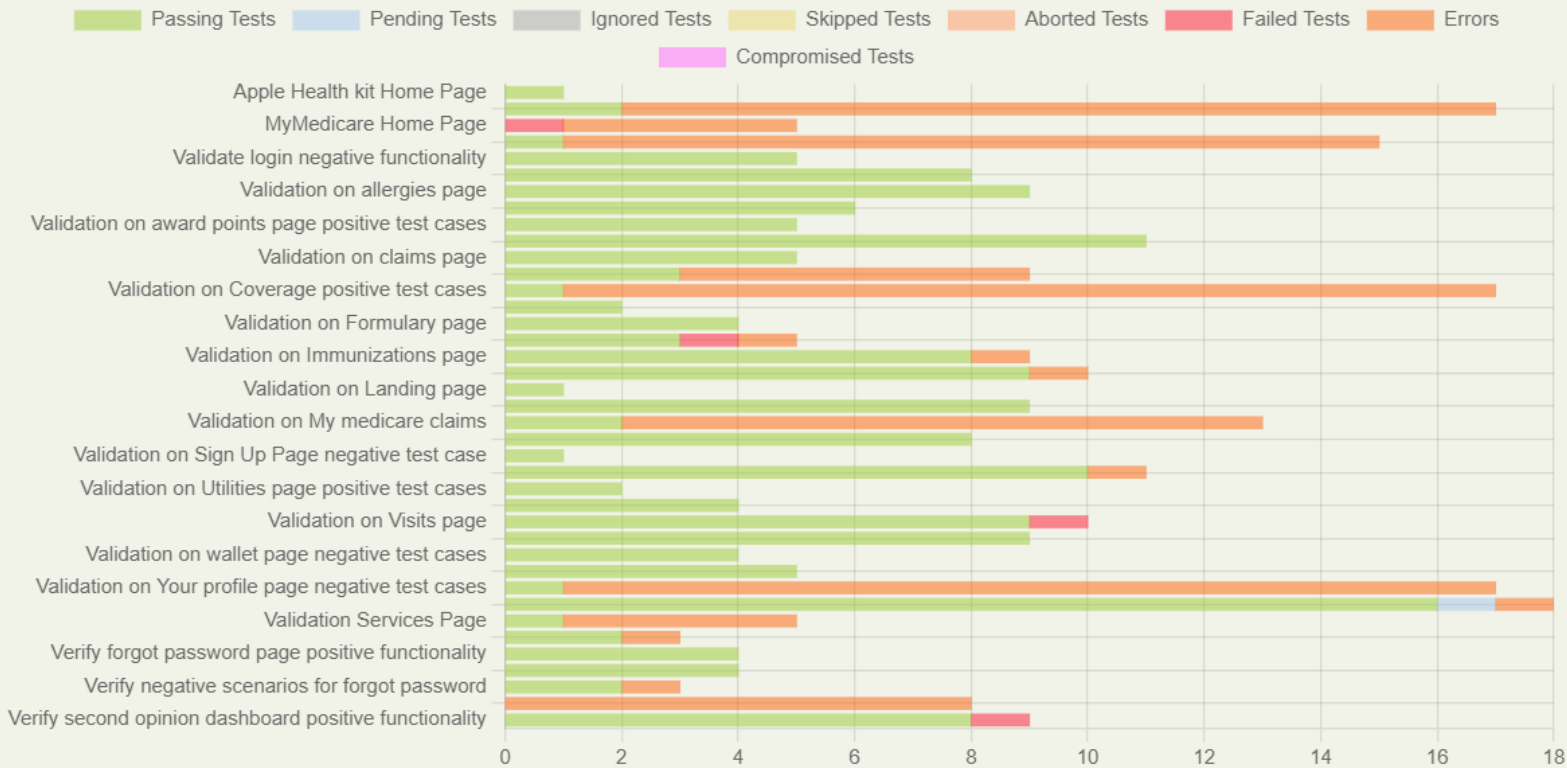

Fig :Capature xpath of Web element using ChroPath.

