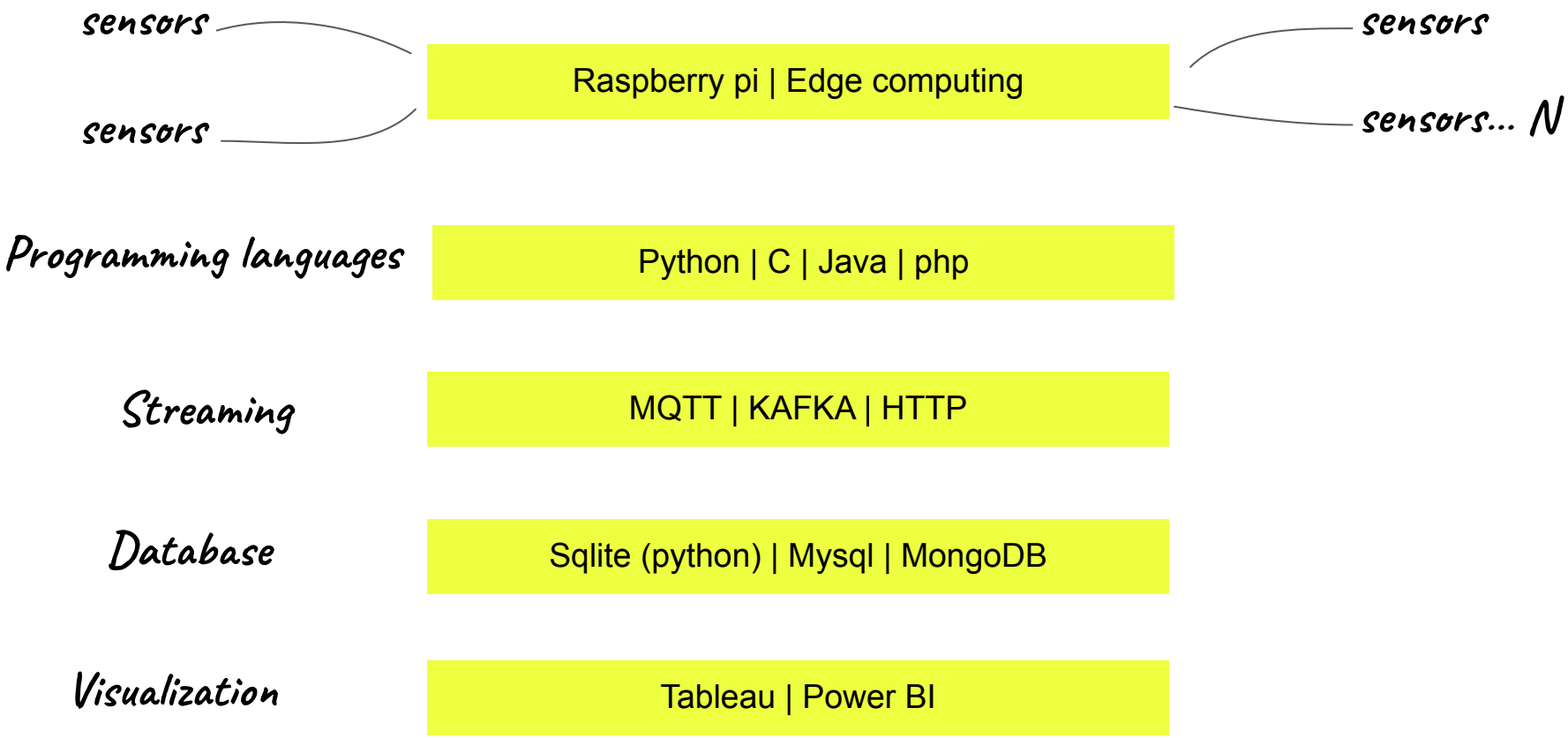
iOT Project
Sensor data analytics and prediction

WORKFLOW


sensors
sensors
Raspberry pi | Edge computing
sensors
sensors... N
Programming languages
Python | C | Java | php
Streaming
MQTT | KAFKA | HTTP
Database
Sqlite (python) | Mysql | MongoDB
Visualization
Tableau | Power BI

