Texas A&M University

Study Tracker

CSCE 606 Project Report

Team Holy Rails

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Client: Academic Success Center

Stakeholders: Dr. Valerie Balester, Mr. Lyle Slack

Github Repository Link: https://github.com/HolyRail/Study-Tracker

Demo video: https://vimeo.com/305658312

Heroku deployment Link: https://immense-gorge-48411.herokuapp.com

Pivotal Tracker Link: https://www.pivotaltracker.com/n/projects/2204508

Introduction

Academic Success Center, Texas A&M University wanted to help its students with a program where the students can make and track their schedules, study plans, homework plans and other non football related stuff for a semester.

Their motive behind getting a new application for their students and not to use existing solutions was to keep their application clean of extra bells and whistle. They wanted to keep it as simple and personalized as possible, leaving them space to tweak it according to the feedback they get in future.

As a solution, we came up with Study tracker. Study tracker is a SaaS app built in Ruby on Rails and with open source tools using Agile methodology.

As a part of this exercise, we met with our client every alternate week to discuss the progress and take new requirements for the application along the way.

We divided our phase of development in multiple iterations.

Iteration-1

Our first Customer Meeting was held on 10/08/2018 at 9 AM at Mr. Slack's Office at Academic Success Center, Rudder tower.
Scrum Master: Varsha Khanna
Product Owner: Akshaye Anitha Pradeep
Interview Video

Meeting Summary:
Mr. Slack and Dr. Balester described an application which lets a student enter her study goals, track her time spent working on them and profile her progress giving her room to adjust the goals to stay in touch with reality.

The flow of the application as imagined by them is as follows:

1. A student should be able to enter her study goals and the number of hours she plans on studying the subject per week.
2. She should be able to plan a schedule to meet her study goals.
3. She should, at any point of time, be able to view her planned schedules and how much of it has been completed.
4. She should also be able to view her weekly schedule in a calendar.

Our proposed application, Study Tracker, will take in a student's study goals and schedules and set up a personalised dashboard. The student will be able to view her progress, goals met and upcoming study sessions on the dashboard. It will also allow the student to update her study plans as well as tweak the schedule. If she is unable to complete planned study sessions, she can always reschedule it to a later time.

After further discussion with Dr. Balester and Mr. Slack, we came up with the following stories to begin with:

Stories :

1. **Sign up to Study Tracker**

As a student
So that I can use Study Tracker
I want to create an account and sign in to Study Tracker with my TAMU email id

Points : 1
Status : Completed

2. Login to Study Tracker using TAMU mail

As a user of Study Tracker
So that I can view and edit my study sessions
I want to login to Study Tracker with Google with my TAMU email id

Points : 1
Status : Completed

3. Initial Setup Study Tracker

As a student
So that I can set up my study sessions
I want to add details of my subjects and study sessions

Points : 3
Status : Completed

4. Dashboard of Study Tracker

As a student
So that I can manage my study goals
I want to view my study schedules and current completion status

Points : 2
Status : Completed

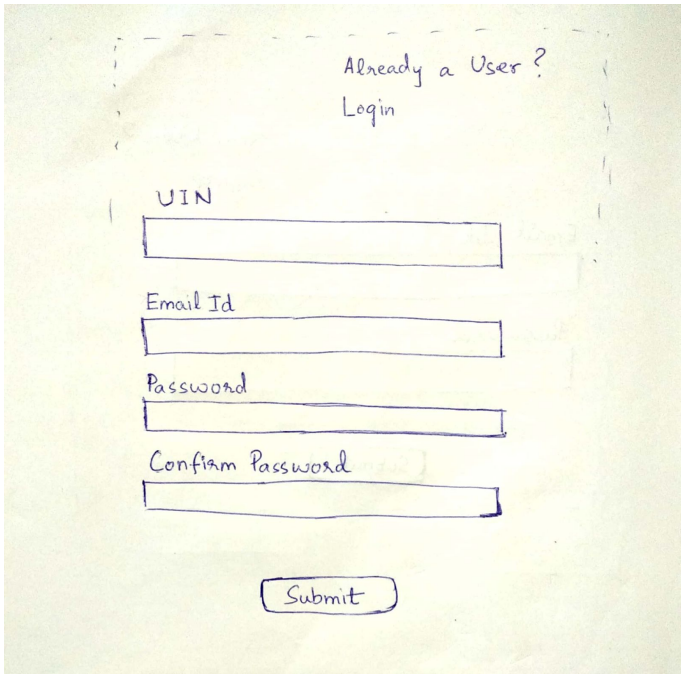
5. Verify Study Tracker Setup

As a student
So that I can start tracking my schedule and goals
I want verify my study goals and schedules

