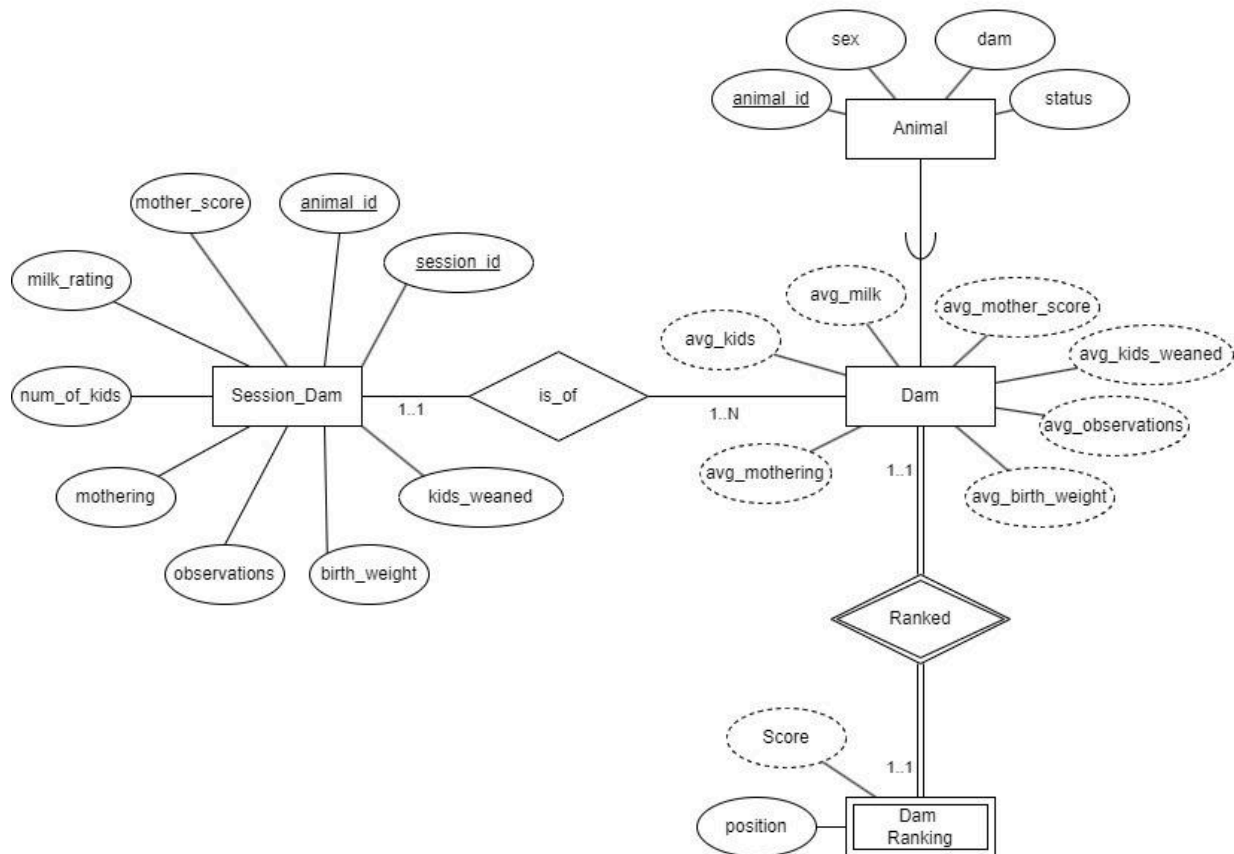
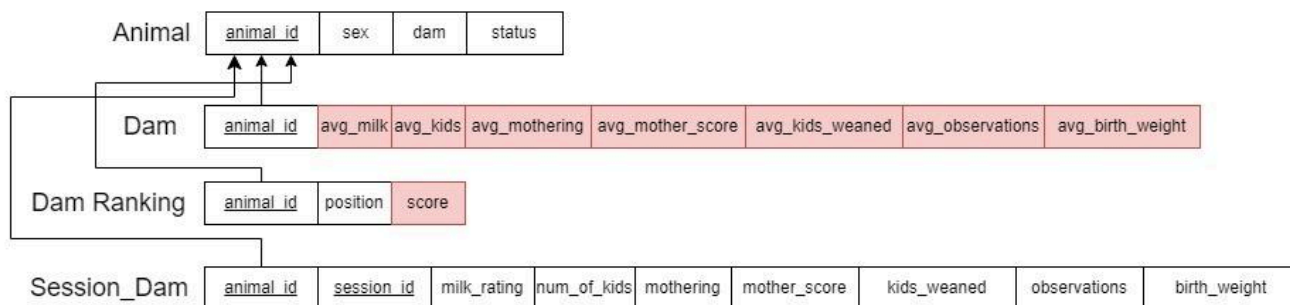


