Project 2: Phase 4

Project Design Document

DataBased

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RETROSPECTIVE SURVEY

1. **Was the project fun and interesting?**
   - Maximiliano Robledo: Not really that fun to be honest. I found a lot of the work kind of tedious and uninteresting, but it was definitely a good learning experience. I would count it as interesting.
   - Michael Mengistu: I wouldn't say the project was fun, but I did find it interesting since I learned how to create a database and analyze large amounts of data.
   - Joshua Gonzalez: The project was more interesting than fun. This project provided me with a lot of insight into how projects might be handled when there are multiple people involved. While this may have not been my first choice for a project, I appreciate its purpose and the lessons I have learned from it.
   - Blaine Britton: This project was frustrating to an extreme sometimes, but overall I would put it at one of the more interesting ones. I could see myself enjoying the process far more if we had more time to do the project; the one-week deliverable deadlines were extremely demanding, especially since our other classes took up a great amount of our schedule as well.
   - Abraham Sanchez: It wasn't fun, but it was interesting because databases are very useful in the industry.

2. **Did it provide opportunities to innovate?**
   - Maximiliano Robledo: I would say that it did provide some opportunities to innovate. You can make querying from the database more efficient if you get crafty with the SQL, and how you implemented data structures and algorithms was very open ended.
   - Michael Mengistu: Yes, this project did have an opportunity for us to innovate since we had to design a GUI that needs to be able to connect to our database and be user-friendly.
   - Joshua Gonzalez: Loads of opportunities. For one, I did not know Java before starting this project. Additionally, I did not know SQL as well, so just by participating I was able to pick up two new languages. I also learned what things to consider when designing a database and how to manage large amounts of data. As far as soft skills go, I also learned how important it is to communicate with team members about what needs to be done, what's being worked on, and what we as a team need to consider in the near future.
   - Blaine Britton: I believe that it had some innovation aspects. I tend to like strict and clear instructions and requirements when developing a project, especially group projects since different ideas can make the final product disjointed.

However the laxness of some of the instructions made it so that we could develop and innovate a unique solution as a team.
- Abraham Sanchez: When it came to the GUI, I suppose it did because that's where our creativity shined.

3. **What went well? What didn't go well?**
   - Maximiliano Robledo: what didn't go well was the constant rehashing of our old design due to a lack of information. I think that if we had the knowledge we had about what sort of deliverables were expected from the very beginning, development would have gone a lot smoother. What did go (relatively) well was the ability to learn relevant skills to help us later in the project.
   - Michael Mengistu: What went well for me was the initial design. What didn't go well for me was getting through all the security clearances to access our database.
   - Joshua Gonzalez: As a team, I think we were successful in coming together and figuring out what needed to be done before working on the project. Additionally, I think our team was very good about helping each other out when needed and communicating our constraints placed on us by our other courses. The only thing I would change is how project delivery was handled. While understanding that this project was intended to model a "real-world" problem, it would have been nice to have some sort of "communication" with the client. At times, it felt like our team was working in a vacuum because the requirements were very vague and, realistically, these could be ironed out with the client before assigning a team to work on it.
   - Blaine Britton: Overall, our programming came out pretty well. I am mostly satisfied with the quality of our GUI programs. Our database design could be improved for efficiency, but it is well-organized overall. Our initial design document didn't go well, as there were a lot of things that we did not understand due to vagueness of the instructions, or did not correctly implement for future design due to a lack of foresight. Starting the design document earlier would have helped improve its quality, however.
   - Abraham Sanchez: I think our GUI looks nice considering we didn't know anything about this at all, however the whole process felt really forced and difficult,

4. **What lessons did you learn that you would share with your team?**
   - Maximiliano Robledo: I would like to share that help should be encouraged. We are all in this together, and sometimes a fresh set of eyes can help you get through whatever rough patch you are in. Things can progress faster sometimes if things are done this way.

- <u>Michael Mengistu</u>: The lesson that I learned is that it is helpful to comment the changes you are making in the source code.
- <u>Joshua Gonzalez</u>: I learned that the most potentially problematic part of team projects is communication. Whether it be scheduling a time to touch base, making sure everyone is up to date on what changes have been made to the source code, comments in the source code, it all matters. Communication can make or break a team.
- <u>Blaine Britton</u>: I learned a lot about database management and the need for efficiency in large data sets. I wish I could have done more to make my queries more efficient, though. I learned that sometimes you need to step up and do the hard things when it doesn't look like anyone else can do them, or if no one else wants to do them.
- <u>Abraham Sanchez</u>: I should focus on group projects first because they affect others.

5. **What one topic do you want to make sure we address in the retrospective meeting?**
   - <u>Maximiliano Robledo</u>: I want to be sure to honestly discuss what things could have been done better whether it be in actual code or in team organization
   - <u>Michael Mengistu</u>: The topic I want to make sure we address in the retrospective meeting is if we completed are assigned questions for phase 4.
   - <u>Joshua Gonzalez</u>: I want to go through the project's timeline as a team and take a note of things we would have changed or kept about the project.
   - <u>Blaine Britton</u>: I would like to talk about all of the progress we made and topics that we learned about. I'd also like to touch on what we could have done better, and how it can be fixed in the next project (if applicable).
   - <u>Abraham Sanchez</u>: We should work on pushing everything to GitHub properly.