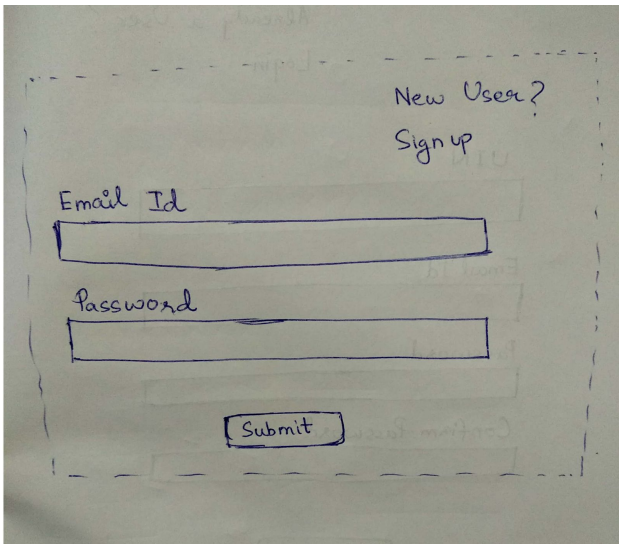
Points : 2
Status : Completed

After agreeing on the stories, we came up with the following LoFi UI with with the customer for Study Tracker

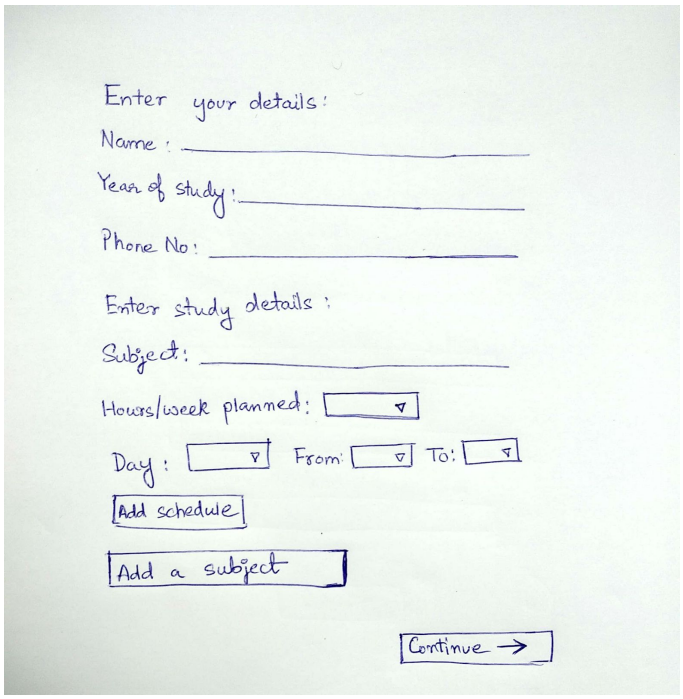
For Signup Page



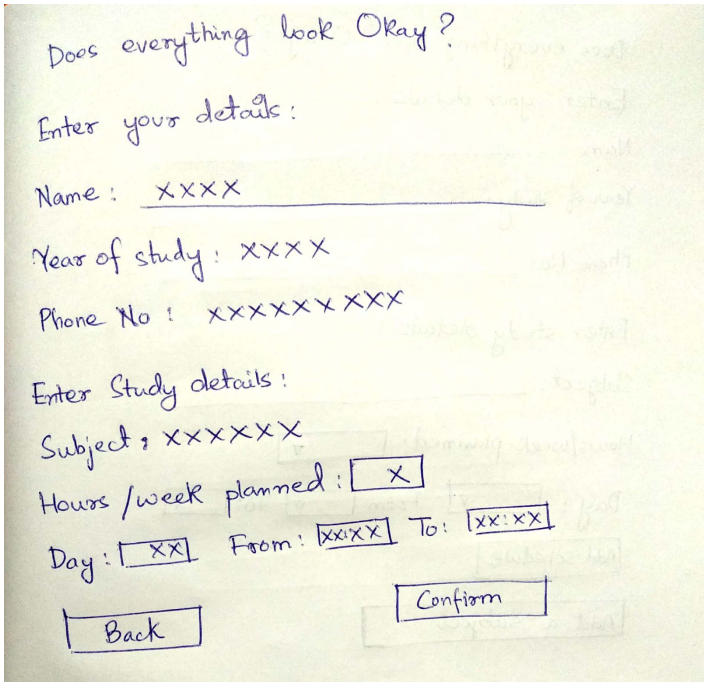
For login Page:



