THE UNIVERSITY OF DODOMA

COLLEGE OF INFORMATICS AND VIRTUAL EDUCATION

ASSIGNMENT 5

COURSE NAME: **APPLICATION DEPLOYMENT AND MANAGEMENT**

COURSE CODE: **CS 421   PROGRAMME**:

BCS-SE

INSTRUCTOR: DR GOODIEL C. MOSHI

GROUP NUMBER: 9

STUDENT'S NAME	REG. NUMBER
GLORIA ROBINSON	T21-03-13390
MWEMA NURU KAZINJA	T21-03- 09361
MAULIDI SHAFII	T21-03-03411
THANI KHAMIS THANI	T21-03-12812
ADAM SIMBA	T21-03- 07498

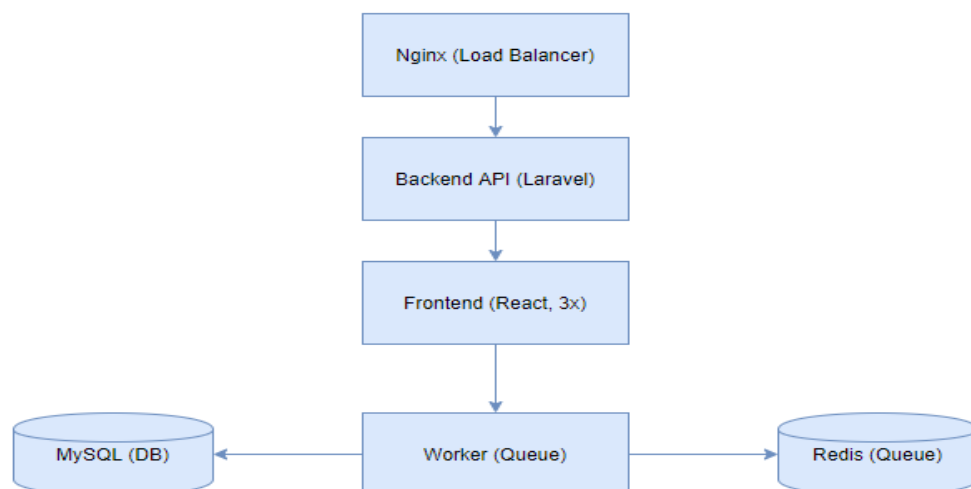**DESIGN DOSSIER: MINI-NETUMO MONITORING SYSTEM**

1. **System Context Diagram**

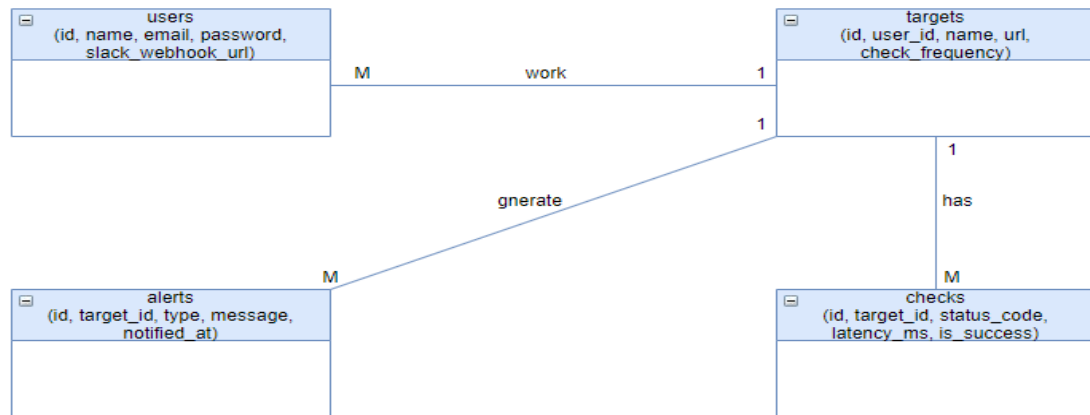   Shows interactions between the Mini-Netumo system and external entities.
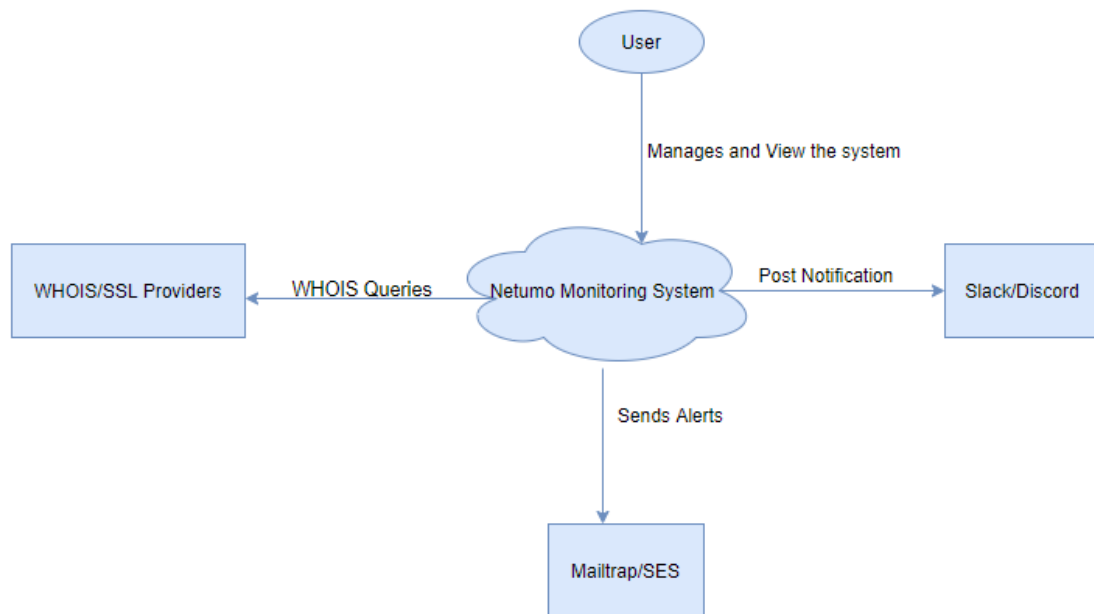
2. **Component Diagram**
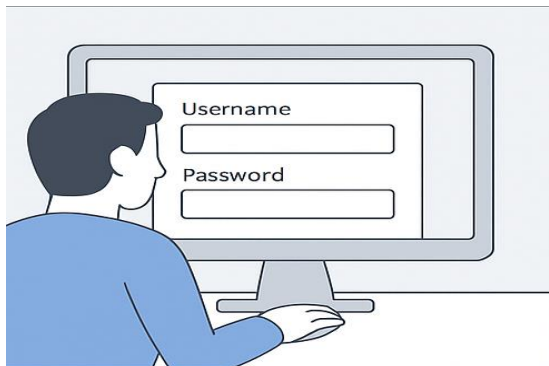
   Illustrates internal architecture and data flows