RETROSPECTIVE DOCUMENT

Project overview

Overall, our team was successful in delivering a system that satisfied the requirements given. Our system consisted of a multi-tabbed graphical user interface (GUI) that users could use to connect to a database and perform operations on the data contained within the database. The operations a user can perform range from simple searches by a filter-like system to a complicated business-to-business user link lookup. As a team, we were successful in coming together and openly communicating our thoughts on the project. This was important because this allowed our team to remove most of the ambiguity surrounding a deadline's requirements. Since each team member gleaned something different from the requirements, we were able to synthesize all our thoughts into a clear vision of what needed to be done for the upcoming deadline.

Engagement analysis

The engagement as a whole was good and overall our team was very satisfied with the turnout of the project. Each of us was able to have an opportunity to innovate their ideas into the design and implementation of the GUI. A lot of the challenges that were encountered were making sure that the units that we were individually assembling meshed well together, and that ideas and work were communicated successfully. Additionally, a huge challenge of this project was trying to optimize our work to remain flexible for the unknown requirements of the next deliverable. As a result, solutions to these problems were often very open ended and left for lots of room for modification with various data structures and algorithms. Whether it be a crafty SQL command or some form of search optimization, opportunities to innovate were abundant. The development of the GUI especially gave us innovative ideas concerned with tackling the requirements while also adding our own unique approach.

Product analysis

The final product was successful in satisfying the requirements of the deliverables and applying our unique solutions to problems. We learned a great deal about GUIs and database management, especially concerning large amounts of data and time-consuming queries. As data becomes extremely large, it becomes even more important to efficiently manage and effectively organize data in a way that most minimizes the costs of queries. In future applications, this mindset will be necessary for developing software and databases in order to ensure that our programs don't run excessively slow as time progresses. We could have improved our own programs to be more efficient by adding more indexing for our tables, breaking up larger data tables, and creating more efficient algorithms concerning our queries to the database. Our latency is acceptable by the project requirement standards, but not so much in a real world application, when

programs need to query a database, process the data, and present it to the user in a very short amount of time.

Work analysis

It can be generally agreed on that overall the team is proud of what has been set forward. We may have been skirting the deadlines a little close at times, but we all value the experience that we have gained from this project. This is not to say that what we have made is great or perfect, but rather that our efforts were definitely not wasted. We could have handled the communication aspect of this project a little better by confirming that everyone is on the same page. Additionally, the maintenance of forward progress is something that could have been improved upon. Something that we all have gotten right I believe is the division of labor. As the project continued, the labor was divided more evenly and efficiency was increased.

Key points to remember for future projects

One of the things that this projected cemented for all of us is the importance of good communication within a team. Knowing exactly what was going on and stating things clearly is definitely something that all of us will take to heart for next time. We also could have benefited from setting our own deadlines instead of waiting for the creeping urgency of the actual hard deadline. If we had done this, the team could have more accurately gauged time estimates for the final deliverable. We have definitely learned that you can't accurately gauge the effort or difficulty of a project until you are down in the mud yourself.

Work effort analysis

Overall, our team worked more efficiently when we worked on things together than individually. This is in large part due to others having more experience with certain tools than others. When someone was less experienced in a field, they could quickly ask questions to other group members to get a better understanding of how to use these tools. As the project started to become more code oriented, we were able to divide the work more easily, and this is when we started doing tasks individually. Ideally, our team agrees that we would have worked on a project deadline as soon as it was out, however, all of us were engaged in outside commitments that prevented us from doing this. Usually, we scheduled to meet up and discuss the new requirements five days prior to it's deadline. Towards the end of the project, this became extremely important as we were all doing different things. We agree that as a team we have learned that communication is very important for team projects: the better the communication, the better the team functionality.

RETROSPECTIVE MEETING AGENDA

Location:	Zoom		
Date and Time:	10/1/2020 4:30pm		
Attendees:	Maximiliano Robledo, Michael Mengistu, Joshua Gonzalez, Blaine Britton, Abraham Sanchez		
Meeting Objectives	Ideas for team choice question		
Agenda Item	Issues that Need to Be Addressed	Outcome	Next Steps
Team Choice question	Deciding on a question	Best questions: Which state has the most locations of a particular chain? Find the closest restaurant within a 5 mile radius, if not found find the closest one?	Assigning roles

Location:	Discord		
Date and Time:	10/2/2020 8:00pm		
Attendees:	Maximiliano Robledo, Michael Mengistu, Joshua Gonzalez, Blaine Britton, Abraham Sanchez		
Meeting Objectives	Assigning roles		
Agenda Item	Issues that Need to Be Addressed	Outcome	Next Steps
Assigning questions	Choosing who wants to do what question	Maximiliano Robledo: assigned question 3 Michael Mengistu: assigned question 4 Joshua Gonzalez: assigned question 1 Blaine Briton: assigned question 2 Abraham Sanchez: assigned question 5	Testing and debugging

Location:	Zoom		
Date and Time:	10/5/2020 8:00pm		
Attendees:	Maximiliano Robledo, Michael Mengistu, Joshua Gonzalez, Blaine Britton, Abraham Sanchez		
Meeting Objectives	Testing and debugging		
Agenda Item	Issues that Need to Be Addressed	Outcome	Next Steps
Test and debug	Test to see if our code is working correctly	Each members code is working correctly	Integrating our programs and Demo