



# Project defense: IoT weather station

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# Summary:

1. Aim of the project
2. Project summary
3. Hardware & Softwares
4. Analyze IOT weather-station
5. SuperSet in trucking-iot

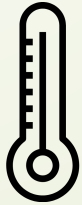
# Aim of the project

- Learning from new technologies
- Implementing them in a concrete case
- Useful in the professional world ?



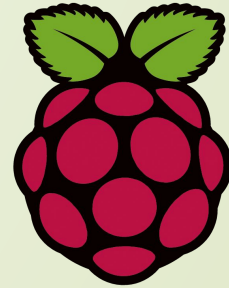
# Project summary Analyze IOT weather-station :

- Analyzing the data coming in from several weather stations using a data-in-motion framework and data-at-rest framework to improve monitoring the weather
- The goal is to show meaningful insights on temperature, humidity and pressure readings



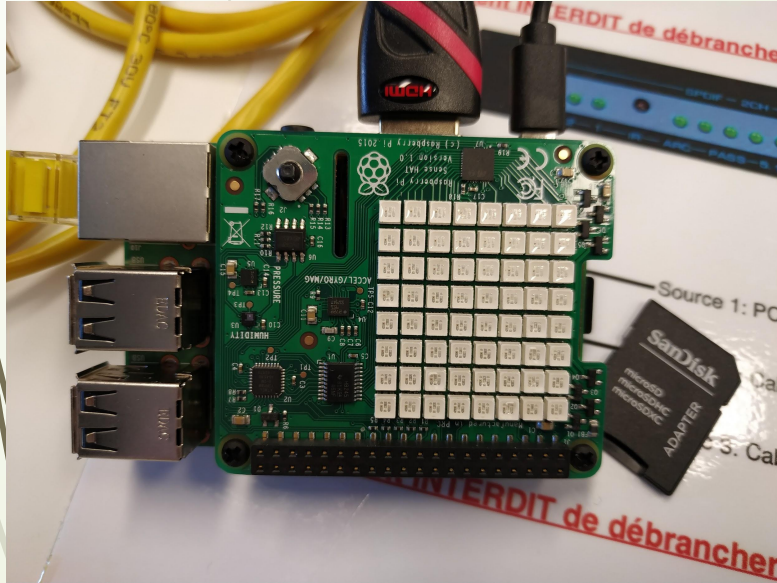
# Hardware & Softwares

1. Raspberry Pi
2. Hortonworks Connected Data Architecture(Hortonworks Data Flow (HDF)
3. Hortonworks Data Platform (HDP))
4. MiNiFi subproject of Apache NiFi
5. Raspberry Pi
6. Sense HAT
7. HDF Sandbox and HDP Sandbox on Docker
8. Hbase



# Raspberry Pi

Raspberry Pi setup and HAT sensor



VM setup and environment

```
The programs included with the Debian GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.  
Last login: Mon Jul  3 17:45:56 2017 from 172.16.167.203  
  
SSH is enabled and the default password for the 'pi' user has not been changed.  
This is a security risk - please login as the 'pi' user and type 'passwd' to set  
a new password.  
  
pi@raspberrypi:~$
```

# Configuration of HDF and NoSQL database

- ❖ Troubles with the HDF connection
- ❖ HDF / HDP no longer exists
- ❖ Tried to setup CDF / CDP from Cloudera but couldn't find any tutorials
- ❖ The datas could not be send to GeoLite2
- ❖ We decided to use some others raw datas obtained in another project



# Implementation of the script WeatherStation.py

- Get the IP adress and serial number of the Raspberry Pi
- Gather the datas from Sense HAT
- Calibrate the results from the processor heating
- Print the results in the consol





# Hbase Table

- ❑ Learn how to create and import a HBase Table
- ❑ Enhance NiFi Flow to Store Geo Data to HBase
- ❑ Verify HBase Table Populated



# Creation of the database

Access the Sandbox HDP

Create the table and attribute

- Download WeatherDataMiNiFiToHbase.xml
- Configure the NiFi process
- Start the dataflow to HBase
- Verify table have been populated

