

Team Number : 25

POLLTHEAIR

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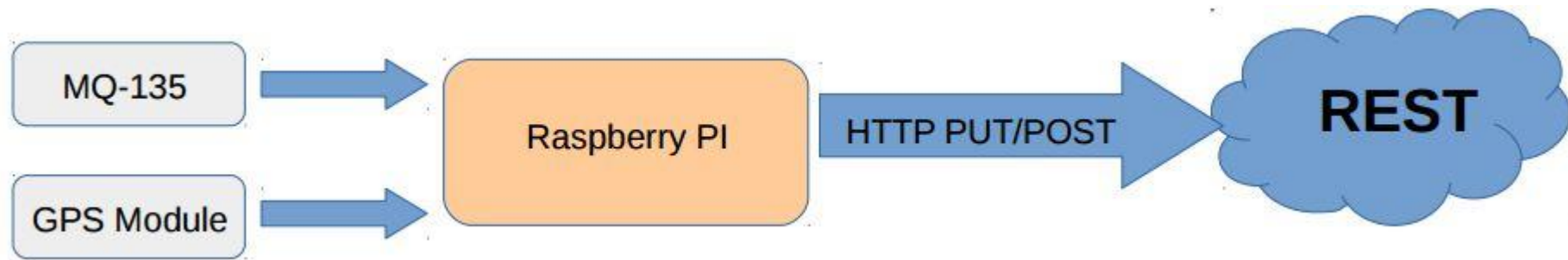
www4.in.tum.de/

Project Goals

- Obtain real time pollution data.
- Location based pollution data over time.
- Develop RESTFULL service to obtain pollution index of air for a particular location over time.

Approach


- IOT domain and Web Application domain (REST).
- IOT domain sends Pollution data with the help of sensors.
- REST service handles POST request from IOT domain.



IOT Device

- Raspberry Pi-3

Sensors and other devices:

- MQ-135 Gas Sensor 
- GPS Module
- ADC module – MCP 3008-I/P PDIP

Mash up Tool

- Node Red
- HTTP POST every 1 min
- Application/JSON payload
- Geo Coordinates from GPS
- Pollution Value from MQ-135

☐ GET ☒ POST ☐ PUT ☐ DELETE

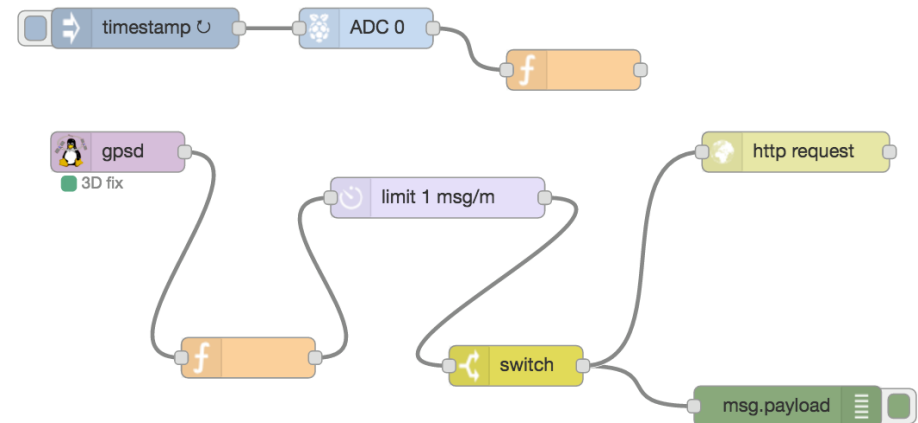
Raw headers

Content-Type: application/json



Raw payload

```
{  
  "Latitude" : "52.520007",  
  "Longitude" : "13.404954",  
  "Pollution" : "99"  
}
```



RESTFULL Back end Service

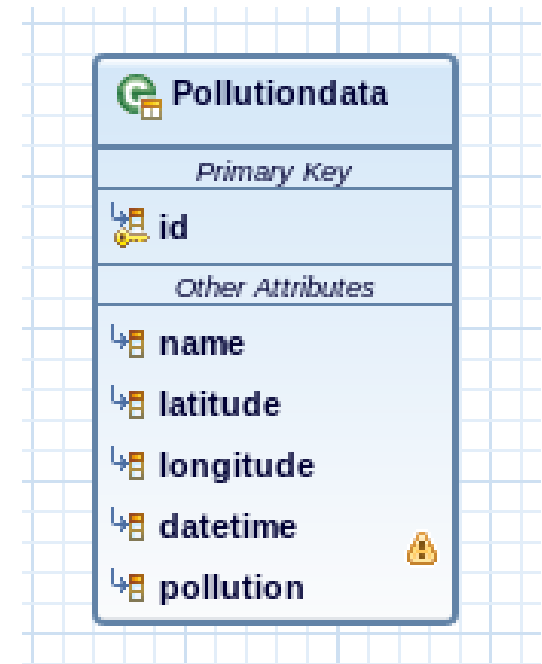
- Handles the POST request from IOT domain.
- Customized OData POST operation.
- Apache Olingo OData v2.0
- Java JPA persistence v1.0
- Maven OData JPA archetype.

Web front end

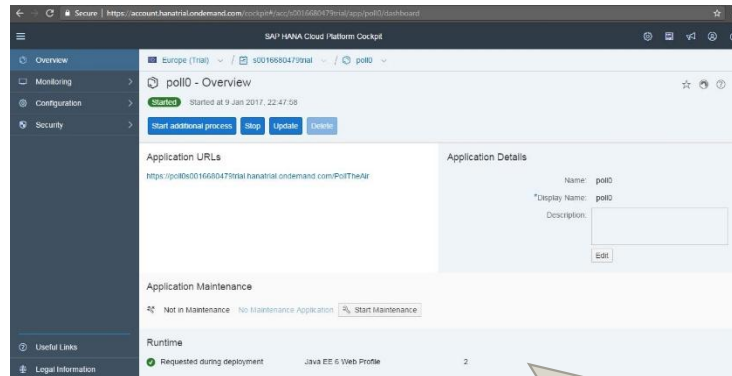
- SAP UI5 framework
- Fiori Master Detail web app

Google Maps API

- Google Map Java Script API for web front end
- Google Map Geo coder API as web service API for backend



Final working Prototype and Thank you



ODATA HTTP/POST



SAP HANA PLATFORM
ODATA SERVICE

ODATA HTTP/GET



Web UI