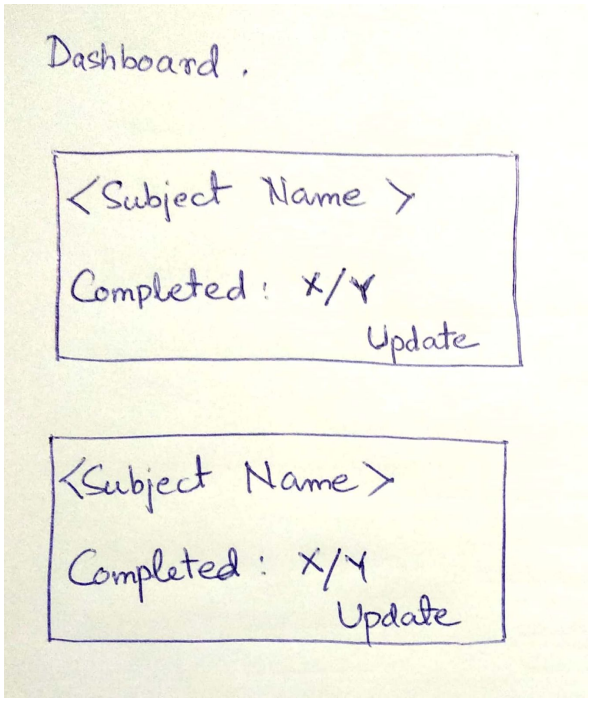
For creating schedules:



For verification page:



For Dashboard:



As time went past, there were significant changes in these LoFI UIs.

For iteration 1, we started with the story: **Login to Study Tracker using TAMU mail** and **Initial Setup Study Tracker**

We decided to use a third party login API so that the user can sign in only with TAMU Gmail id. Hence, there remained no need for a separate Sign In or Sign up portal. Also, there was no need for us to persist user credentials at the server side, which made things a little convenient.

We also decided to follow material design for our application.

Iteration-2

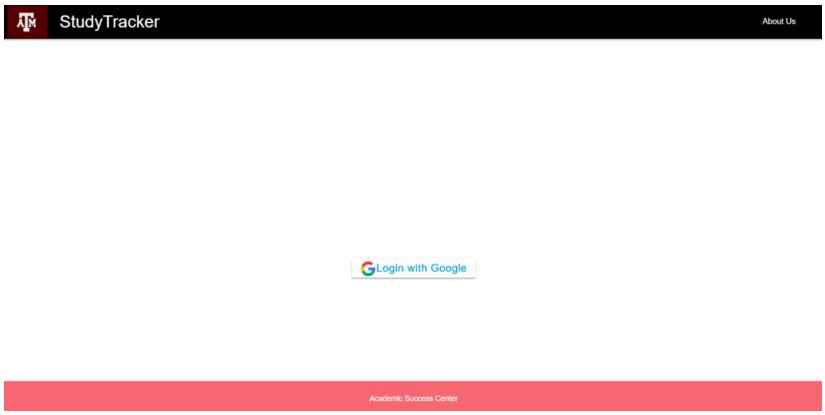
Date of Meeting :- 31 October, 2018
Place of Meeting:- Mr Slack's office, Academic Success Center at Rudder Tower

