UPPSALA UNIVERSITET

Li Ju
Linus Kanestad
Gustaf Andersson

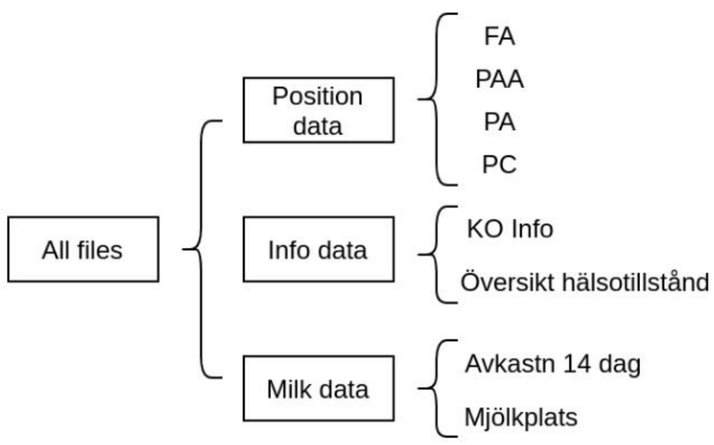
Under supervision of Keni Ren

SLU

Construction of a database storing cow information for SLU research

A research group on SLU is in cooperation with a Swedish and a Dutch farm collects data about cows. The data is used to investigate social behaviours, such as dominance and avoidance, and physical phenomena such as disease transmission. The data consists of position data, milk and health information. Position data is collected each second through tags worn by the cows.

Collected data:



Problem:

The collected data from a farm makes up ~1 Gb/day (~365 Gb/year) making it difficult to manage and conduct research on.

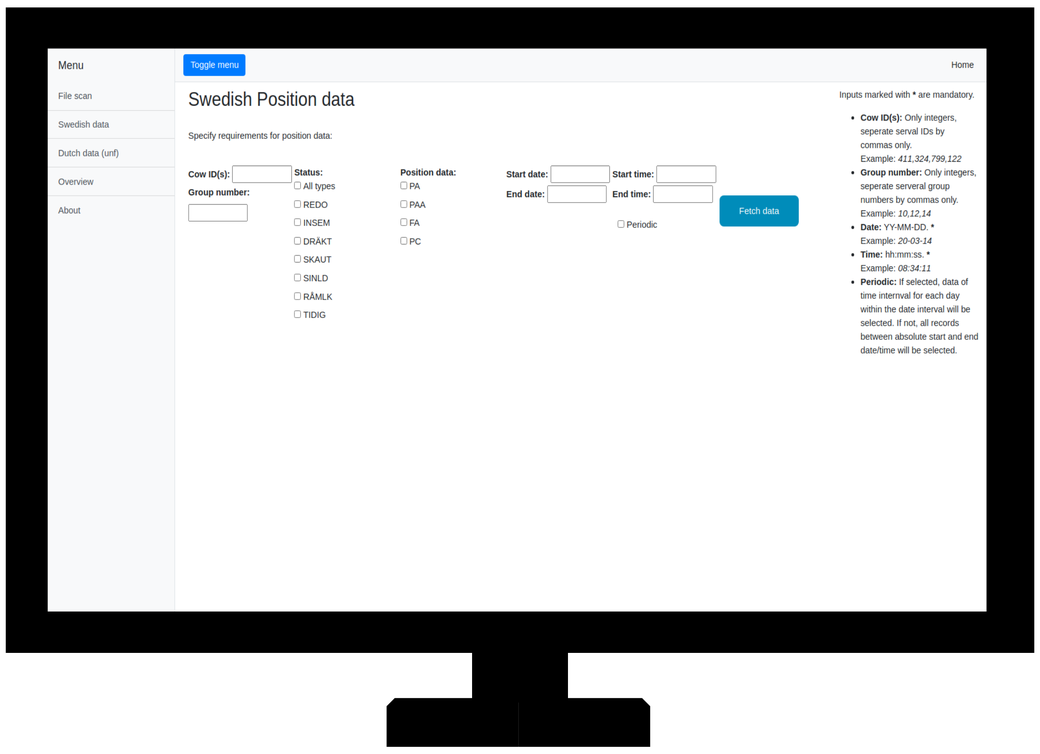
Requirements:

