CSCE 606: Software Engineering Project
Title: CSE PhD Qual Practice System
Team: WeCode

Iteration 1 Report

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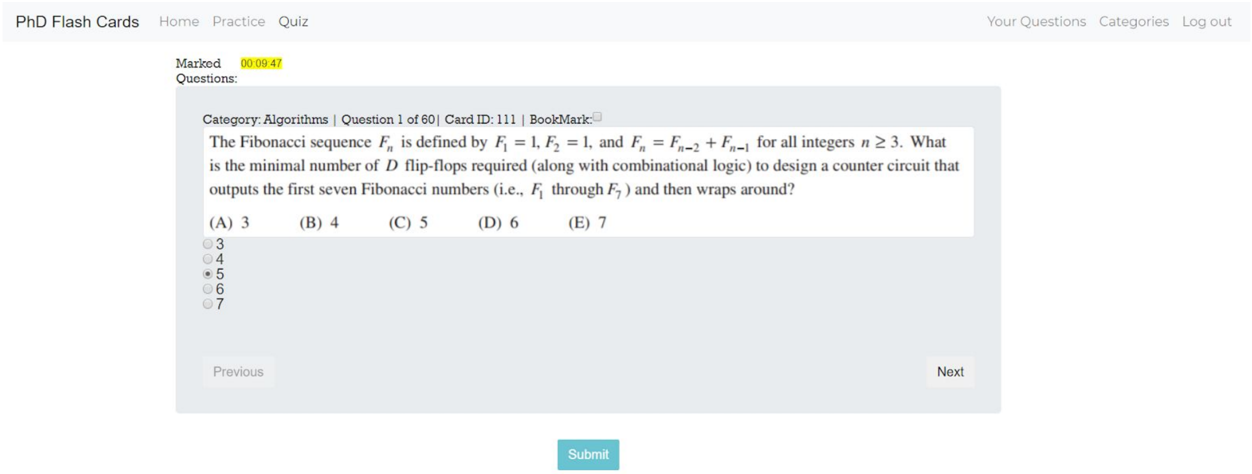
1. User stories implemented in this iteration:

- 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.



Marked Questions: 00:09:47

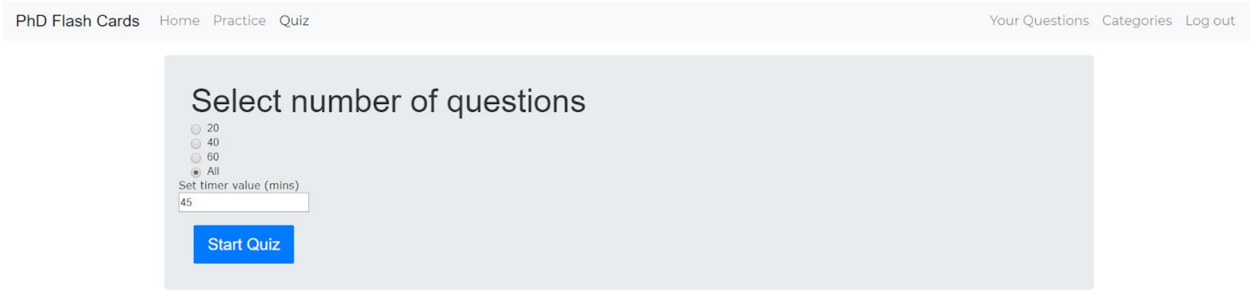
Category: Algorithms | Question 1 of 60| Card ID: 111 | BookMark: □

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?

