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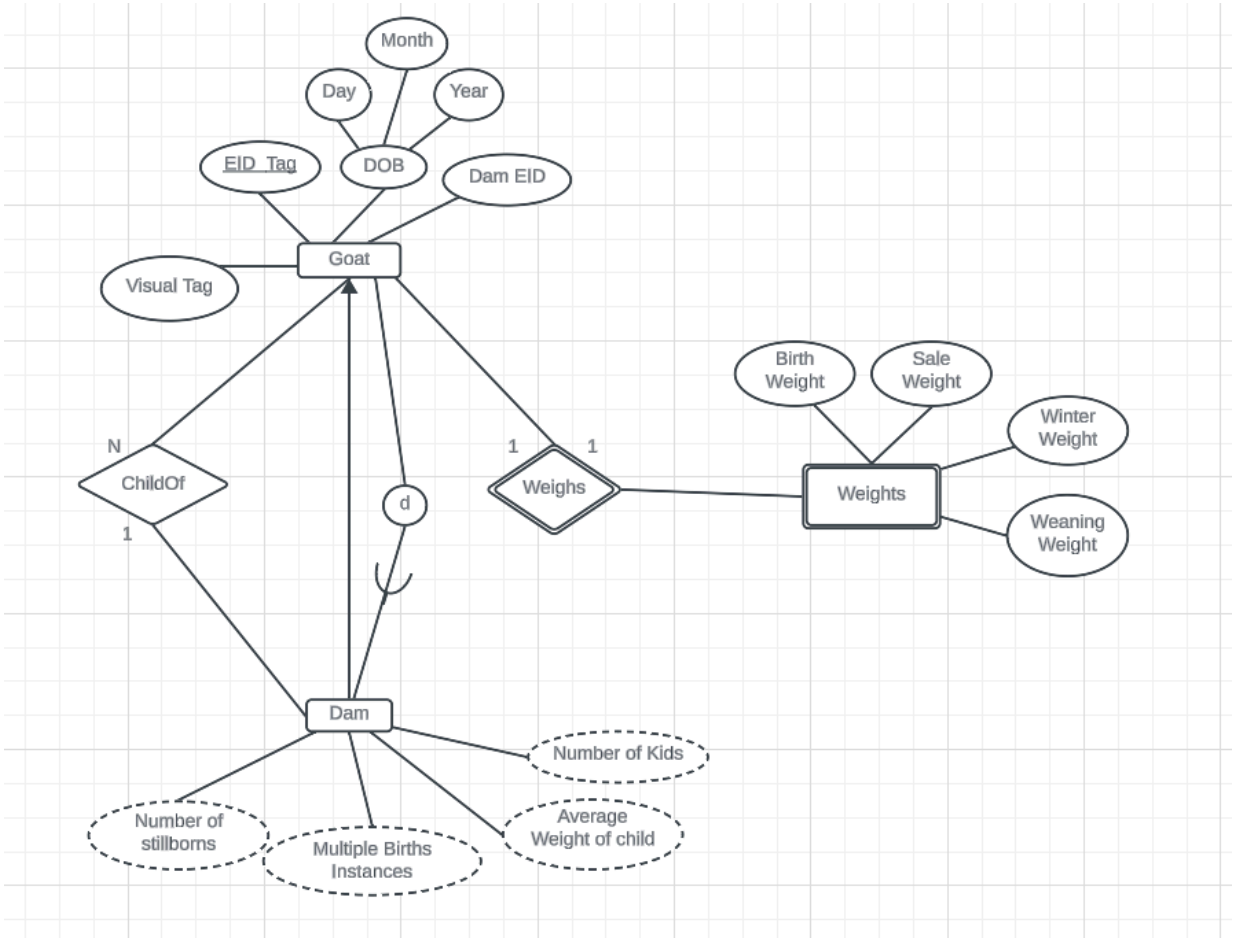
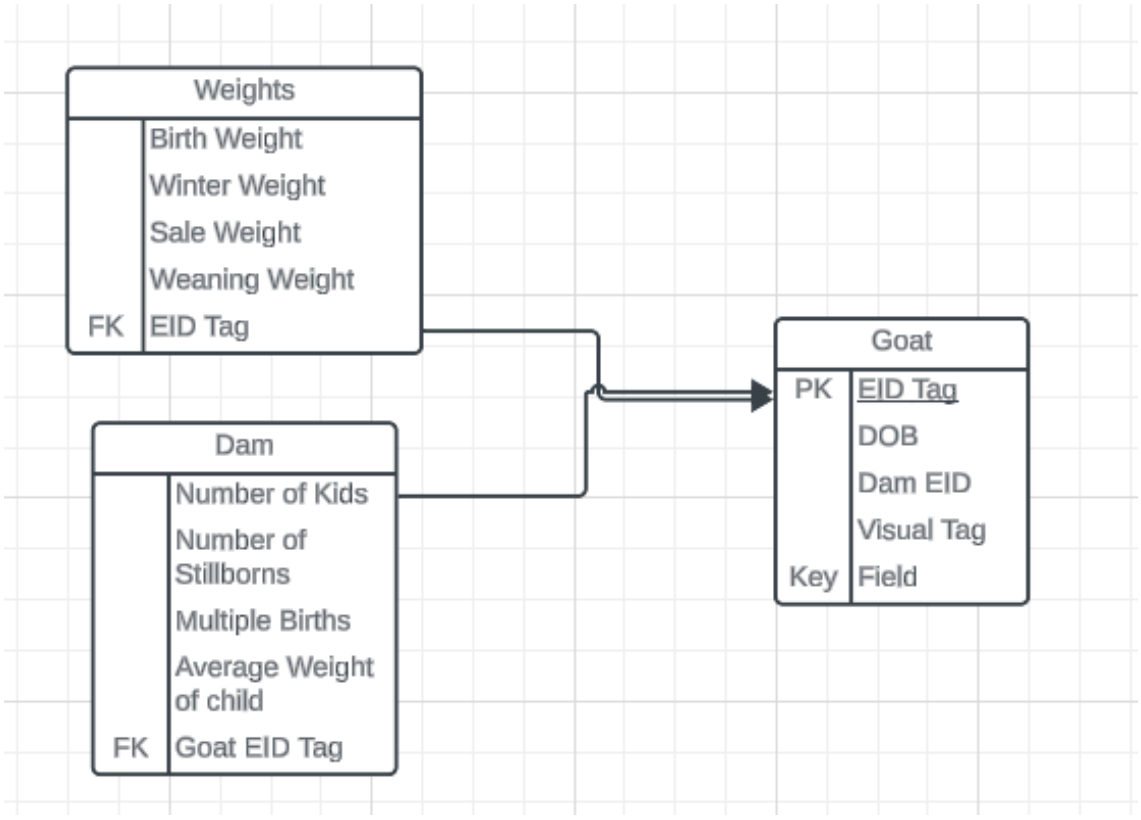
CSC 315
3/7/24

