

Group 15

Professor DeGood

CSC 315-02

May 3, 2024

Databases Project Report

There were many issues that we faced during this project. There were some issues in terms of the implementation of the database and then there were some general issues like the availability of all group members. At the beginning of the semester, we had a bit of difficulty with meeting outside of class since we all had different schedules and prior commitments that could not be avoided. As the semester progressed, we just decided to have a fixed weekly meeting and adding zoom meetings as we got closer to the deadline to make sure that we will be able to meet the deadlines provided. In terms of the problems we came across throughout the semester with the database implementation, the first issue we had was the database schema. The issue we had with the database schema was that we were struggling with figuring out what parts and pieces of data we needed from the schema to implement our database. The confusion led us to make a schema that used all the data we were provided with even if we didn't need all of it. As the semester progressed, we came to realize that we didn't all the data provided and modified our initial schema to the one we currently have and is successfully being used in the implementation of our database / interface. Another issue we faced towards the end of the project was with the user interface. The issue was that we were struggling with Flask since we were all inexperienced and none of us had ever used it before. One of the main things we were struggling with once we understood the basics of Flask were connecting the database to the application. It was difficult

because there were a lot of minor things that were causing issues. One minor thing that was causing an issue was trying to import matplotlib into the application. Having the “import matplotlib” line in the file was creating issues in running the queries in the terminal, but once we deleted those lines the file was running fine and the queries were working. It seemed like a minor bug that was creating issues that were completely unrelated. In the last few days of the project, we discovered that there was a specific way to import matplotlib into Flask which might be why just having the “import matplotlib” line was throwing issues. Another thing we struggled with regarding the interface was adding the graphs. Our initial database proposal mentioned how we would include graphs for the average male and female birth weights in the user interface. We were struggling to access the matplotlib library required through Flask. In the final implementation of the interface, we were not able to implement the graphs and ended up having to scrap them altogether due to the difficulties we encountered. Another issue that occurred was with the images. We tried embedding the graphs we already created as images in the interface, but the python code for it, though very simple, was not working and only letting us embed pictures through a google image link and not through a file.

There are a few benefits to our project. One of the benefits is how user friendly the interface is. The interface is extremely straightforward and easy to use. All parts of the interface are labeled and descriptive. In terms of the benefits connected to the database itself, the database is designed to make the stakeholders lives easier and have easy access to information they would need pretty often. Our project is designed to compare average birth weights for a range of years from 2012 - 2023. This allows the stakeholders to look at the data from previous years and compare to current years and see what they can change to bring the average birth weight higher or continue doing what they are if it is already at what they want it to be. Our database also

allows the stakeholder to see if there is a correlation between the vigor score and the lifespan of a goat and the goats' average birth weight. This part of the database doesn't necessarily benefit the stakeholders in a major way but it is additional information that if the stakeholders would like to know, they have access to. Another thing we implemented in our database is giving the user the option to just check average male birth weights and average female birth weights individually. We implemented this to allow the stakeholders to have access to the average birth weights of both genders separately since the average birth weights for each year just combines all birth weights and gives an overall average regardless of the gender. This feature will benefit the stakeholder because it gives the stakeholders the opportunity to better understand what they can do to make a difference in the birth weights. For example, if the average birth weight for female goats in 2022 is lower than the average birth weight for female goats in 2014, they can take that information and take the necessary steps to be able to bring the average birth weight up. It would allow the stakeholders to be able to pay closer attention to the goats that require it and provide with the nutrients, vaccines, etc to make sure that they remain healthy and well.