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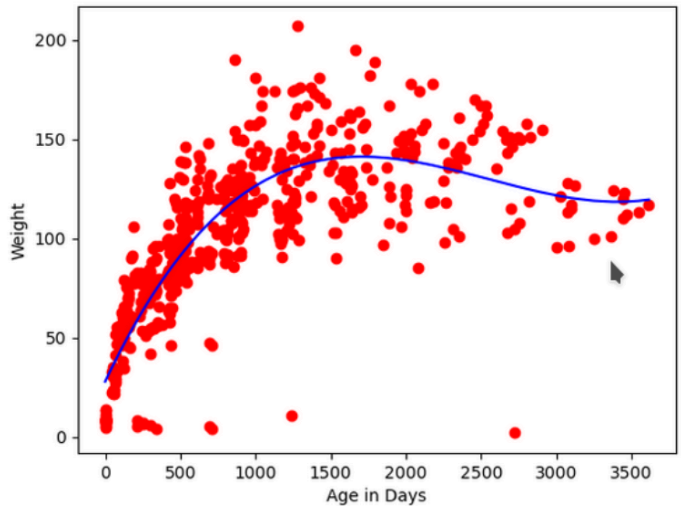
Final Project Report

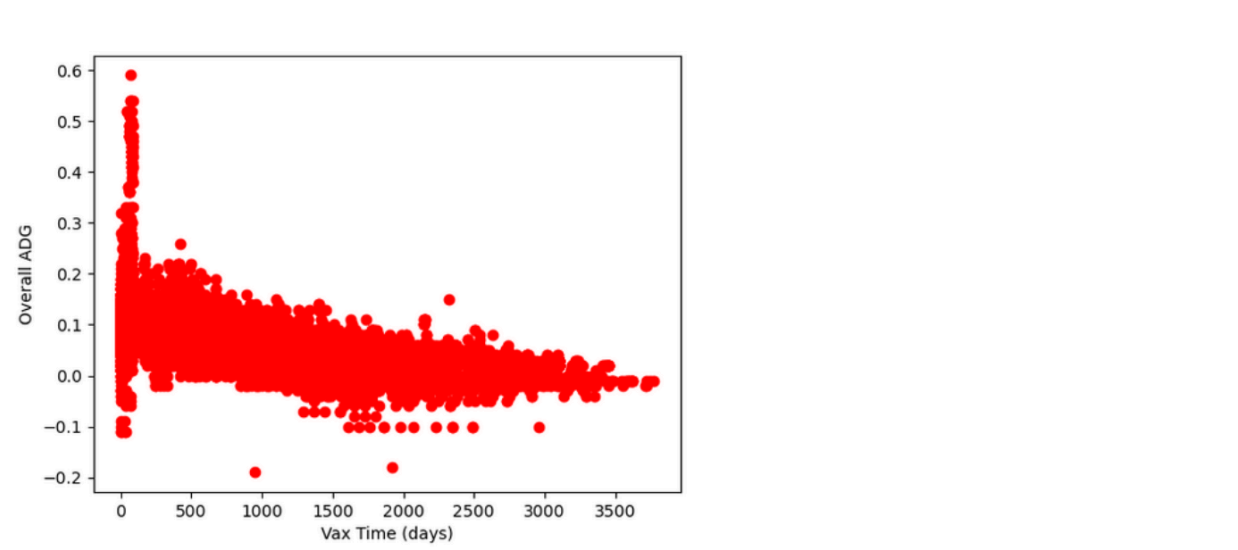
As goats grow to be more beneficial towards our environment, various things should be implemented in order to track the growth of these goats. This project is done to answer two important questions to aid ranchers in their work. The first research question provides a way to calculate the growth curve for the entire herd at any given time. The second determines the length between the date of birth and vaccination date, with which can predict impacts of the goats' growth rate and age when sold.

In order to answer the two research questions, we compiled data from the stakeholders and analyzed it. This project utilized birth date and weights, vaccination dates and weights, sales date and weight and the weight of any goat. These data were collected and created into temporary tables, in which we calculated the growth rate of the herd based on each goat's average daily gain. Each growth curve is generated by looking at goats from different breeding groups. By separating the herd by breeding groups, the rancher will be able to see the growth based on different aspects that each breeding group may have or exhibit. The result is a graph in which the x-axis represents the age of the goats in days and the y-axis is the weight of the goats. A line of best fit is generated using the scattered plots. This is especially useful for ranchers to determine a pattern in the growth of each breeding group and predict future growth rates. The data generated will help understand the growth rate of the herd and provide insight on when a goat may be sold. This will benefit the rancher in their goal to promote goat meat and prevent

any further dips in growth created by hazards to the goats. The following figure is an example of the first breeding groups:



Additionally, it is important to increase the survival of the goats based on when the goats were vaccinated from birth. The same data is used from the previous research topic, including the ADG of each goat. The graph generated includes the x-axis that represents the days since birth to the date of the yearlings' vaccination. The y-axis is the overall ADG. This data was included and the scatterplot is generated based on each yearling that has gotten vaccinations of any kind. In order to see specific vaccinations, a drop down menu was included, as well as a start and end date to see specific times. It is necessary to understand if the date between vaccination and birth has an impact on the lifespan and growth of the goats. Yearlings will be vulnerable to various illnesses. The results generated by the second query determines that the earlier the time of vaccination to birth, the higher the ADG and growth of the goats. The following is the graph generated, showing the ADG of the entire herd. This query is especially helpful for ranchers to determine when would be the most optimal time to give certain or all vaccines to the yearlings to maximize their growth and health.



The overall project aims to see the growths of the herd and if vaccinations play a part in extending the lifespan of the herd. Additionally, it hopes to be an easily accessible and user-friendly interface towards the various data provided. Users are allowed to see for themselves the growth of each herd and the benefits or demerits of when to vaccinate a goat. With this final product, we hope the ranchers will be able to have an easier time raising their herd.