Phase IIb - Project Proposal and Specifications

Group #7

2/15/2024

For our project, our partner suggested topic is going to be the progeny report, which is going to be a database that displays information about goats and get statistics based on this information. We also wanted to come up with a way to view the report for each goat using a more efficient method. For our own idea, we have decided to display a family tree using the information about their dam and sire. The family tree will allow the user to visualize the relationships between the goats. We will allow the user to click on a goat to view information about it and see their progeny report, and will implement a finding function, where the user can search for a specific goat, and it will find it in the family tree. We will also provide additional statistics and information about the network and make it easier for the user to navigate through all of these goats.

We will be gathering a lot of data to incorporate into our database. Our family tree will typically be following the dam since we usually will not know the sire, and following the dam will give us more consistent and accurate data. When taking a look at our family tree, we will display the EID and visual tag, and then if the user clicks on a specific goat, they will then be able to see more information like the date of birth, birth weight, weaning weight, winter weight, sale weight, dam number, and number of kids, and potential sire if we have that information.

With this data that is gathered, we also are planning to analyze and look for trends or correlations between these goats and family. We want to look at the data we have gathered, and see how it was affected by their genetic family history and family

line. The family tree is a good visual that looks at an easier way for people to navigate through these goats and it will make it easy to understand. Also, users will not have to go digging around for information. Also, we can then figure out other factors that affect the goats from the information we obtain from the family tree. We can explore why goats have certain traits or genetics, and we will be able to discover trends and reduce potential implications. This data can make our partners' goat line more sustainable, because the data will be more organized and simpler to maintain. Also, we can reduce potential implications, and it can be a positive change for our partners.

We want to be able to use goats for a wide variety of purposes in terms of sustainability, in terms of animals they can be used for food, clearing land and invasive plants, milk, etc. By using goats in more ways we can help feed more people. The main problem is just that not many farmers raise them in the United States, this is because we aren't typically accustomed to eating goat meat and therefore would not go out of our way to buy it when there are cows, pigs, chickens, etc. The fact is, goats would be a great animal to raise as they help clear land, eat invasive plants, offer food, milk, and there is an abundance of them. We hope to make it easier for our stakeholder to quickly and directly find information on a specific goat or family line. This will make the process of gathering data a lot more efficient. It may even make it possible to find trends and correlations on when is the best time to sell a goat, breed them, etc depending on their age, gender, weather, family line, etc. By doing so our stakeholder will have direct proof of why goats should be farmed more frequently and hopefully can become a viable food option or at least raised more to clear out farmland. This will affect other stakeholders in the farming industry. Those farming cows, chickens, pigs, and other livestock will be

threatened by the idea of a new food option they are not accustomed to. There are ethical issues with this problem as goats will be raised from birth to be grown for a purpose and then harvested for food. There are ethical issues with this, even though this is the same case for every other farm animal as they are used in the same way.

Use Case 1 - Viewing the progeny report of a goat via the family tree

A user wants to view the progeny report of a goat as well as its Dam and kids. In order to accomplish this, the user makes use of the family tree to locate their desired goat and its relatives before viewing their progeny reports.

Precondition: The user must be logged in to a verified account.

Steps:

1. Starting from the family tree view, the user must locate the goat they would like to view the progeny report of.
2. Once the desired goat has been identified, the user may view the goat's progeny report by clicking on its node.
3. After viewing the progeny report of the goat, or had the user wanted to view a relative instead, the user may look for their new desired goat by following the lines stemming off of the current goat's node to view their Dam (and Sire, if known) by following the lines leading above, or their kids by following the lines leading below.
4. The user can repeat steps 2 and 3 as many times as they desire.

Alternative Steps:

1. Step 1 (and possibly 3) can be replaced if the user already knows the EID or visual tag of any of the goats they are looking for by instead using the search feature to quickly locate that goat within the family tree, from there they can continue as normal.

Use Case 2 - Viewing genetic trends in the family tree

A user would like to view how a certain trait compares between members of a goat's family. To accomplish this, they will use a trait comparison filter to view the values of a trait for different goats related to a selected goat.

Precondition: The user must be logged in to a verified account.

Steps:

1. Starting from the family tree view, the user navigates to or searches for the goat they desire.
2. Once the user has located the goat they want to inspect, they can select a trait comparison filter for the trait they would like to compare.
3. The interface will then display each goat's value for that trait alongside their EID and tag information on their node.
4. The user can then either navigate to another part of the family tree to view the results for goats in that section, or they can repeat from step 2 with a different trait comparison filter.