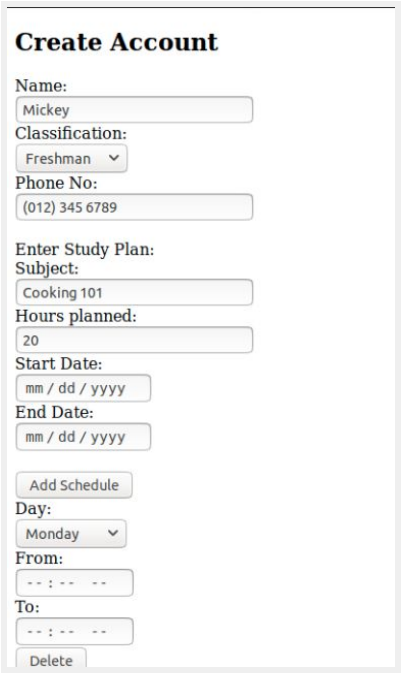
Scrum Master: Anurag Das
Product Owner: Manmeet Kumar

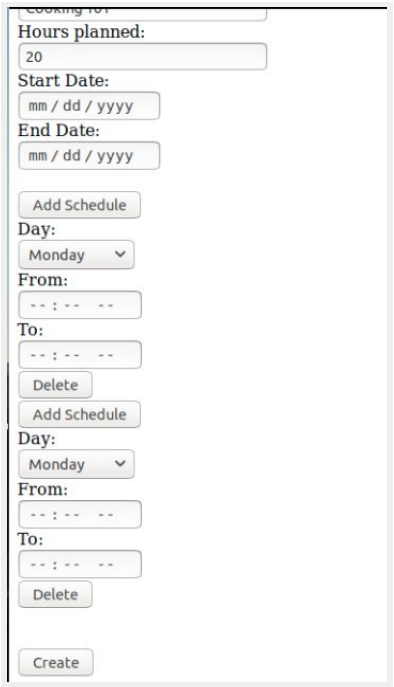
We met with Prof, Balester and Mr. Slack to update them with the progress made in the last iteration. By now, we had our database setup, roles defined, a functional sign up page and an outline of the schedule setup page.

The sign in page also linked to the Academic Success Centre's website through the "about us" link,

The study schedule comprised of a subject name, classification, an optional field to enter phone number, planned number of hours of study, start date, and an end date. A student could also enter multiple schedules for a subject spread over a week.







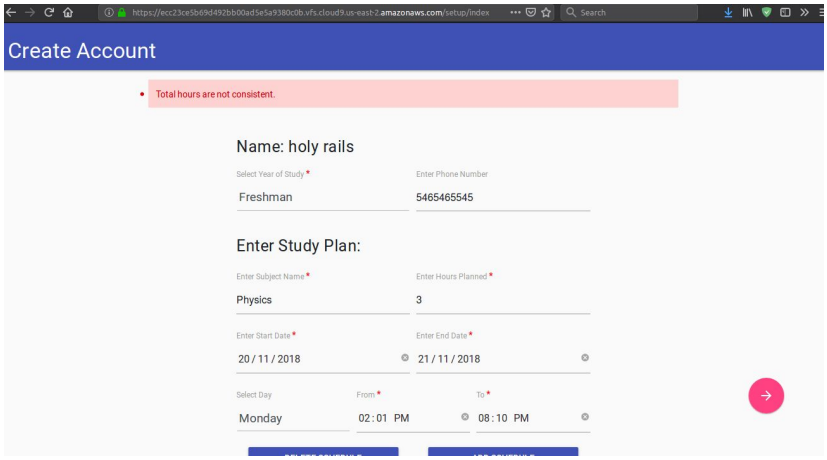
We also presented our customers a prospective layout of the dashboard page which they seemed to like.

Iteration-3

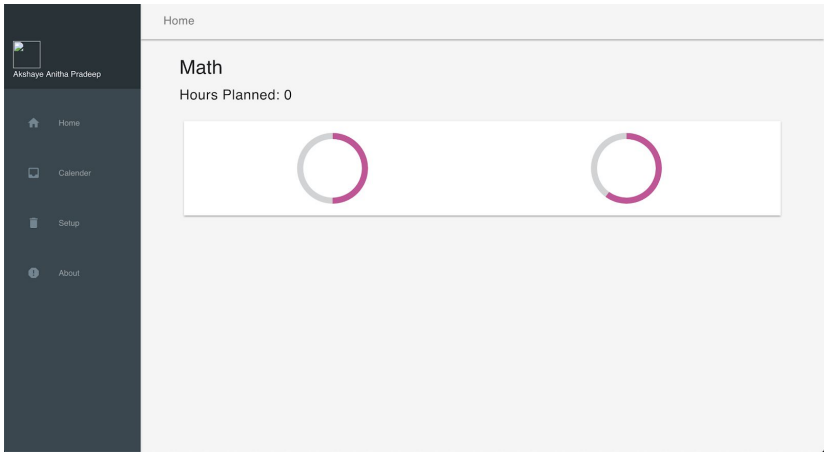
This iteration we could not meet with our customers.

