Incident Management System

A containerized Incident Management System built with Python (Flask), containerized using Docker, and deployed on Kubernetes (Minikube).

The application supports incident tracking, assignment, resolution, and email notifications for each step of the workflow.

📌 **Features**

User authentication (Register / Login)

Create, assign, and resolve incidents

Email notifications on:

New incident created

Incident assigned

Incident assigned to engineer

Incident resolved

Kubernetes manifests for Deployment, Service, Namespace, Secrets, and Ingress

Deployed on Minikube with kubectl port-forward for local access

Tech Stack

Backend: Python (Flask)

Database: SQLite (can be extended to RDS/Postgres)

Email: SMTP integration via Flask-Mail

Containerization: Docker

Orchestration: Kubernetes (Minikube)

Steps Followed in the Incident Management System Project

1. Step 1: We developed the backend using Flask to create the incident management functionalities.

2. Step 2: We containerized the Flask app by creating a Dockerfile and building the Docker image.

3. Step 3: We pushed the Docker image to a container registry and prepared Kubernetes manifest files.

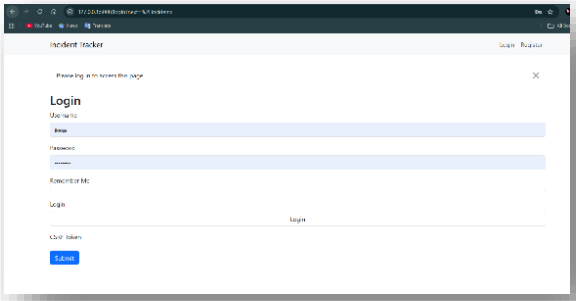
4. Step 4: We deployed the application on a Kubernetes cluster using namespaces, deployment, service, ingress, and secret YAML files.

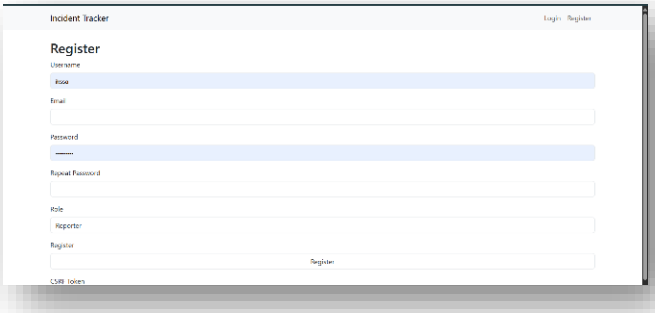
5. Step 5: We used ClusterIP services and port-forwarding to access the application locally for testing.

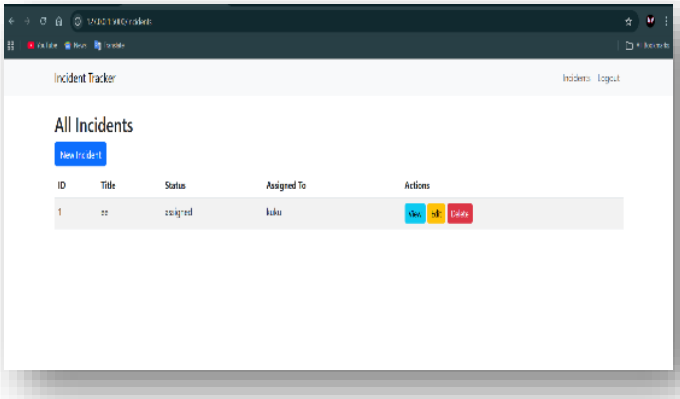
6. Step 6: We configured SMTP credentials securely with Kubernetes secrets to enable automated email notifications.

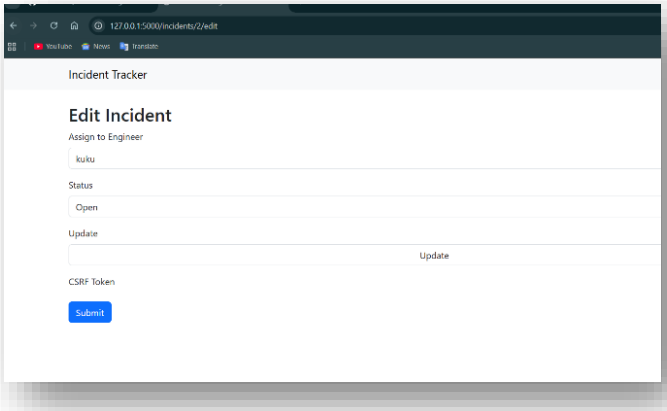
7. Step 7: We verified the application's functionality by creating, assigning, and resolving incidents and observing notifications.

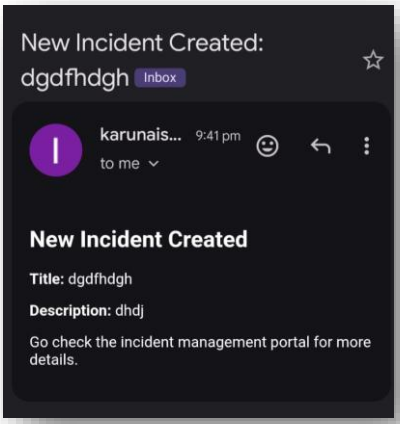
8. Step 8: We documented the workflow and architecture along with screenshots for project understanding and submission.

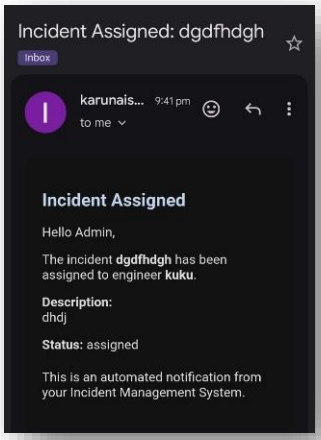

Incident Tracker
Login
Register
Login
Submit

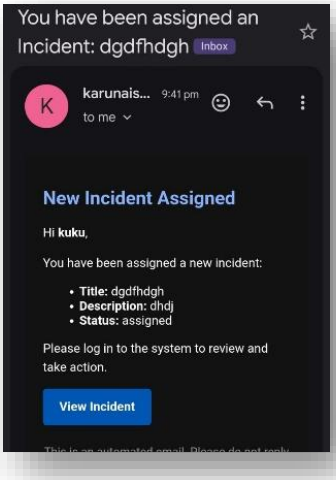

Incident Tracker
Register
Register


Incident Tracker
All Incidents
New Incident
ID
Title
Status
Assigned To
Actions


Incident Tracker
Edit Incident
Assign to Engineer
kuku
Status
Open
Update
Update
CSRF Token
Submit


New Incident Created: dgdfhdgh
Inbox
karunais... 9:41 pm
to me
New Incident Created
Title: dgdfhdgh
Description: dhdj
Go check the incident management portal for more details.


Incident Assigned: dgdfhdgh
Inbox
karunais... 9:41 pm
to me
Incident Assigned
Hello Admin,
The incident dgdfhdgh has been assigned to engineer kuku.
Description:
dhdj
Status: assigned
This is an automated notification from your Incident Management System.


You have been assigned an Incident: dgdfhdgh
Inbox
karunais... 9:41 pm
to me
New Incident Assigned
Hi kuku,
You have been assigned a new incident:
Title: dgdfhdgh
Description: dhdj
Status: assigned
Please log in to the system to review and take action.
View Incident