

Group 5

Nick Valentino, Patrick Schaeffer, Kayley Harnett

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Our group chose to do Topic 5, which was to give each doe a rating based on how good at being a mother they are. Our goal for the data is to be able to quickly display which does are the highest rated mothers, and which are the worst in a given group. From the database given by Silvies Valley Ranch, we will incorporate the following data:

- Mothers birth weight
- Kid birth weight
- If Twins
- Milk rating
- Mothering score
- Kids' Vigor score
- Weaning score

Additionally, for our personal project we will be studying the link between a goat's date of birth and its overall health and vigor, as well as its sale weight. This can allow for better insights for how breeding during specific seasons can be used to maximize efficiency in goat production. We will be collecting the following data:

- Goat weight
- Goat birthdate
- Sale Weight

- Vigor score

Each data point will need to be assigned a score range. For example, the mothers birth weight will get a score of either three points for being below six pounds, or five points for being above six pounds at birth. Each of her kids will be evaluated the same way when we use the kids' birth weight data. The doe will also be rated differently based on how many kids she has during one pregnancy: a single child earns two points, twins earn four points, and triplets score three points. If the doe has a high milk rating, she will be given five points, whereas if her milk rating is low, she will be given just one point. Similarly, if the doe has a high mothering score (meaning she consistently raises healthy kids), she will earn five points. A low mothering score will fetch one point for the doe. Each kid is given a vigor score, and if the vigor score is one, its dam will earn five points; If the vigor score is two the dam will earn two points, and if the vigor score is three or lower the dam will receive no points. Lastly we will use the weaning score—if the doe weans the same number of kids she birthed she will be given five points, while anything less results in no points to the doe.

Using this data, we can explore which goats are the most effective mothers, and which should not be used for breeding. Because goats are animals that cannot be supervised 100 percent of the time, it follows that not every kid will make it to adulthood. Poorer mothers may lose kids at a higher rate, and without a rating to be able to easily separate the good from the bad, it is possible that bad mothers will re-enter the breeding pool, continuing to produce subpar kids. Consistently utilizing goats that are better mothers will produce healthier offspring, and will increase the size of the herd more efficiently than breeding goats with lower mothering scores. This will allow for the

American Range Goat to become a healthier and more viable species overall, and will improve the likelihood of buyers and investors working with Silvies Valley Ranch.

We can also determine whether goats born during a certain day, week, or month are more likely to sell for a higher price, which would allow the breeding season to be adjusted accordingly, creating more profit for Silvies Valley Ranch.

Therefore, our sustainability problem has to do with making sure that the children being birthed are going to be healthy and strong. Bad mothers will be more likely to lose their children. Our goal is to use the data we were given to help ensure that the only children being birthed are likely to be healthy ones. Producing subpar goats will be highly detrimental to Silvies Valley Ranch, as later down the line this may introduce bad genes to the population that may be perpetuated through the continued breeding of poorer goats.

Use case: Display Bloodline

1. User successfully logs into the system
2. User has correct permissions to view and sort charts
3. User navigates to the landing page
4. System displays a basic ranking graph of the herd
5. User selects a specific goat
6. System displays the bloodline of the selected goat

Use Case: Sort Table

1. User logs in

2. User requests a table (Point-rating or Astrology)
3. User will answer if they would like to specify precedence
4. System loads table
 - 3a. User declines

Go to 4
 - 3b. User Accepts
 - 3b.1. Specify 1st variable precedence
 - 3b.2. User will answer if they would like to specify subsequent precedence
 - 2b.2.1. Specify next variable
 - 3b.2.2. Return to 3 - b