Result and Discussion

Fig :Serenity Report of test execution

📊 Functional Coverage Overview

Features

Legend: Passing Tests | Pending Tests | Ignored Tests | Skipped Tests | Aborted Tests | Failed Tests | Errors | Compromised Tests

(Horizontal bar chart with the following features listed on the y-axis from top to bottom:)

- Apple Health kit Home Page
- MyMedicare Home Page
- Validate login negative functionality
- Validation on allergies page
- Validation on award points page positive test cases
- Validation on claims page
- Validation on Coverage positive test cases
- Validation on Formulary page
- Validation on Immunizations page
- Validation on Landing page
- Validation on My medicare claims
- Validation on Sign Up Page negative test case
- Validation on Utilities page positive test cases
- Validation on Visits page
- Validation on wallet page negative test cases
- Validation on Your profile page negative test cases
- Validation Services Page
- Verify forgot password page positive functionality
- Verify negative scenarios for forgot password
- Verify second opinion dashboard positive functionality

(X-axis: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18)

⏱ 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

Fig :Signup positive scenario – enter valid details

Fig :Signup negative scenario - User enters existing email id

Fig :Signup negative scenario –User enter invalid email address

Fig :Signup negative scenarios testing – Blank fields

Fig :Login positive scenario-Enter valid data

Fig: Login negative scenario- for invalid credentials
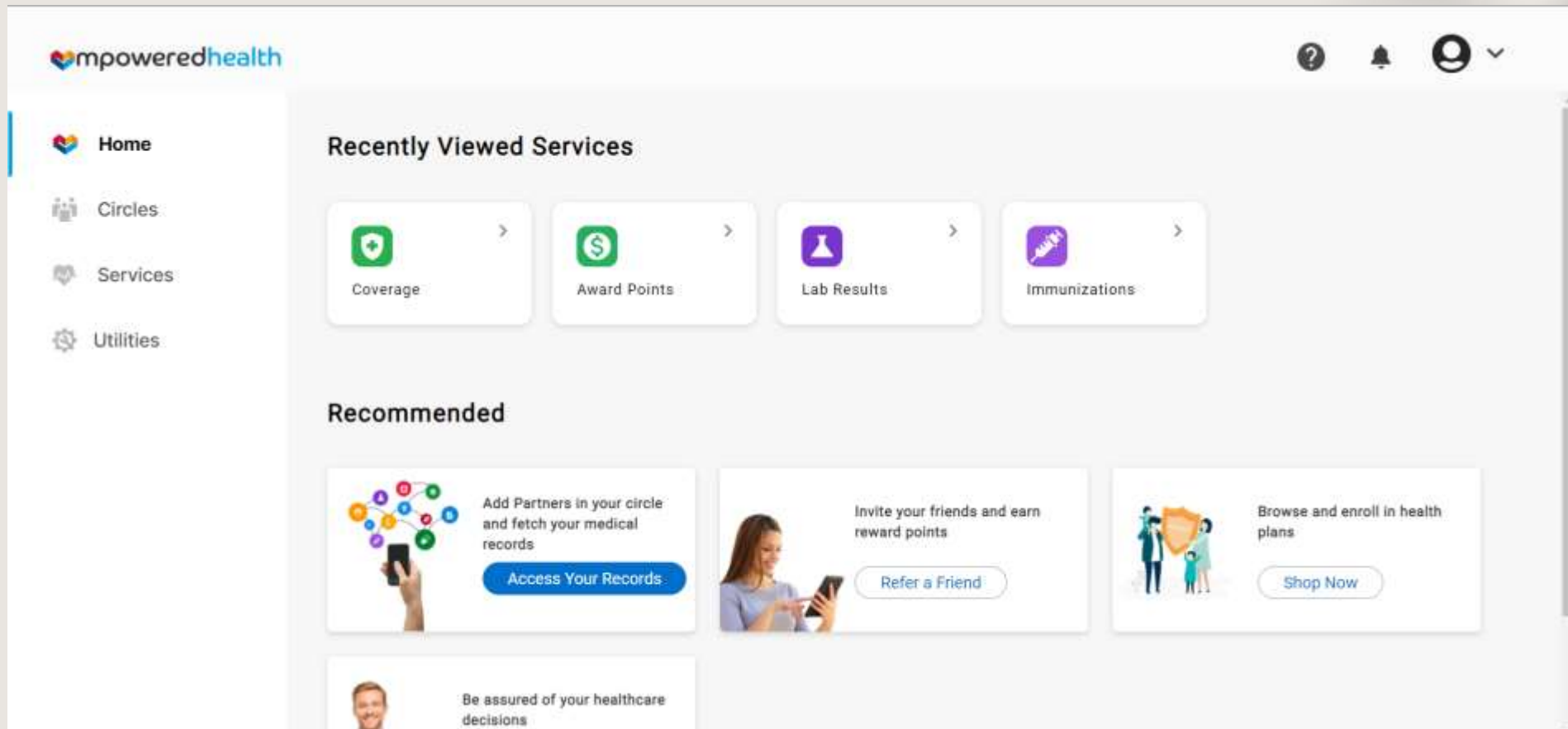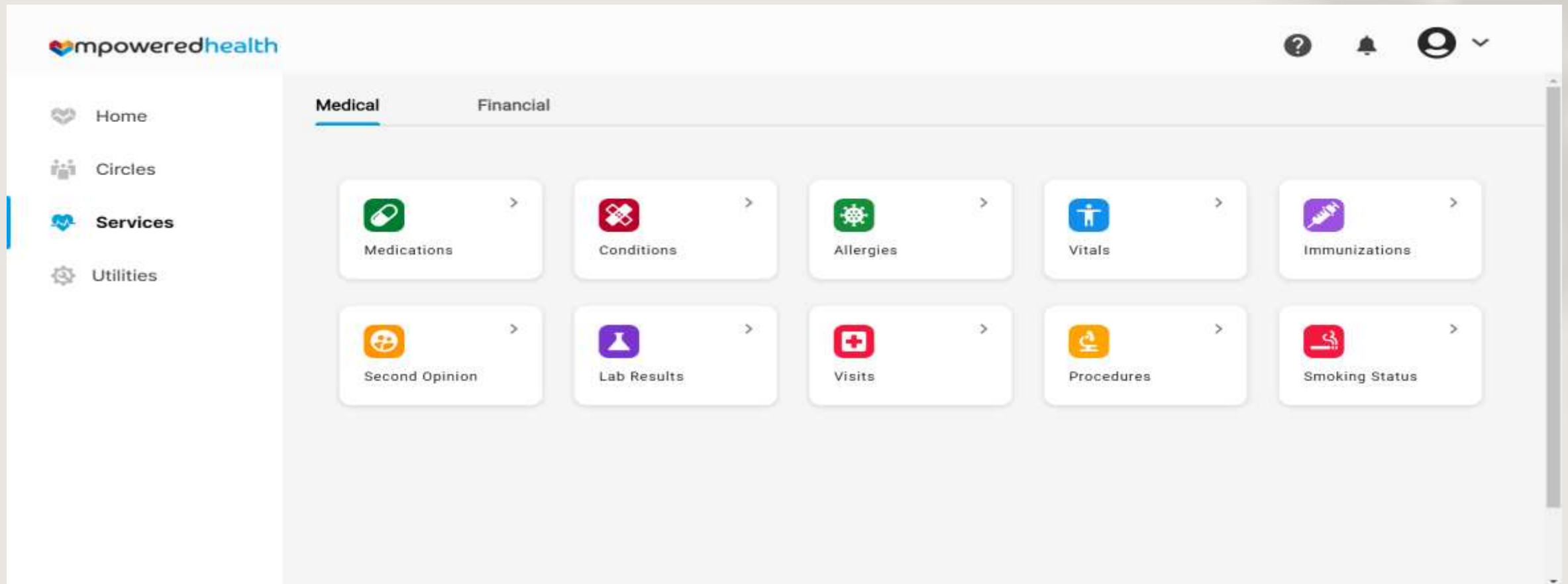
Fig :Home positive scenarios -navigated to home page