(A) 3 (B) 4 (C) 5 (D) 6 (E) 7

○ 3
○ 4
● 5
○ 6
○ 7

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



Select number of questions

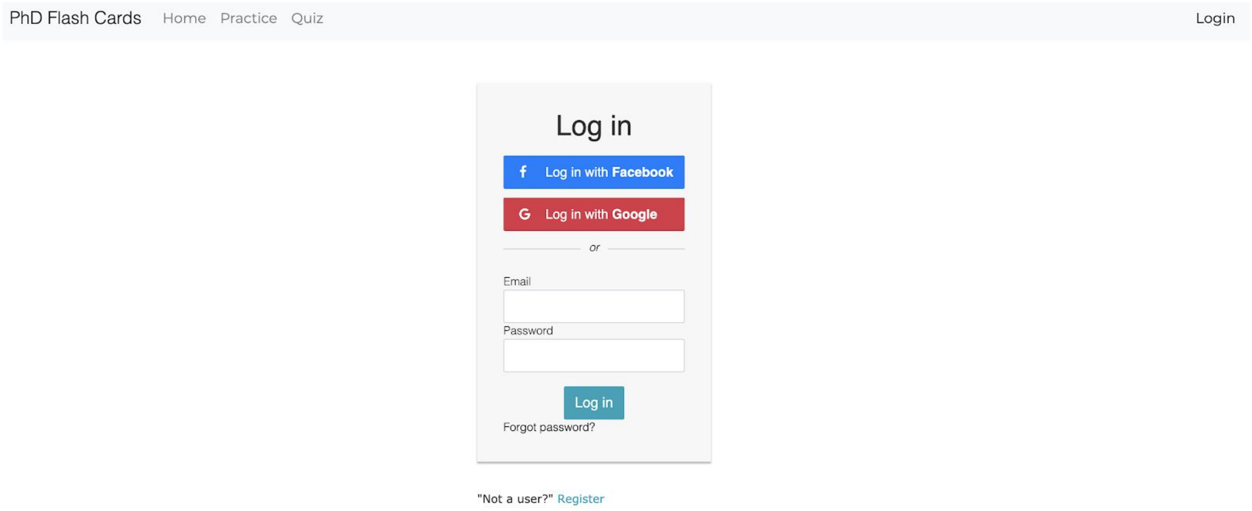
○ 20
○ 40
○ 60
● All

Set timer value (mins) 45

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

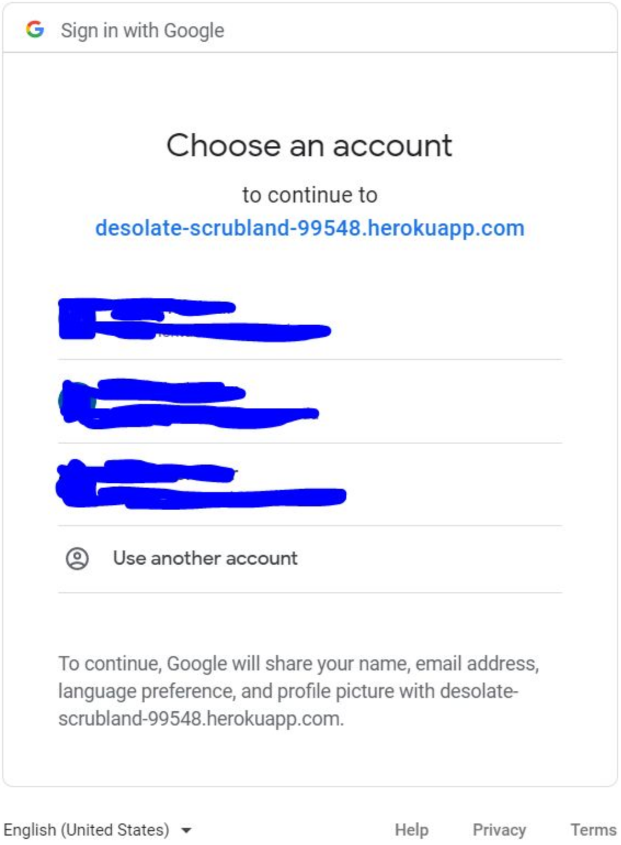
Omni Login :

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.



"Not a user?" Register

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



Choose an account

to continue to desolate-scrubland-99548.herokuapp.com

[redacted]

[redacted]

[redacted]

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

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.

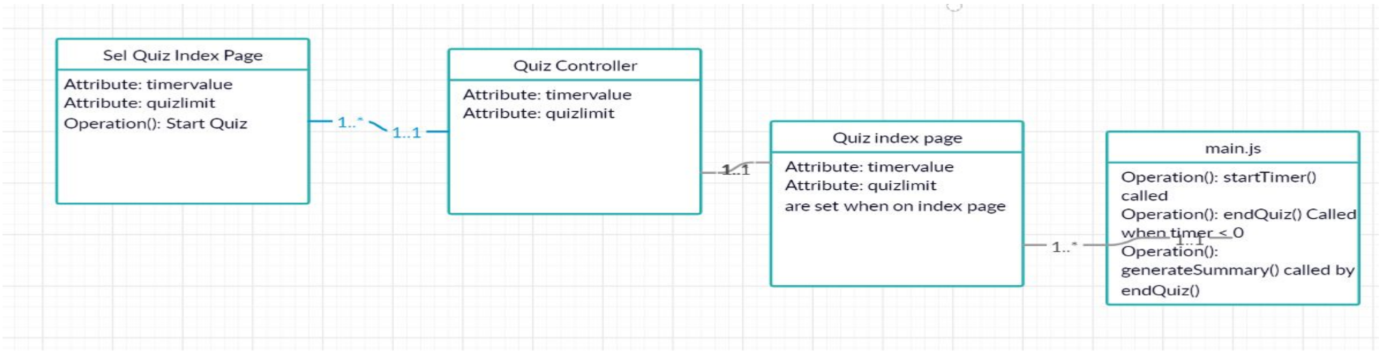
Scenarios Tested for Omni-login:

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.

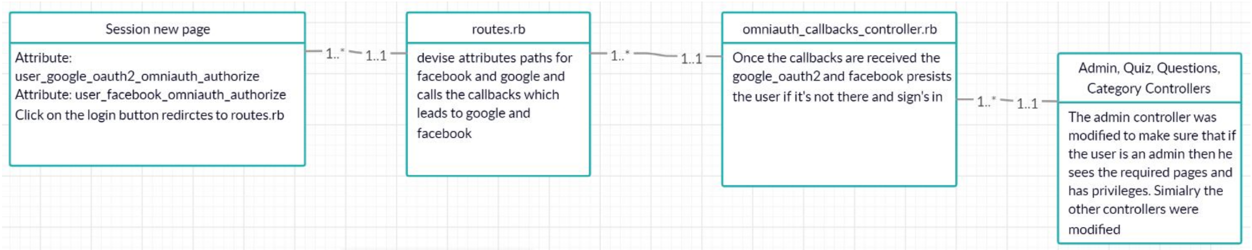
Implementation Diagram:

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**


Session new page
Attribute: user_google_oauth2_omniauth_authorize
Attribute: user_facebook_omniauth_authorize
Click on the login button redirctes to routes.rb
1..*
1..1
routes.rb
devise attributes paths for facebook and google and calls the callbacks which leads to google and facebook
1..*
1..1
omniauth_callbacks_controller.rb
Once the callbacks are received the google_oauth2 and facebook presists the user if it's not there and sign's in
1..*
1..1
Admin, Quiz, Questions, Category Controllers
The admin controller was modified to make sure that if the user is an admin then he sees the required pages and has privileges. Simialry the other controllers were modified

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.

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