In the last iteration we had implemented a basic idea for the setup page. This iteration, we build on top of it. We redirected the user here after login and with her name already populated using the credentials of the user entered while signing up. We have put validation checks on all fields. We do not accept empty subject and hours field. The start and end date also can not be in the past. The days entered by the user should be within the start and end date, and the time entered for multiple subjects should not overlap.

This finished our **Verify Study Tracker Setup** story.



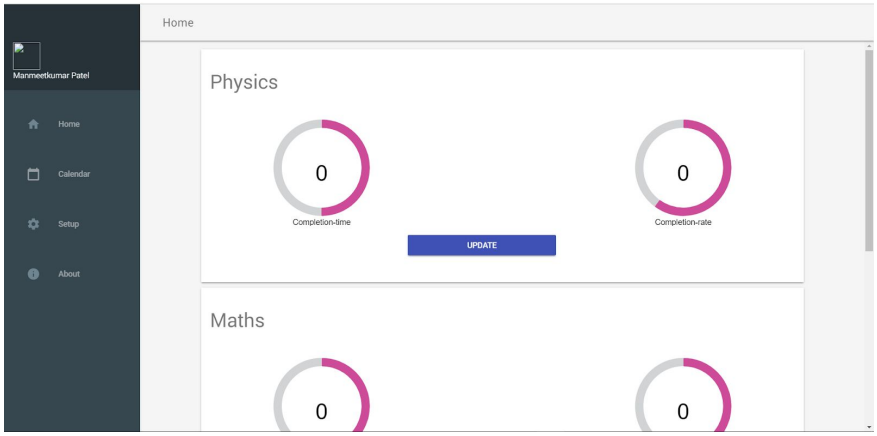
We also started working on the the story **Dashboard of Study Tracker.** This is how it looked like when we began working on it.



Iteration 4

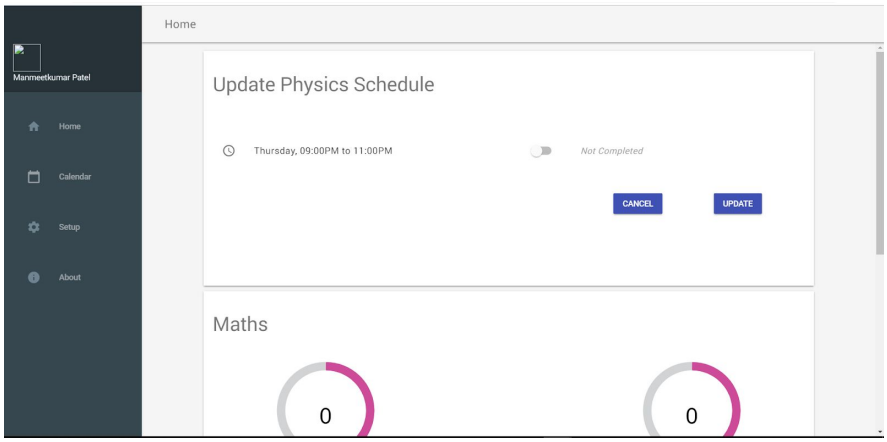
Date of Meeting :- 30 November, 2018
Place of Meeting:- Mr Slack's office, Academic Success Center at Rudder Tower

In this meeting, we discussed the final course of the application as this was our last iteration. We had already started working on the calendar and on the dashboard.