Fig :Services positive scenario-navigated to medication tab

Fig :Services medication positive scenario-navigated to medications

Fig :Services medication positive scenario-navigated to medicationself reporting
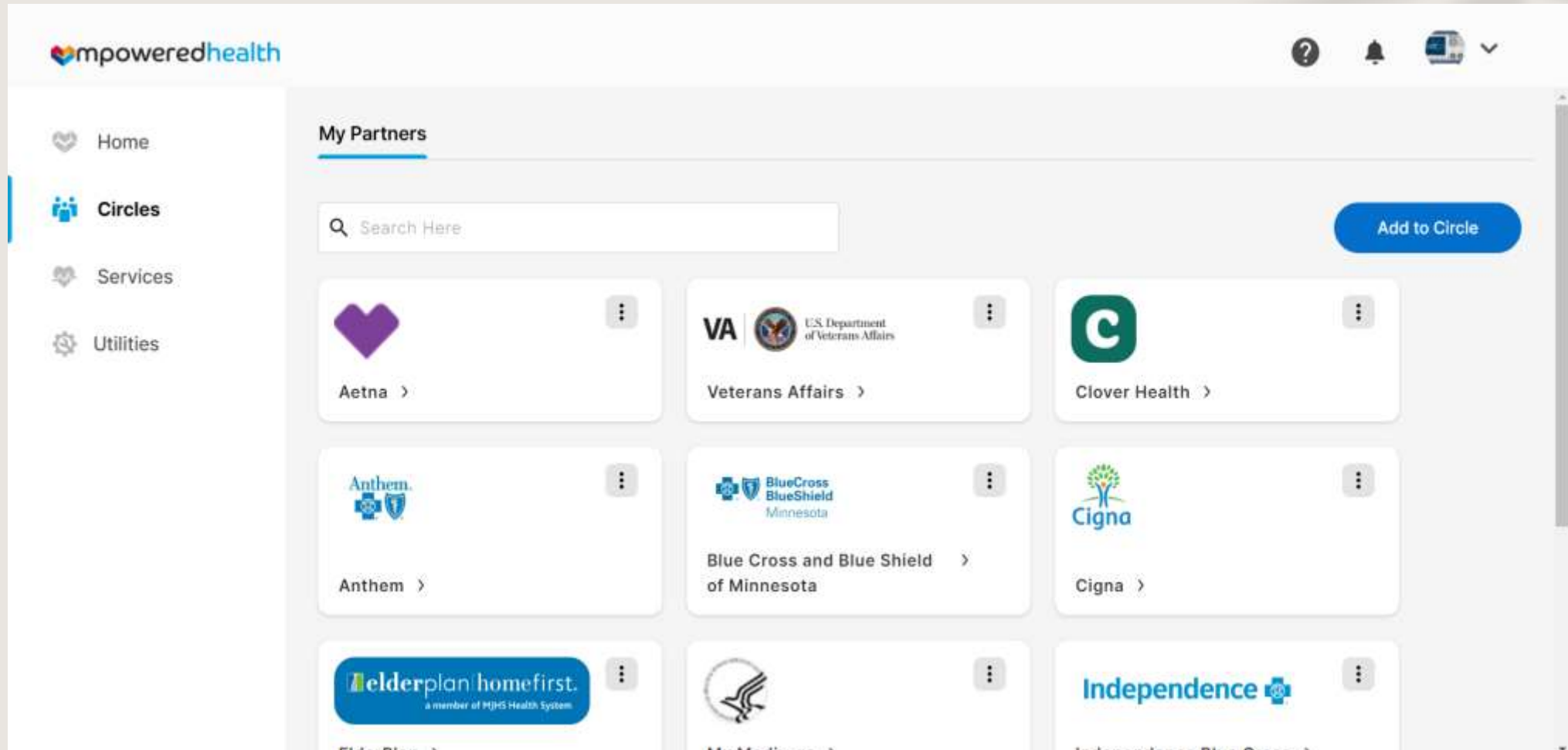
Fig :Circles positive scenarios- User on circles

