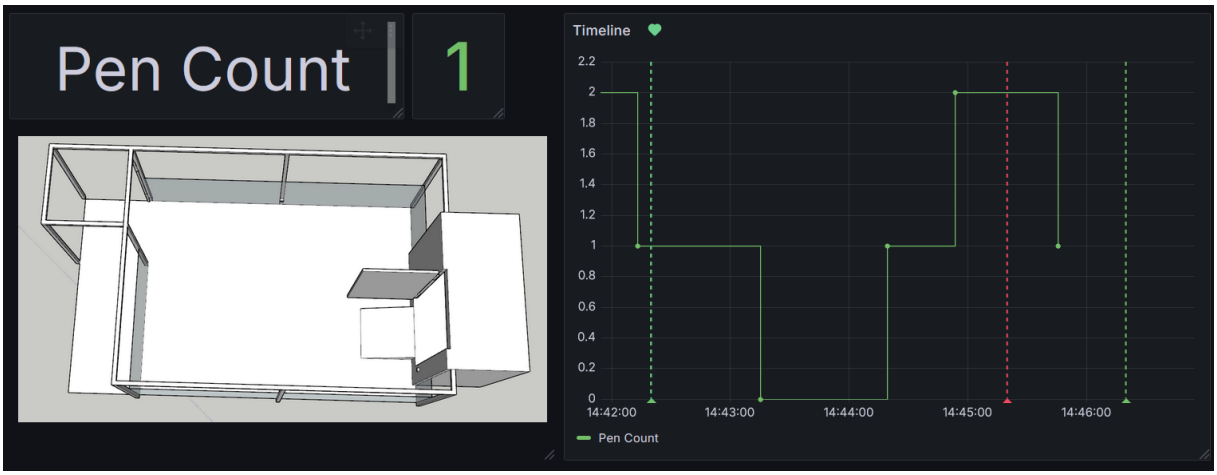
Proposal: “Livestock Bedtime Sensor“/ “Duck Pen Sensor”

Our primary goal is to track the movement of livestock, specifically ducks, to determine when they enter or leave the pen. To achieve this, we focused on utilizing two distance sensors. These sensors create a light-based tripwire system, which allows us to detect and track the direction of movement, whether the animals are entering the pen or exiting it.

To make the systems data easily accessible and interpretable, we implemented a Grafana dashboard for visualization.
The dashboard includes a top-down schematic representation of the pen, clearly displaying the current count of animals in the secure/closeable section. It also provides a log of past events, detailing each instance when the tripwire was triggered. This log includes timestamps and updates on the number of animals within the pen at those moments. They are shown as red and green Lines in the Timeline.



Grafana also allows us to send out an alert, either via a short massage or with an email to inform us that the animals have returned to the pen for the night. This notification policies can be modified for personal needs (amount of animals) or the timeframe.

By combining precise tracking with user-friendly visualization and notification, our system ensures real-time monitoring and historical insights, as well as a notification for closing. This solution is particularly useful for managing livestock efficiently, enhancing security, and providing valuable data for further optimization.