- Gathered datas from another IoT weather project
- Convert it to a csv
- Import in HBase via importtsv cmd

# Project summary **Superset**

- ❖ Analyzing the data coming in from several weather stations using a data-in-motion framework and data-at-rest framework to improve monitoring the weather
- ❖ The goal is to visualize meaningful insights on temperature, humidity and pressure readings
- ❖ Learn Data Visualization Concepts
- ❖ Become familiar with Apache Superset
- ❖ Learn to Design Visualizations with Superset

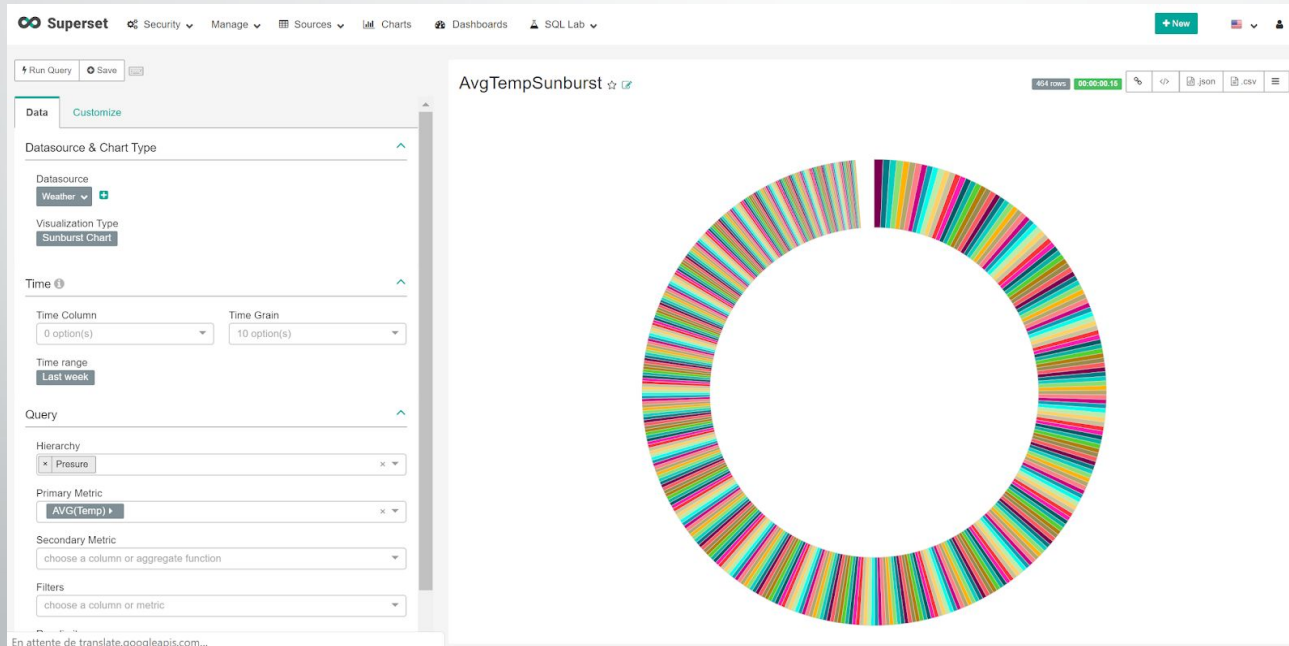


# Hardware & Softwares

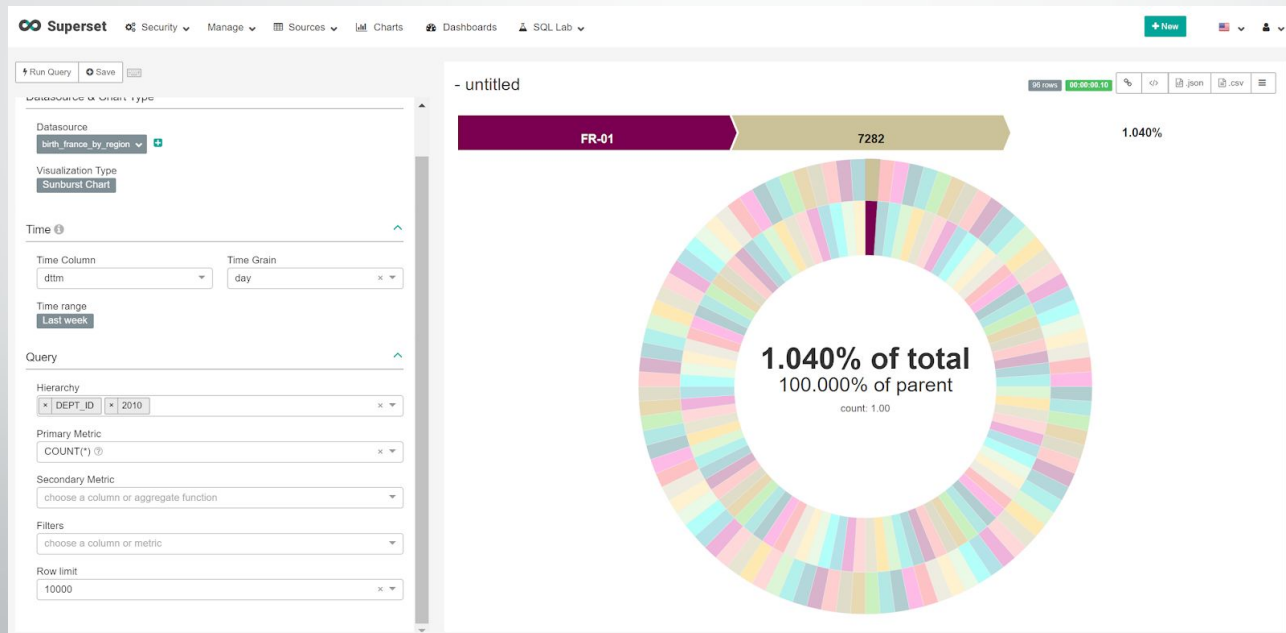
1. Hortonworks Connected Data Architecture(Hortonworks Data Flow (HDF))
2. Hortonworks Data Platform (HDP))
3. Druid
4. HDF Sandbox and HDP Sandbox on Docker
5. SuperSet



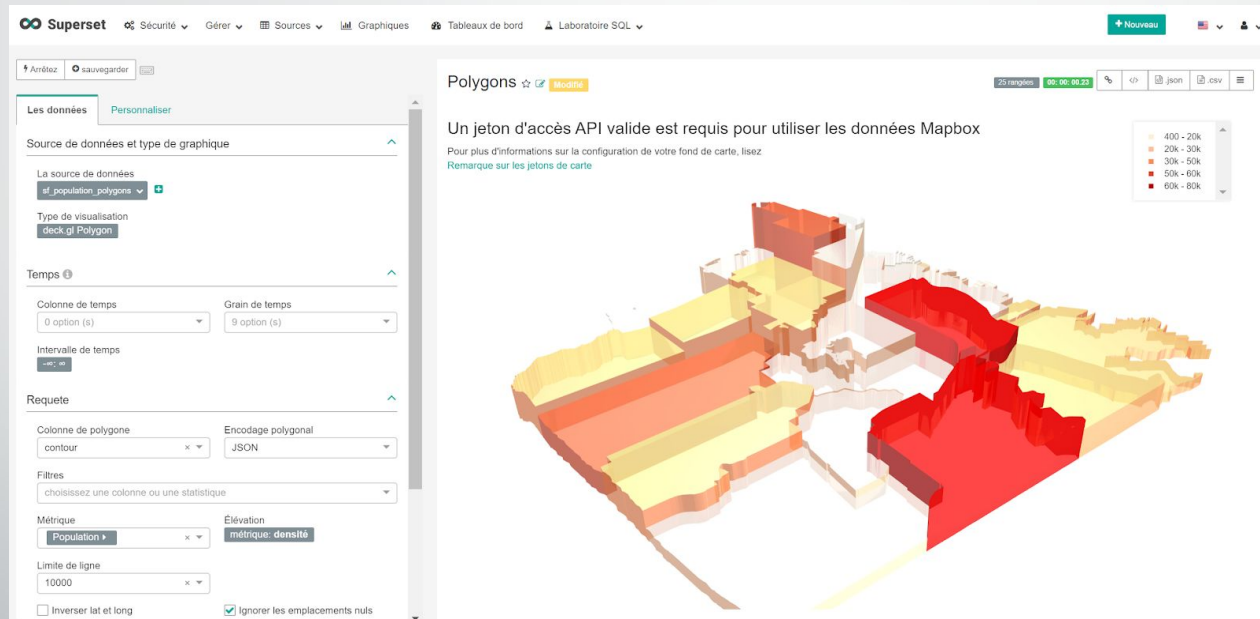
# Datasource & Chart Type:



