IT4031 – VAUED Assignment 02 – 2024

This is a group assignment, and each group can consist of **4-6 members**.

You need to implement a REST Service application using Ballerina or any preferred programming language. You are free to implement any scenario for your REST Service application.

1. You need to expose metrics endpoint from above Service for Prometheus server to pull metrics information. If you are using Ballerina you can use the Prometheus extension or you can use inbuilt exporters for other languages [1]
2. Set up a Prometheus server and add the mentioned service as a target. From there, you'll need to identify various types of metrics.
3. Deploy a Grafana dashboard server and integrate the aforementioned Prometheus server as a data source. Afterwards, create a dashboard to visualize the metrics. Export this Grafana dashboard to a JSON file. Lastly, identify and set up alerting in Grafana.

You are required to present a demonstration of the implementation, focusing on data visualization and observability. Submit the REST service code, Grafana dashboard JSON file and Prometheus configuration YAML files as part of the demo materials.

[1] https://prometheus.io/docs/instrumenting/exporters/

Marking scheme

- Task 01 (50 marks)
  - Implementing the webservice and configuring the exporter/module - 30 marks Pasindu
  - Deploy using docker/kubernetes/cloud - 20 marks
- Task 02 (20 marks)
  - Setting up prometheus - 10 marks Niki
  - Deploy using docker/kubernetes/cloud - 10 marks
- Task 03 (30 marks)
  - Setting up a Grafana dashboard - 10 marks Prabodha
  - Setting up alerting - 10 marks Sewwandi
  - Deploy using docker/kubernetes/cloud - 10 marks