

# CSCE 606: Software Engineering Project

Title: CSE PhD Qual Practice System

Team: WeCode

## Iteration 1 Report

**Scrum Master:** Shruthi Sampathkumar

**Product Owner:** Abhishek Taur

### **Team Members:**

Abhishek Taur

Pranav Kulkarni

Arif Arman

S M Farabi Mahmud

Raj Vardhan

Shruthi Sampathkumar

Shibin Tazhe Veettil

### **1. User stories implemented in this iteration:**

- Omni Login
- Timer

Timer :

**Description:** Allows the user to take a quiz within the inputted time value. We implemented the timer functionality such that when the timer completes, the quiz is auto-completed and the user is shown the results. We also did input validation to ensure that the timer is set to a valid value. If the input is deemed invalid (e.g. input contains letters, has value more than 24 hrs or has negative

or 0 value), then users are notified of the invalid input and asked to enter a valid input.

The screenshot shows a web interface for a quiz. At the top, there is a navigation bar with 'PhD Flash Cards', 'Home', 'Practice', and 'Quiz'. On the right, there are links for 'Your Questions', 'Categories', and 'Log out'. Below the navigation bar, there is a section for 'Marked Questions' with a timer showing '00:09:47'. The main content area displays a question: 'The Fibonacci sequence  $F_n$  is defined by  $F_1 = 1$ ,  $F_2 = 1$ , and  $F_n = F_{n-2} + F_{n-1}$  for all integers  $n \geq 3$ . What is the minimal number of  $D$  flip-flops required (along with combinational logic) to design a counter circuit that outputs the first seven Fibonacci numbers (i.e.,  $F_1$  through  $F_7$ ) and then wraps around?'. Below the question, there are five multiple-choice options: (A) 3, (B) 4, (C) 5, (D) 6, and (E) 7. The option (E) 7 is selected. At the bottom of the question area, there are 'Previous' and 'Next' buttons. A 'Submit' button is located below the question area.

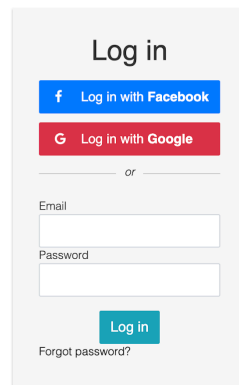
Fig 1. Timer shown in top left for the quiz.

The screenshot shows a web interface for a quiz. At the top, there is a navigation bar with 'PhD Flash Cards', 'Home', 'Practice', and 'Quiz'. On the right, there are links for 'Your Questions', 'Categories', and 'Log out'. Below the navigation bar, there is a section titled 'Select number of questions'. It contains five radio button options: 20, 40, 60, and 'All'. The 'All' option is selected. Below these options, there is a text input field labeled 'Set timer value (mins)' with the value '45' entered. A 'Start Quiz' button is located at the bottom of this section.

Fig 2. Allows the user to input time and select the number of questions before the quiz starts.

Omni Login :

**Description:** This feature allows the user to login using Google+ and Facebook. We have to change the current authentication framework, which is not using any gem or framework, to devise based. For signing/logging in, we have used devise, omniauth-google and omniauth-facebook. We modified the nav bar and body styling little bit, apart from the existing styles. Debugging the incompatibility with the existing session module was difficult. Also, it was tricky to add multiple authentications. To use this feature we needed to add the Secret key and Client ID of our api using Google API console, Facebook authentication. This Secret Key and Client ID of the heroku app are used by Google and Facebook to validate that the request came from the correct App. Once the user clicks on for example button Log in with Google he is redirected to Google authentication page as shown in the below images.



Log in

[f Log in with Facebook](#)

[G Log in with Google](#)

or

Email

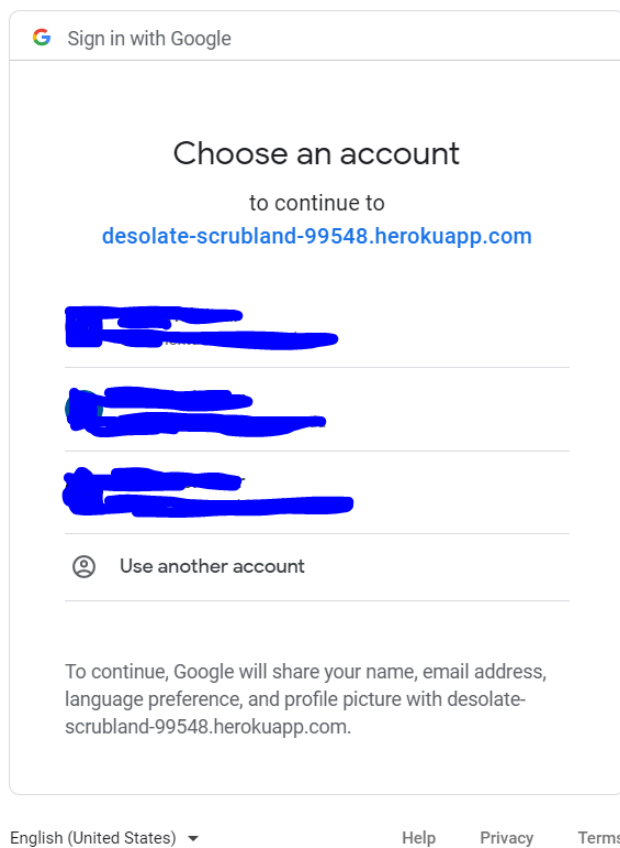
Password

[Log in](#)

[Forgot password?](#)

"Not a user?" [Register](#)

Fig 3. Login page with added features for Google and Facebook Login.



