SHIP-MANAGEMENT SYSTEM

Problem statement:

Small and medium-sized ports often rely on spreedsheets, paper-based records and fragmented manual procedures to manage core operations such as ship scheduling,dock assignment and cargo tracking. This lack of automation leads to conflicts, poor cargo visibility,manual errors ,inefficient staff utilization and data loss risks.

Scenario:

Imagine a regional seaport that serves medium-sized cargo and container ships has been facing operation delays and confusion in

1.Monitoring staff tasks

2.Monitoring staff arrival and clocking out task

3.Double bookings at the docks

4.Delays in inspecting cargo

5. Delays in scheduling meetings

Functional Requirements:

Our systems aims to solve these problems using the following functionalities. We have 2 actors: admin and staff, the functionality of the staff include

1.LOGIN/SIGNUP

The staff can be able to login or signup if they don't have the account. This will lead them to a staff dashboard with the main functionalities

2.VIEW TASKS ASSIGNED

The staff will be able to view the tasks assigned to them by the manager, it will contain the type of task, supervisor ,deadline and the progress bar.

3.EDIT CARGO DETAILS

Since the staff is mostly on ground, they will be able to fill in the type of cargo that comes in, according to the ID, ship ID and the details of it.

4.VIEW MEETINGS

They will be able to view meetings scheduled by the manager according to date, time and venue

5.EDIT TIME

They will be able to edit the time they clocked in or clocked out into work

6. REPORT INCIDENTS

They will be able to report incidents either based on cargo or dock incase of a conflict

7.VIEW DOCK DETAILS

They can be able to view the details of the docks edited by the admin and complain if there is any arising issue

8. VIEW NOTIFICATIONS

They will be able to view notifications and communicate with other colleagues for proper work

9. VIEW PERFORMANCE METRIC

See their performance based on attendance and statistics of how many cargo they have covered.

The admin functionalities include

1.ASSIGN STAFF TASKS

The admin will assign tasks to the staff

2. EDIT DOCK DETAILS

Based on their availability, and location

3. VIEW STAFF ARRIVAL TIME

According to their arrival time and clocking out

4. VIEW CARGO DETAILS

Based on what the staff had put in

5. SCHEDULE MEETINGS

For the staff according to place, time

6. VIEW REPORTS/INCIDENTS

Based on the category either dock,cargo

NON-FUNCTIONAL REQUIREMENTS/NRF'S

1.Performance

- The system should handle up to 100 concurrent users without performance degradation.
- Page load times should not exceed 2 seconds under normal conditions.

2. Reliability

- The system should be available 99.9% of the time.
- Data operations must complete without errors in 99.99% of cases.

3. Scalability

- The system should be able to support additional ports, users, and schedules with minimal changes.

4. Security

- User data must be encrypted in transit and at rest.
- Only authorized users (admin/staff) can access specific features.

5. Usability

- The UI should be intuitive for staff with minimal training.
- Error messages must be clear and helpful.

6. Maintainability

- The system should be modular and easy to update or fix.
- Code must follow standard OOP practices for future scalability.

7. Portability

- The system should run on any modern web browser or operating system without requiring platform-specific changes.