KUBELUMEN

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Project idea

KubeLumen is a simple web dashboard that monitors a Kubernetes cluster and displays essential live metrics (CPU, memory, pod count, node status) plus a clear green/red health indicator.

Objectives

- Build a minimal, easy-to-run dashboard showing live cluster metrics.
- Keep the setup simple so the system runs locally (minikube) and can be deployed to cloud later.
- Provide a clear demo and documentation for Evaluation 1.

Tech stack

- Backend: Python + Flask (Flask-SocketIO optional)
- Frontend: Plain HTML/JS or minimal React with Chart.js
- Local cluster: minikube (for easy local testing)
- Repo & evidence: GitHub (initial skeleton) and cloud account screenshot (GCP/AWS/Azure)

High-level architecture

Kubernetes cluster (minikube locally or cloud) → Backend service queries cluster metrics → Backend sends updates to the browser via WebSocket → Frontend displays live charts and a health indicator.

Timeline

Day 1–2: Prepare proposal document, set up GitHub repository with initial skeleton, and activate cloud account.

Day 3–4: Connect backend (Flask) with a dummy Kubernetes metric (simulate pod count or node status).

Day 5: Create a very simple frontend page to display the metric (static chart or number).

Day 6: Integrate backend and frontend so values update on refresh (basic live view).

Day 7: Final testing, polish README, and prepare short demo presentation.