[Sign in with Google](#)

Choose an account

to continue to

[desolate-scrubland-99548.herokuapp.com](#)

[\[Account 1\]](#)

[\[Account 2\]](#)

[\[Account 3\]](#)

[Use another account](#)

To continue, Google will share your name, email address, language preference, and profile picture with [desolate-scrubland-99548.herokuapp.com](#).

English (United States) ▼ Help Privacy Terms

Fig 4. Redirected to Google Authentication page

## 2. Testing achieved:

### Scenarios Tested for Timer:

- 1) Selected all the possible number of question options like 20, 40, 60, All with a valid timer value and finishing the test before time and checked if the timer freezes and we are shown all the answers.
- 2) Tested all possible number of question options like 20, 40, 60, All with a valid timer value and tested that on time out the quiz is over and the show answer is called.
- 3) Tested the timer input field with invalid values like negative or 0 value, string, time over 24 hrs and checked if the error messages are displayed to the user or not.
- 4) Checked the scenarios 1), 2), 3) after login too.

### Scenarios Tested for Omni-login:

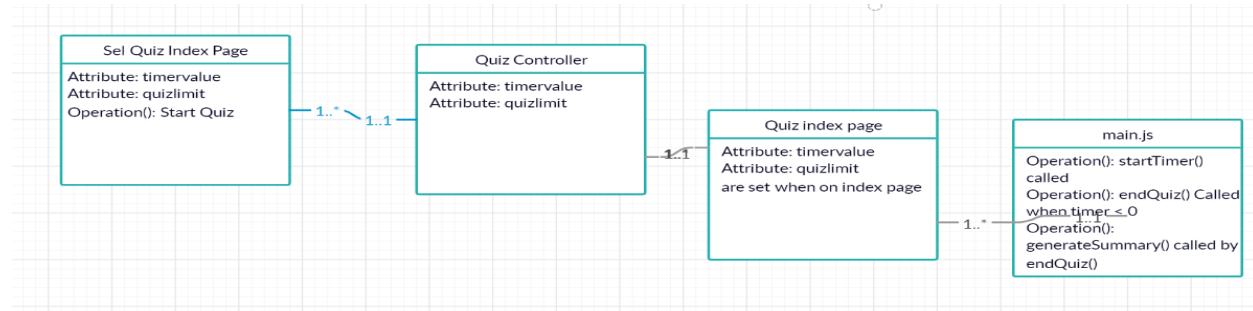
- 1) On clicking the login button for Google or Facebook when the user is not present whether we are directed to the Google or Facebook Authentication page and on login the user is created.
- 2) If the user is already present then on login using Google or Facebook whether he has the same access permission or not.
- 3) If the user is present and we try to register him using the normal method, are we getting validation errors.
- 4) If we create a user and then login using Google or Facebook are we able to do it or not and vice versa and whether the password if invalid is showing a validation warning to the user or not.

Rspec and Cucumber tests were added for the above scenarios wherever possible. For example the Cucumber tests were not added for Scenario 1) of the Omni-Login because Cucumber doesn't allow to validate redirection which is a url outside the App URL. The report for the cucumber and rspec test can be found at <https://github.com/Shruthi-Sampathkumar/PhD-Qual-Practice/blob/master/coverage/index.html>

The overall coverage was increased to 50.7% while earlier it was 8.6%. Most of the scenarios have been tested completely. We were not able to use Code Climate to figure out the velocity as we weren't able to get the free trial.

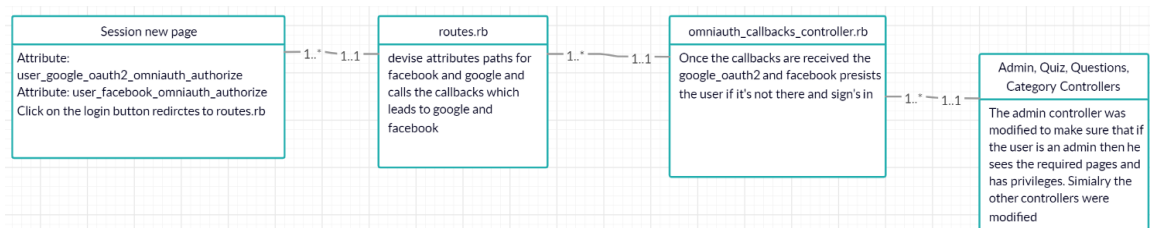
## Implementation Diagram:

### 1) Timer:



The above diagram shows the implementation flow for Timer with how the interactions are done. The flow is from left to right. 1..\* is calling and 1..1 is called class or page.

### 2) Omni-login



The above diagram shows the implementation flow for Omni-login with how the interactions are done. The flow is from left to right. 1..\* is calling and 1..1 is called class or page.

## Customer Meeting:

The team was not able to connect with the customer due to COVID19 breakout and thus did not receive feedback. This report was submitted with the implementation plans discussed with the customer in the meeting for iteration0.

**Pivotal Tracker:** <https://www.pivotaltracker.com/n/projects/2441195>

**Github Link:** <https://github.com/Shruthi-Sampathkumar/PhD-Qual-Practice>

**Heroku Link:** <https://desolate-scrubland-99548.herokuapp.com/home>