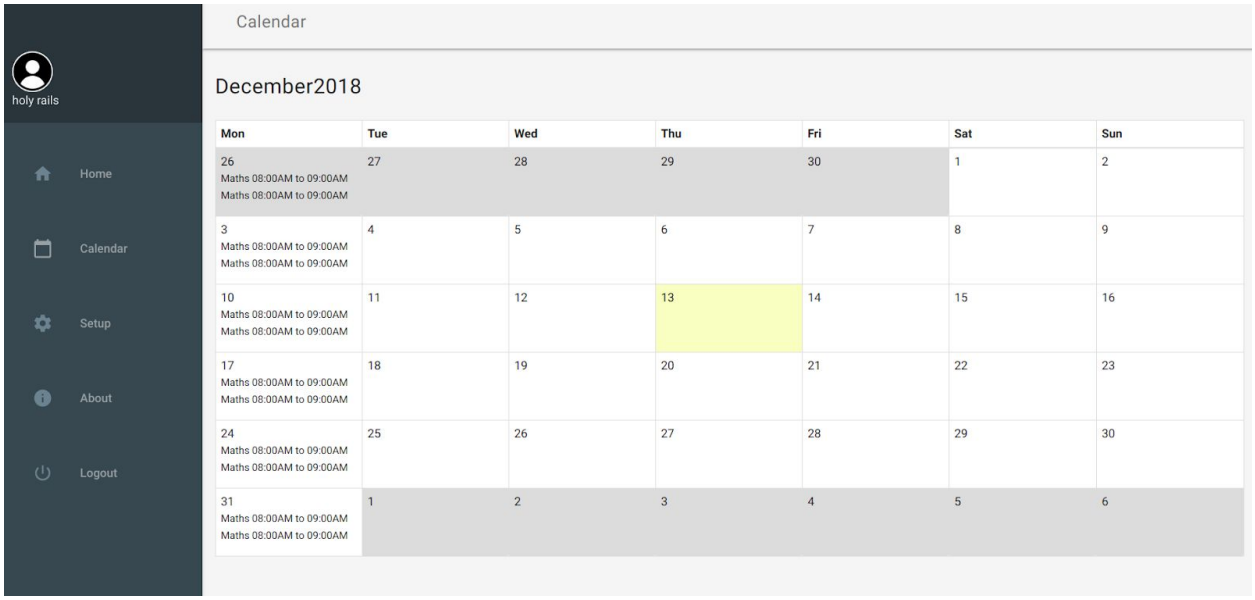


The dashboard shows the username, subject, their respective schedules and the corresponding progress. The progress is measured in terms of completion-time and the completion-rate. The dashboard also links to other pages in the application, like the calendar and the setup page.

Once an individual's study plan is entered into the setup page, it gets populated onto the dashboard with a summary of her progress. This shows up as in the above image. She can update his progress by clicking on the update button. Doing so generates the following view. Clicking update ensures that the changes are updated and entered into the database.



Calendar:



In addition to the above user stories, we have also included a calendar view in our application as shown in the figure above. The calendar view automatically populates information from the setup page. The information populated includes the subject name, the day and hours of study planned. We use the simple calendar gem for this purpose.

Benefits/Problems with the BDD/TDD Process:

We use Cucumber and Rspec for writing unit tests and validation tests respectively. For our implemented code, we observed a coverage of 70.2%.

Additional Comments:

During the course of the development of this application we used Slack mainly as a medium to share code and collaborate and Whatsapp for sharing messages and reminders. We didn't face any serious hiccups.

Additional Gems:

OmniAuth is a Ruby authentication framework aimed to abstract away the difficulties of working with various types of authentication providers. It is meant to be hooked up to just about any system, from social networks to enterprise systems to simple username and password authentication.

Simple Calendar(found here https://github.com/excid3/simple_calendar) for Ruby on Rails allows us to render a calendar for our calendar view, such that we do not have to download and install all the Simple Calendar assets our self.

We also used **Material Design Lite** (https://getmdl.io/) to add a Material Design look and feel to our application. It doesn't rely on any JavaScript frameworks and aims to optimize for cross-device use, gracefully degrade in older browsers, and offer an experience that is immediately accessible.

Future Work:

1. **Email reminders** : As per the requirements of the customer, users should be reminded of their upcoming study session. They should get a reminder on the day of their planned study. Unfortunately, we were not able to implement this feature in our project and it remains a part of the future work.
2. **SMS reminders** : Students enter their phone numbers as part of the information entered in the setup page. These numbers may then be used to text reminders on the day of their planned study, similar to email reminders.
3. **Integration of simple calendar with Google calendar** : The simple calendar gem used in our application, can be integrated with Google calendar in the future to keep track of multiple events.