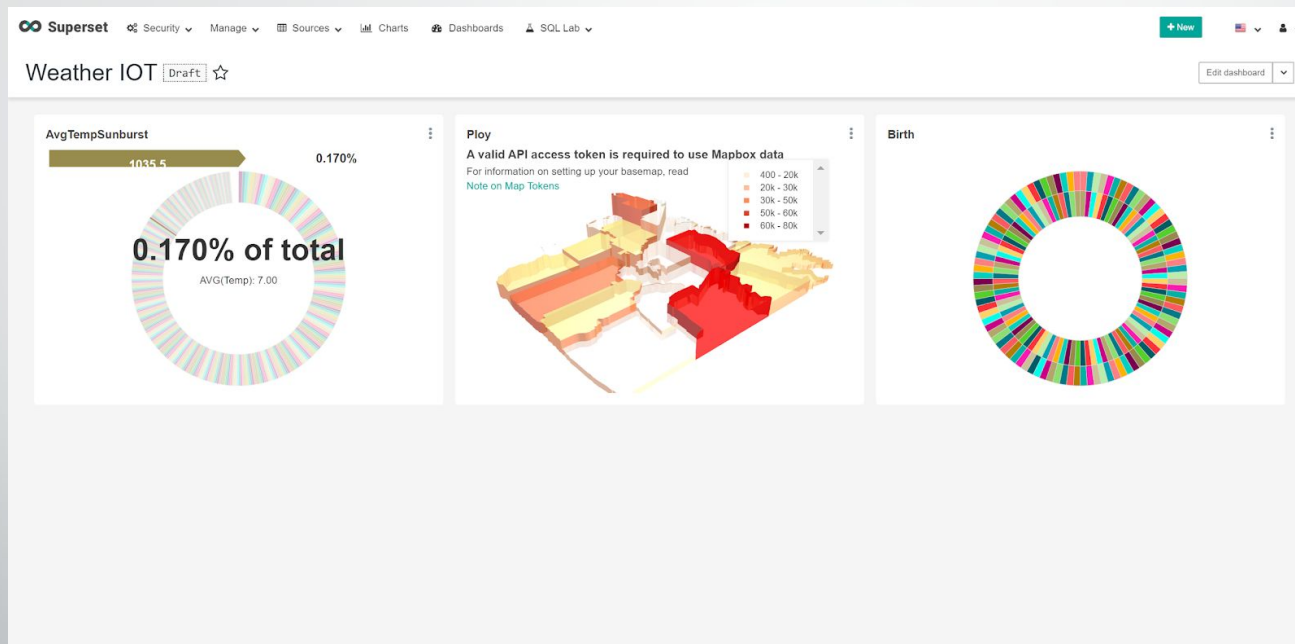
# Visualization Slices



# Polygone



# Dashboard





# Conclusion

- Problem
- Solution we found
- Technology we learn : superset , environnement virtuelle , docker , raspberry , Hbase , Ambari
- Advantage

Question

