Whether Monitoring with Rain Prediction

Using Arduino Esp8266

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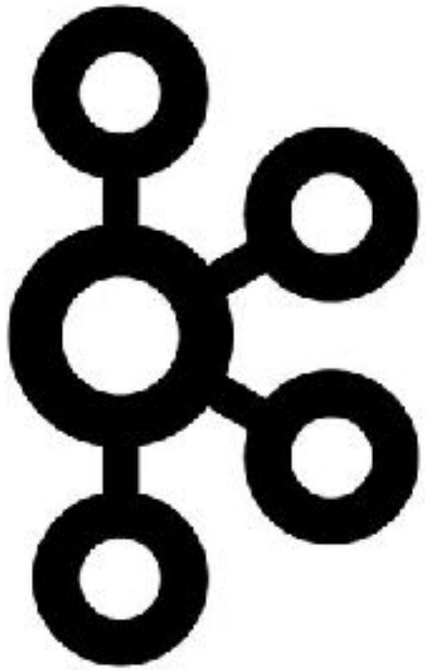
heyAyushh/mlrpp

2. Contents

Azure Functions

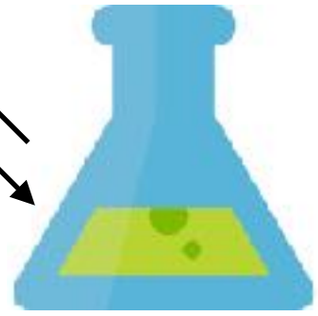


Kafka

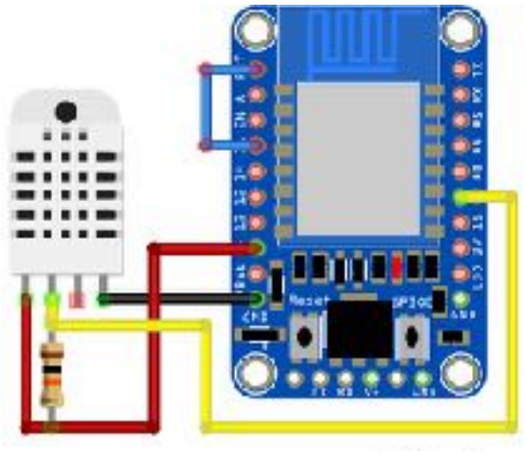
+

Elasticsearch

Kibana



Azure ML studio



Node MCU + DHT22

Requirements

- Azure functions core tools (for localhost)
- Kafka
- Kafka-connect Elasticsearch sink connector
- Elasticsearch, kibana
- ngrok
- Arduino NodeMCU + DHT22 Sensor

SETUP

Azure ml studio

- https://gallery.azure.ai/Experiment/Weather-prediction-model-1
- Go to the above link and click open in mlstudio
- Deploy as it as a web service
- Save the predictive service URL somewhere

Kafka

- Download Kafka
- Start a single broker (or many as you want ;p)
- Create a topic mlrpp
- Download kafka connect elastic search https://github.com/confluentinc/kafka-connect-elasticsearch
- Configure elastic search connector as -> here

Azure functions

- Deploy a HTTP trigger function with the code here.
- Edit link to your kafka broker accordingly
- Edit link to your Azure predictive service

Elasticsearch + Kibana

- Open Dev Tools in Kibana Portal

- Run the following queries as described here.

INTEGRATION

Kafka

- Run the connector
  $Kafka/bin/connect-standalone $Kafkaconfig/connect-standalone.properties $Kafkaconfig/elasticsearch-connect.properties

Arduino

- Edit the Arduino code with Azure function url.
- Connect DHT22 sensor to D4 pin
- Upload the code

Elasticsearch + Kibana

- Build The Visualizations and dasboard as described here.