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COS 420 - Childhood Immunizations
Iteration 5 Report
May 6, 2020

Technical Overview

Work Done by Each Team:

****A Note:** For the purposes of getting the database up and running, and given the team's collective lack of experience with web UI, the decision was made to join both teams into one and utilize "quad" programming. Times were set for the group to meet virtually while one person (usually Fazil) shared their screen. Group members would provide input, and would swap the role of "screen-sharer" as needed to get input and clarify issues.

Team One + Team Two: Fazil Shaikh, Calen Cyr, John Hofacker, Alexander Millett

Fazil, Calen, John, and Alex spent their time this iteration working to get a database up and running to hold the Immunization Register (ImmReg) objects. They first had to provide the database with the correct properties and get a working connection with the database. Next came developing a DAO to essentially replace the service class and provide CRUD functionality for the ImmReg Objects. Initially, the team faced some issues with getting a connection to the database. After resolving these issues and getting the create and update operations to work, the final issue involved getting the vaccine subclass to work properly with the database.

Significant Accomplishments:

Despite not being able to get the database setup completely running, the team was ultimately able to get two major CRUD operations working. They also made significant progress in learning how to properly import, configure, run, and deploy Google Cloud projects, and became familiarized enough with SQL to get the cloud DAO class set up for basic database CRUD operations, though there were some issues with getting all of the operations to work. Even if we weren't able to achieve our goal of getting everything to run smoothly, I *personally* am proud of the team for having tried as hard as they did. Everyone (myself included) sank hours into studying and learning this material. Given the circumstances, we can honestly all say that we tried our best to successfully finish this iteration.

Significant Issues:

Between having to learn the Google Cloud Platform, learn SQL, learn JSP, and debug for hours on end because we all ran into varying issues along the way, we weren't confident about getting the tasks in this iteration done from the start. Had we had previous experience and/or had guidance for how to deal with configuration issues sooner, we may have been able to get the rest of the CRUD operations working and committed to developing a simple Web UI for our web app. As it stands, we're disappointed that we were unable to resolve our program's issues before reaching the end of the iteration, but we're still proud of the work that we were able to get done.

Risk Assessment:

- **Lack of Experience -** Though everyone on the programming team had previously taken a database course, the collective lack of experience with using all of the various tools needed to migrate our project to the cloud led to us spending much more time this iteration learning how to use those tools rather than working.
- **Finals -** With the end of the semester approaching, it became much harder to schedule times to meet and discuss the project with the entire group. We also all found ourselves having to dedicate significant amounts of time to final projects for other classes, which again, impacted when and how often we could virtually meet
- **Coronavirus -** While remote work is possible, and sometimes preferable for some people, it has been a challenge for us as students to lose access to our on-campus resources, especially for this project. We all agreed that we would have greatly benefited from the in-class lecture and lab time. While I could go into detail on the numerous other impacts that coronavirus has had on our learning experience, we all felt that this was the most important. (We did also have a group member, formerly our group leader, who was still on the up-swing of recovery from coronavirus at the start of this iteration.)

Short-term Plan (If we were to continue):

If we were to continue working on this project, our short-term plan would be to debug the database and get a steady connection to it. We could then spend our time focusing on getting last couple of CRUD operations to work.

Long-term Plan (If we were to continue):

If we were to continue working on this project, our long-term plan would be to implement a basic web UI and implement a large amount of error checking. As it stands, neither our local project nor our webapp have any robust error checking in *all* parts of the program. This would need to be fixed were we to want to release our project in any kind of commercial setting. It's also just best practice for any good program, classroom setting or not.

Time Estimates:

The Use Case --

Use Cases	**Time Estimated**	**Actual Time Spent**
Successfully Create, Connect to, and Interact With a Database	16 Hours	~40 Hours

The Tasks --

Tasks	**Time Estimated**	**Actual Time Spent**
Setting Up the Base GCP	2 Hours	5 Hours
Configuring Project Settings (plugins, properties, etc.)	2 Hours	6 Hours
Creating the ImmRegCloudSqlDao	4 Hours	10 Hours
Debugging the Database Setup	5 Hours	15 Hours
Attempting to Create a Web UI	3 Hours	3 Hours