3. **Database Schema (ERD)**

Defines data structure and relationships
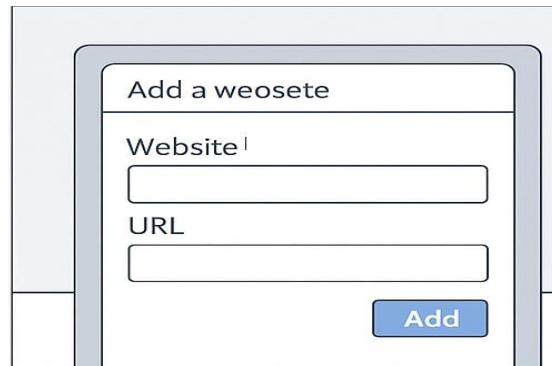

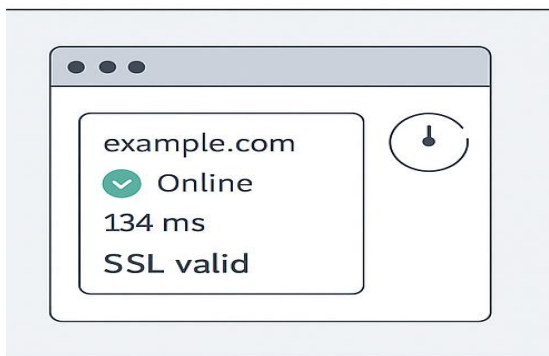**4. User Journey Storyboard**

show how a user experiences your system — from logging in to receiving alerts

User logs in to the dashboard

User adds a website to be monitored

System performs checks every 5 min

Alert sent if downtime/expiry detecte

5. Risk & Mitigation Table

Risk Category	Specific Risk	Impact	Mitigation Strategy
Cost	AWS Free Tier breach	High	Budget alerts + auto-stop non-essential services
Security	JWT token leakage	Critical	Short expiry (1h) + HTTPS enforcement
Compliance	WHOIS rate limiting	High	Cache results + stagger checks
Availability	Service downtime	Critical	Health checks, retries, queueing

6. Responsibility Matrix (RACI)

Responsibility matrix (RACI) mapping tasks to members.

Task	MWEMA NURU	THANI KHAMIS	ADAM SIMBA	MAULID SHAFII	GLORIA ROBINSON
Design & implement REST API (CRUD endpoints)	R	C	I	I	I
JWT auth & Swagger/OpenAPI integration	R	C	I	I	I
Monitoring job (PingTargetJob.php)	R	C	I	I	I
SSL/domain expiry checks	C	R	I	I	I
Alert logic (email/webhook)	C	R	I	I	I
DB models, migrations, seeders	C	R	I	I	I
Backend unit & feature testing	R	C	I	I	I
Frontend dashboard UI	I	I	R	C	I
Frontend auth & API integration	I	I	R	C	I
Uptime chart & frontend health features	I	I	C	R	I
Frontend testing, linting, responsive UI	I	I	C	R	I
Dockerfile & docker-compose.yml setup	I	I	I	I	R
Nginx load balancer config + healthchecks	I	I	I	I	R
GitHub Actions CI/CD (lint, test, deploy)	I	I	I	I	R
Production secrets, deployment scripts	I	I	I	I	R
Troubleshooting & bug fixes (backend/frontend)	C	R	C	R	A