

CSE 134B HW4 Write-Up

GitHub repo: <https://github.com/bpandayk/CSE134B>

Link: <https://cse134b-team-alpha.firebaseio.com/wireframes/index.html>

Dummy user: bpandayk@ucsd.edu

Dummy password: firewall1

Ashish Pokharel

Bibek Panday Kshetri

Eric Duong

The goal of this hw4 was to implement the CRUD. (C)reate, (R)ead, (U)pdate and (D)elele objects from individual profiles. Thanks to the firebase, the whole process did not seem like a rocket science. However, due to different experience levels and familiarity of the framework and technology of the members within our team, it would become somewhat difficult for a member to keep up with others.

We started off by trying to implement the Create feature. With reference to our wireframe design, this would be accomplished using a form to be filled out by a user after signing-in/signing-up to *MovieDex*, followed by a click to the Add Movies menu in the nav bar. The information provided by the user is to be successfully updated in the database, which was achieved using JavaScript, and following Firebase's quick-starter guide with provided database initializer code. With the concept of balance between developer experience (DX) and user experience (UX), that we learned during lecture, we decided to go with a design where the user does not have to go through multiple clicks to achieve a successful (Create). Therefore, in the form you will be able to see that, if a user does not provide with an appropriate input, we simply highlight those fields with "Red", instead of checking with the database (DX) or showing a dialog-box (UX).

(R)ead functionality was fairly simple compared to the (C)reate. It was the matter of validating the valid user Id and retrieving the path of the "user" node from the JSON object. After the retrieval, using specific data corresponding to the particular user the page was populated with texts and images using JS to replace the html.

Similarly, (U)pdate used the same concept except for the logics and functions provided by the firebase itself to update records in the database. Our part was again, just to populate the page using the html as string, and rendering through JavaScript functions. Any updates to any entries for the movies can be done after clicking on certain movies, sorted by genres. This navigates the user to another JS generated page, and displays the details of the movie he/she had added to his/her profile. Updates can be made thereafter.

As mentioned above, about different experience levels and knowledge within our team, we thought it would be unfair to generalize the developer experience and write about it. Therefore, we thoughtfully decided to allow each member to express their experiences during the completion expected functionalities.

The application performed in **15.37 seconds average** for **872 Kb** in regular 3G.

**** Tested in Samsung III -3G (100ms, 750kbps, 250kbps).**

Words from individual team members:

Ashish Pokharel

“ Although, with programming experience for quite some time during the course of UCSD, I had never had any hands on experience in making a dynamic web-application. It is a quite interesting project, and I would call it “cool” too. But, my range had pretty much ended after the completion of HTML, CSS by homework-3. JavaScript, JQuery, JSON, AJAX were completely new to me and only existed as buzz words in my brain. I went through tons of tutorials to have a better grasp of these, and I did. But i understood everything in pieces. Especially, with Javascript, although similar syntaxes to java, it’s rather different nature of declarations, in-built functions, libraries, types etc. confused me heavily over the week. For instance, the following code snippet from our project:

```
return firebase.database().ref(path).once('value').then(function(snapshot){
  console.log(snapshot.val());
  ret = snapshot.val();
  //...
```

It was difficult for me to understand things such as the return statement above which looks like a normal return, but as we see towards the right it has “.then” part, curly braces that imitate a function body with declarations within. Now, as I tried learning such concepts and applied to the project, frustrations arose when it did not render on the browser, and the console gave tons of errors which were again, new and bizarre to understand. This accounted for massive time consumption and stress, especially when it is about building a semantically correct, fast and effective web-app alongside compiler construction class in C++, and another project class which I am taking parallelly. Therefore, switching between three different languages and learning at the same time has been a fight. Being, a visual learner, jumping right into these languages and methodologies, I was not able to see the big picture of how it all fits together. Thankfully, one of our members, Bibek, had the experience in the technology, so he was able to come through and re-factor my codes.”

Bibek Panday Kshetri

“ My experience working for the project was satisfactory. I have had some experience in web-app development in few of my previous classes, which helped me alot to quickly implement the functionalities. Also, I am more familiar with Java.

Firebase was relatively new to me as I had never used it before, but thanks to google for making it so simple yet powerful. I even chose firebase for database for my other classes project. We had to change things around when we had to implement it as a single page application. Although, it made sense that it would be much easier and simpler this way, it took the most amount of time since we had all our HTML pages as separate files previously. Getting rid of all those HTML and then re-rendering it using javascript was tedious, yet effective job.

I do find it difficult to follow up discussions in Slack. I have been used to piazza for the entire time and, it becomes difficult to find relative thread of conversations. As I was doing the job, suddenly finding something or missing something, and knowing about it from fellow teammate caused few things to be changed after they had been already implemented.”

Eric Duong

“ From my perspective, this project can be broken down into several sections: html, css, javascript and the interplay that occurs between all three. When it comes to learning the basics of these topics, I didn't think that learning the basics of html, css or javascript were too difficult. At least those were my initial thoughts. When my team and I started getting more into the project and had a specific design and aesthetic in mind, trying to obtain this result was more difficult than I thought it would be.

The basics of html/css/js are one thing, but trying to account for mobile compatibility, spacing between elements and the layout, and the connection between these components required a lot of testing, tweaking and time. The css is both tricky and easy and there are so many ways to accomplish what you want. There are also so many little things that could screw up your implementation. Fortunately, there are things like bootstrap that can speed up the css process, though it shouldn't be used as a crutch. Learning javascript wasn't too difficult as it resembles java, which was taught in numerous courses at UCSD. We just needed to see the html elements as java objects. One of the biggest challenges was incorporating the three components together and one thing I learned was that a good, logical structuring of the web pages at the beginning can greatly reduce the stress and confusion later on when combining everything.

Additionally, using Firebase was great since they had many guides to help us do what we wanted to do. So far, the project has been both challenging and interesting. ”