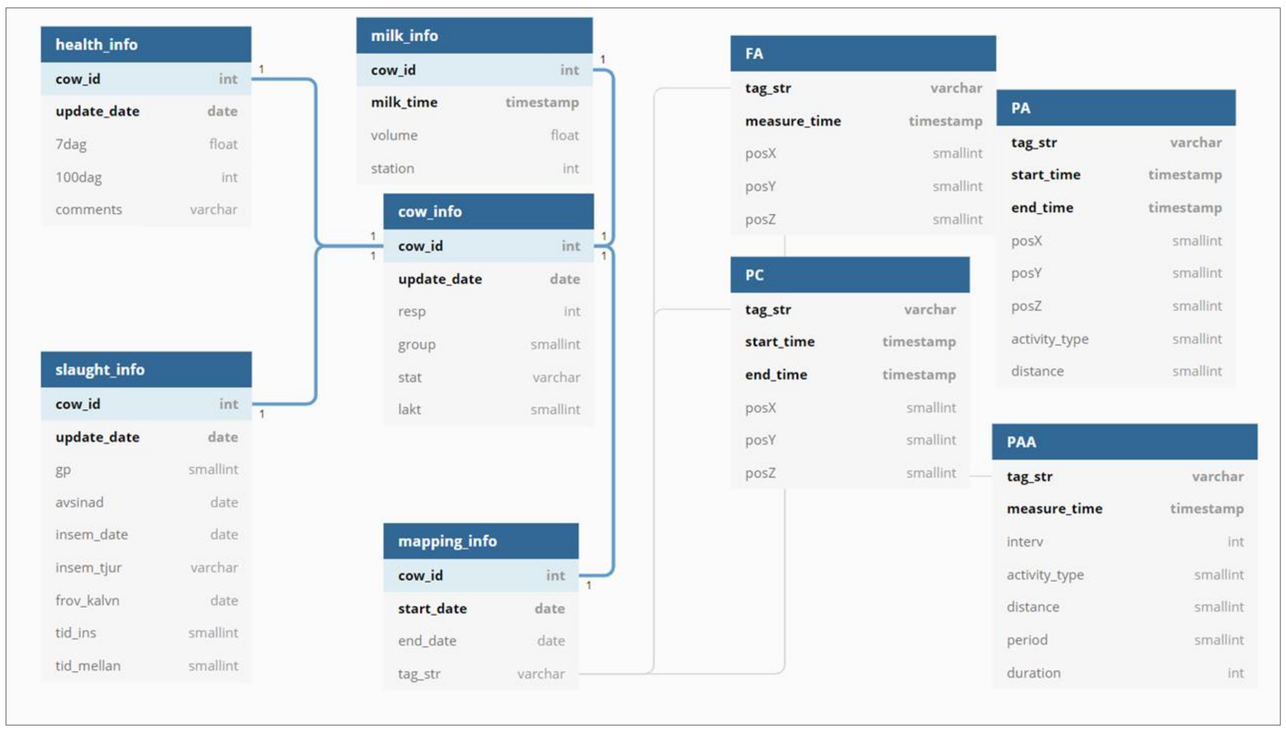
- **Efficient storage**
- **Easy access to interesting data**

Solution:

- **Database**
- **Web page access**

Results:



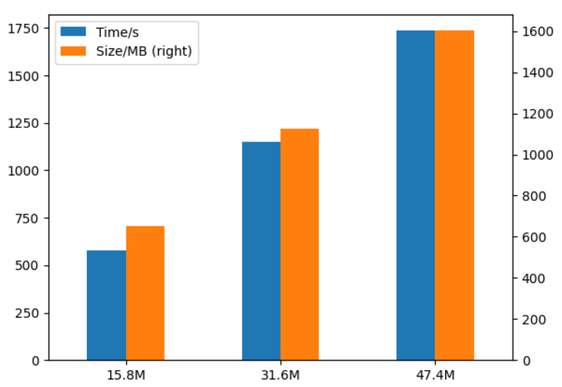


The figure displays the table structure storing the data. The *cow_info* table works as a central for communicating, referencing the other tables using cow ID and timestamp. The *mapping_info* table matches a cow to the worn tag.

Performance measures:

- Inserts 47.4M records (1.6 Gb) in under 30 min
- Queries three days of cow data in under 3 seconds

Insertion speed & Storage space



Query speed