# ER Diagram

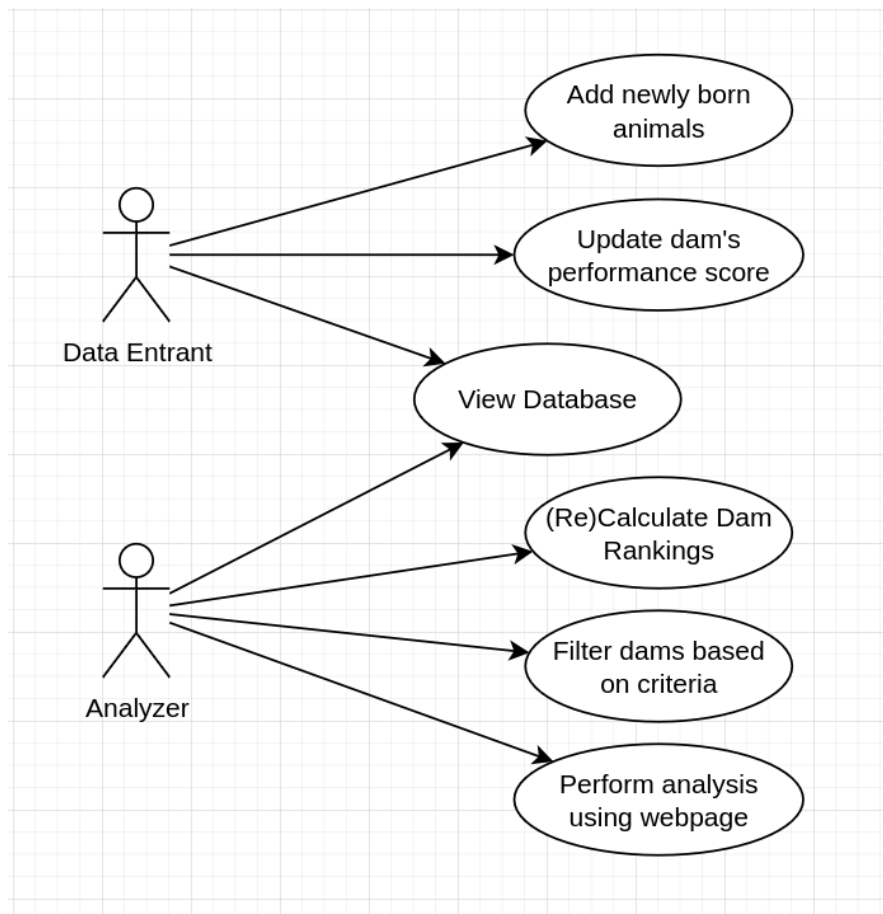


# Relational Schema

Derived attributes are colored in red



# UML Use Case Diagram



## Size Estimates

For the database size, we expect the “Dam” and “Dam Ranking” rows to be equal, as the relationship is 1-to-1 between the two. The “is\_of” relationship between “Dam” and “Session\_Dam” is a 1:N relationship. The “animal” relation will be reused from the main system’s database, and there will be fewer dams than animals. For example, if the “Animal” relation had 100k rows, we would expect the “Dam” relation to have  $< \sim 50k$  rows (since the ideal birth size is twins), or fewer since dams can have multiple sets of kids. Each Dam entry has 7 derived attributes, so the size estimate would be around  $7 \text{ integers} * \# \text{ of dams}$ . Each Session\_Dam entry has a few numerical values, so the average size would be around:  $9 \text{ integers} * \# \text{ of sessions} * \# \text{ of dams}$ . The “Dam Ranking” has only two numerical attributes, one of which is derived (score). The average size estimate would just be:  $2 \text{ integers} * \# \text{ of dams}$ .