Raspberry pi

Dell edge gateway

Programming

Streaming

Database

mongoDB

Visualization

+ a b | e a u

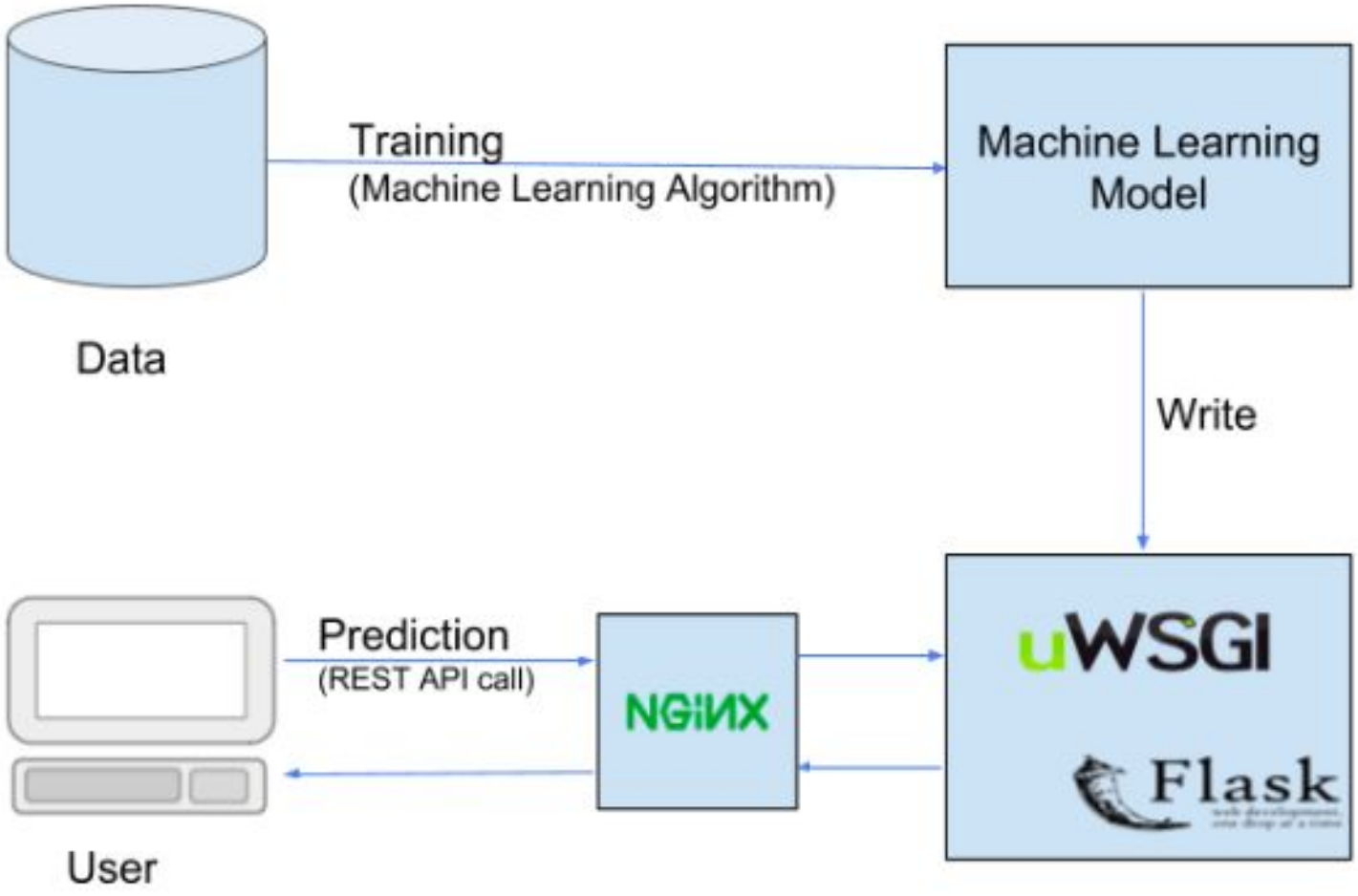
Implementing an end-to-end IoT solution

IoT is exploding in many industries not just consumer but industrial, energy, health care, transportation, and manufacturing to name a few. One thing common to all these industries and their scenarios is they all generate data and a lot of it. Data that comes from not just one sensor but a variety of heterogeneous sources all contributing similar but different data and metadata.

I can make use of that data and generate visualizations with KPI's and other useful Insights in the form of graphs and I use state of the art technologies like Machine Learning (which can predict the machine generated data and sense the output), Dockers & K8s…more.

Working with Raspberry Pi

Need to design a circuit (plot the sensors on the breadboard and connect it to the gpio pins of the microprocessor) once the requirements are satisfied, the designing phase is done. And need to do the optimal coding stuff related to the project and test whether sensor produces actual data into the database or not. Once it is done we need to schedule the process and repeat it over a particular period of time with the help of bash scripts. And do analyze the data with visualization tools and try to make predictions (I was trying with different models on our selected features and selected RNN as the best fit model as it gave an F1 score among all other models) and it’ll be perfectly suitable for Time-series data. This data is hosted on a web page so that our clients have ease of accessibility and ease of use...


Training
(Machine Learning Algorithm)
Machine Learning Model
Data
Write
Prediction
(REST API call)
NGINX
uWSGI
Flask
User