Database Administration
Lab 03: Performance Monitoring and Diagnosis.

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1 Introduction

In this lab, we will explore another DBA tool, this time oriented towards monitoring the state of our databases—particularly the behavior and performance of running queries. We will use a single Python or Bash script to feed data into a PostgreSQL table online, simulating a streaming input. We will install and deploy a dashboard panel using Grafana to monitor the ongoing data. We will assume that you already have a PostgreSQL server and a Python environment running on your machine.

2 Grafana + PostgreSQL

You will watch the following videos to see how to connect Grafana with a table in PostgreSQL that stores sensor data. The videos are this and this. You can find the code to create the table as follows:

```
CREATE TABLE IF NOT EXISTS public.sensor
(
    oid bigint NOT NULL,
    lat real NOT NULL,
    lon real NOT NULL,
    tim timestamp with time zone NOT NULL,
    CONSTRAINT sensor_pkey PRIMARY KEY (tim)
)
```

You can also download the code used to generate the data from here.

3 Independent Work

You will have a look at this document. There you will find information about other relational DBMSs —both commercial and open source. In addition, at the end, you will find alternatives to Grafana for visualization and monitoring. Your work will be to choose a new RDBMS and visualization tool and create a tutorial similar to the one you followed previously.

We expect you to submit your report by **August 25th, 2025**.

Happy Hacking 😎!