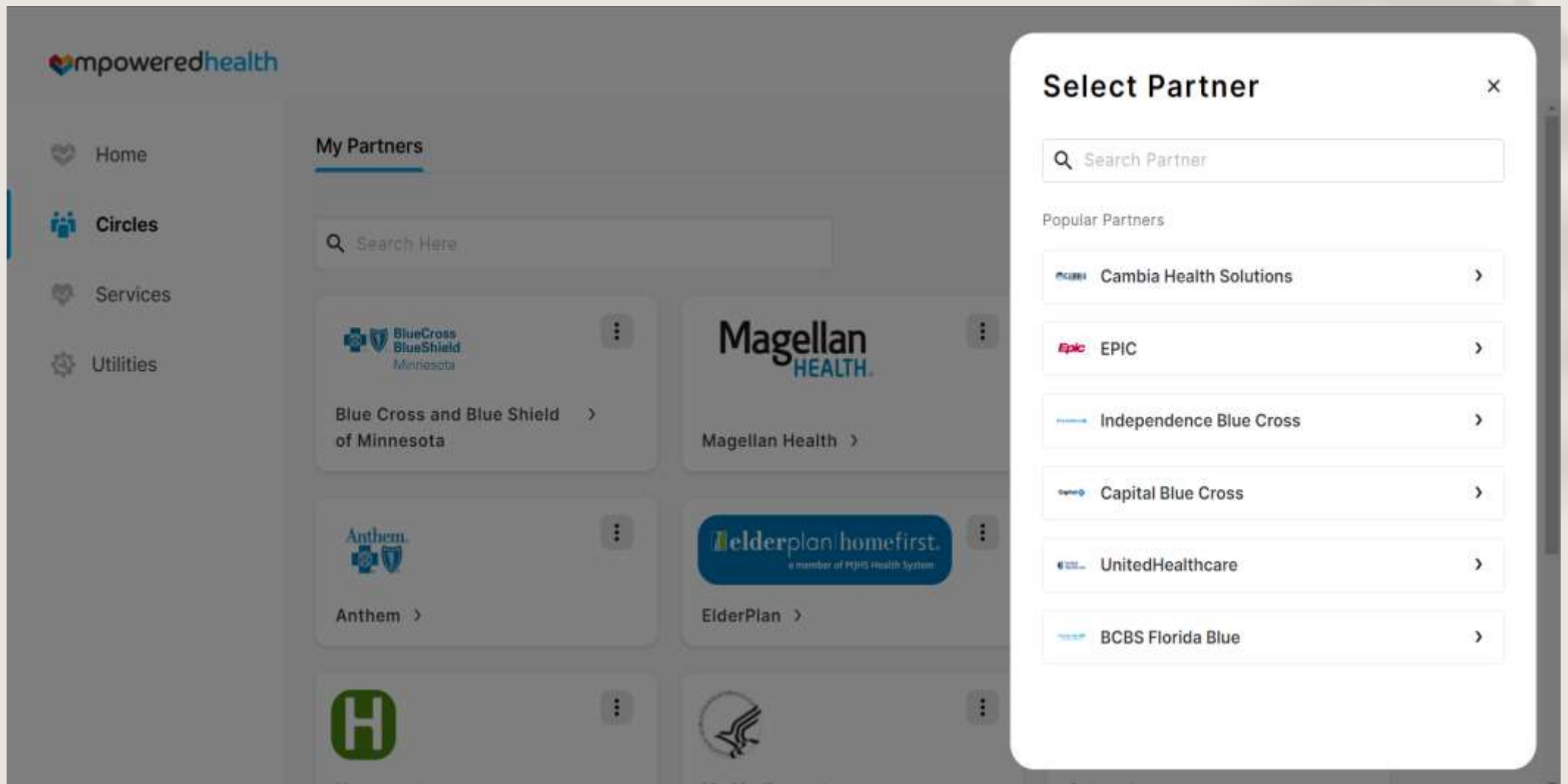Fig :Circles positive scenarios- User add partner