Phase III - Data Model: Progeny Report and Optimal Birth Period

ER Diagram



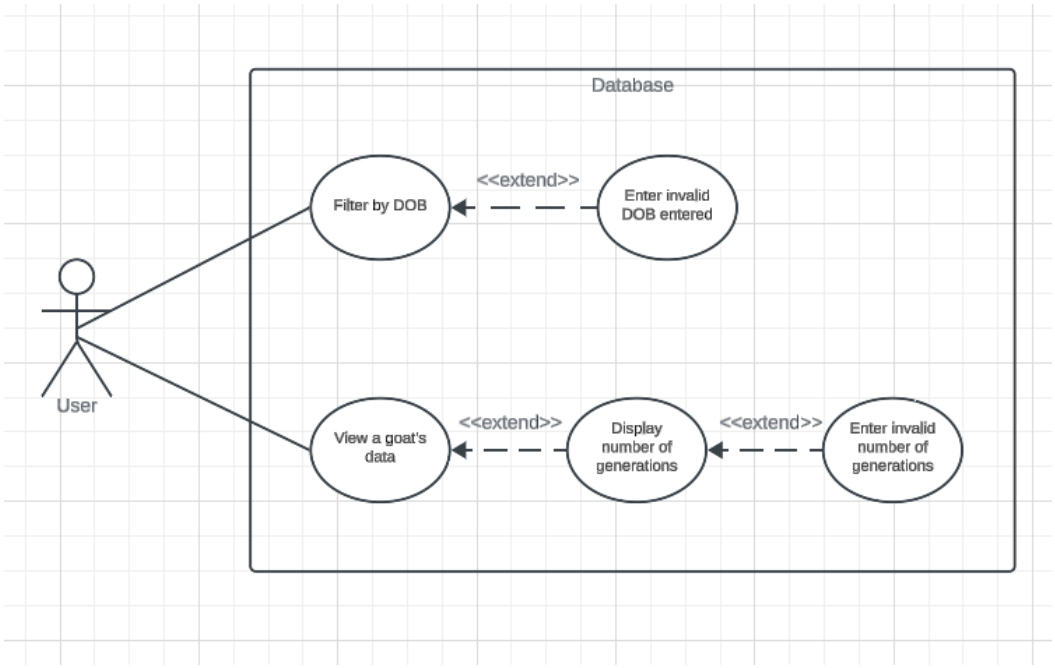
Relational Schema



Database Design Reasoning:

- To represent a Progeny Report of the Goat population, the entities Goat and Dam are connected by the relationship "ChildOf", which serves as a representation of a goat's lineage. The relational schema references this as a recursive relationship by referencing the Dam EID in the Goat entity, and placing the Goat EID tag as the Dam's foreign key.
- In order to determine the optimal birth period of the dam, the entities Goat, Dam, and Weight, were represented to organize the data in an efficient manner. For example, weights was made an entity to allow different operations to be executed on the different weight categories. This would aid in investigating information regarding optimal birth periods.

UML Use Case diagram



Estimate the following:

- Initial database size (estimated number of records * average size of a record)
    - The estimated database size is dependent on the population size of the goats and the number of attributes each goat contains.
- Search types and estimated number of searches required per entry
    - Search by EID Tag - 1 search for goats
    - Search by Dam EID - Recursive
        - For Progeny
    - Search by DOB - Month or Day or Year
        - For finding optimal birth session