Independence ⊕

Connecting personal health data
Log in using your credentials

Username

Password

Forgot username?   Forgot password?

Login

‹ Back to welcome page

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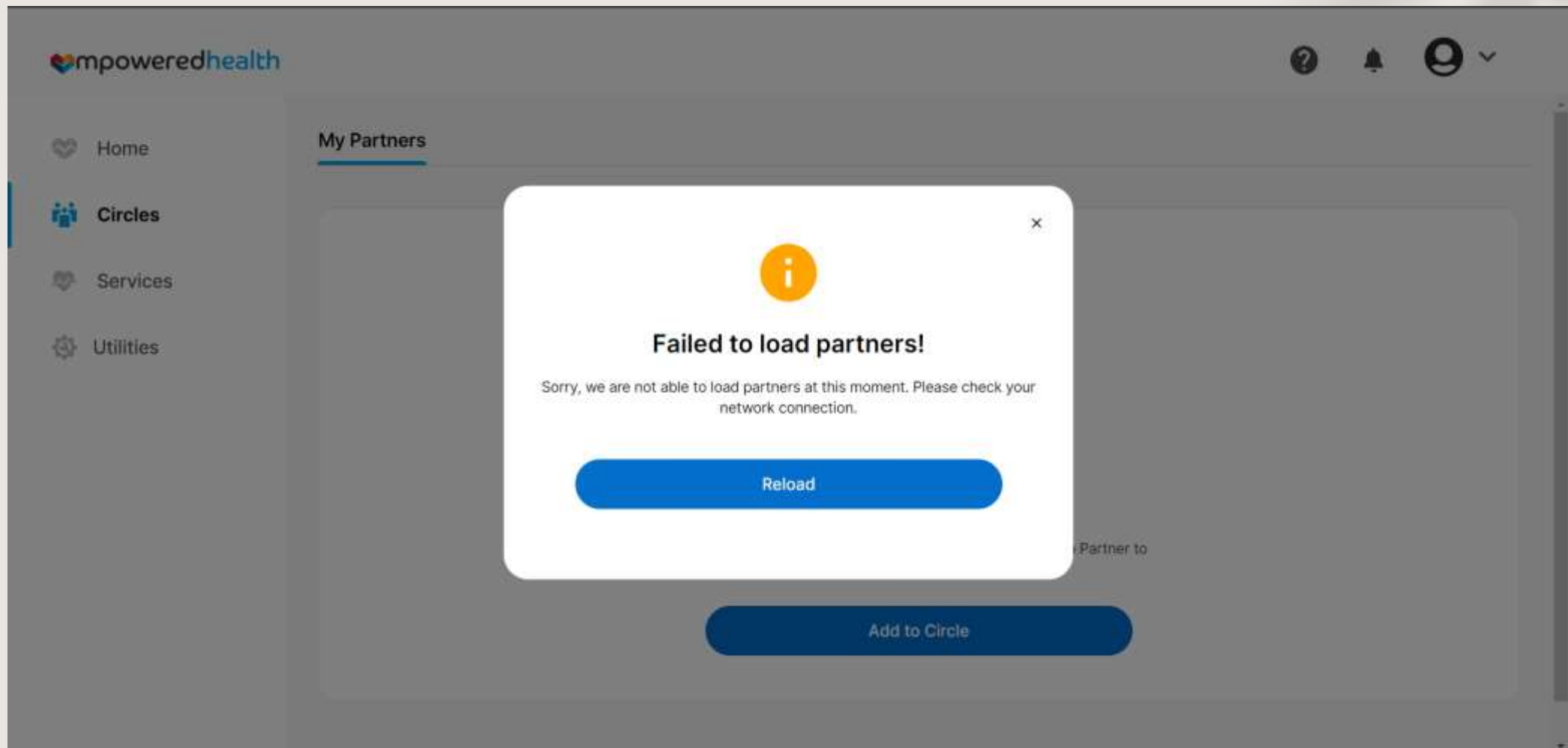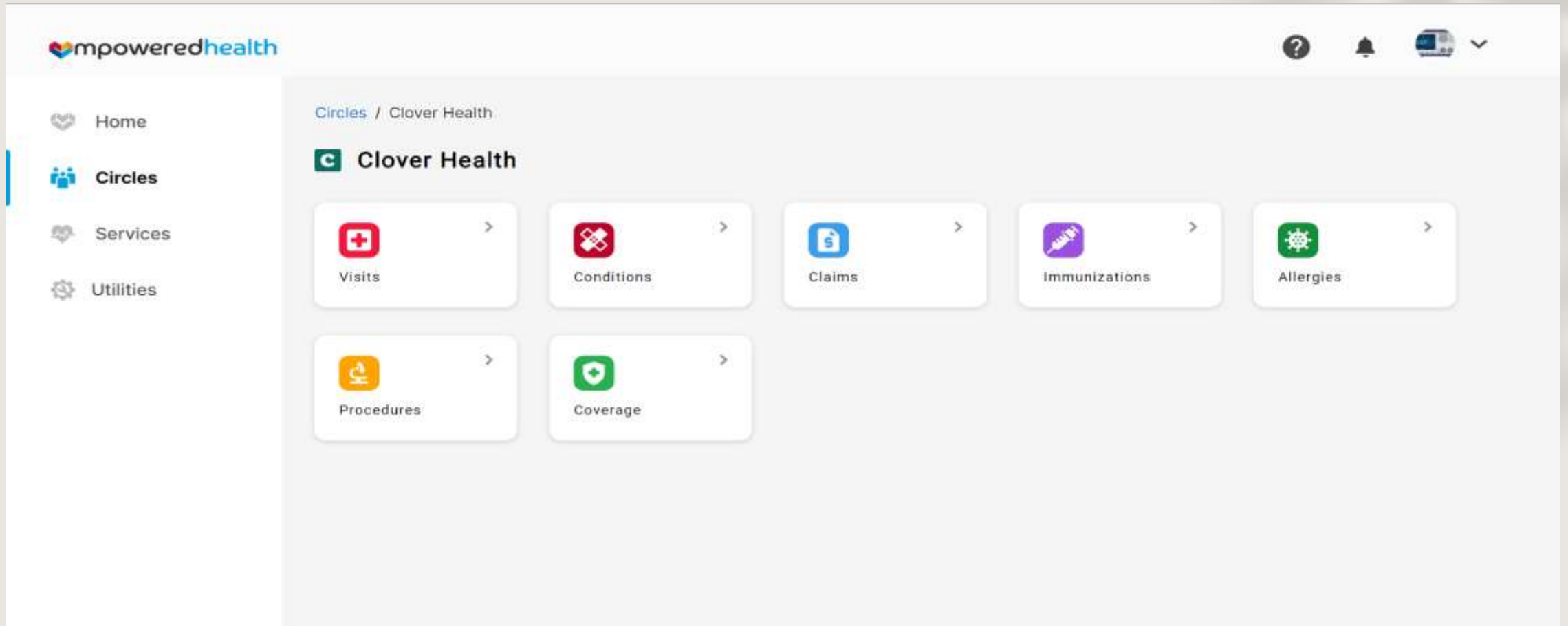
Fig : Circles negative scenarios- Failed to load partner

Fig :Circles postive scenarios- navigation to clover health

Thanks