COMPLAINT MANAGEMENGT SYSTEM

A MINI PROJECT REPORT

Submitted by

RAGHUL S **220701210**

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE

RAJALAKSHMI ENGINEERING COLLEGE (AUTONOMOUS)

THANDALAM

CHENNAI-602105

2023 – 24

BONAFIDE CERTIFICATE

Certified that this project report "**COMPLAINT MANAGEMENT SYSTEM**" is the bonafide work of **"RAGHUL S (220701210)"** who carried out the project work under my supervision.

Submitted for the Practical Examination held on _____

ABSTRACT

The "Complaint Management System" is a web-based application developed using HTML, CSS, JavaScript, and MongoDB to streamline the process of lodging, tracking, and managing complaints effectively. The system is designed to provide users with an intuitive interface for registering complaints and a dynamic platform for viewing the status of previously logged complaints.

The application comprises two main functionalities:

1. **Complaint Submission**: Users can lodge complaints via a user-friendly interface. Upon submission, the complaints are stored securely in a MongoDB database for further processing.
2. **Complaint Tracking**: A dedicated section displays a list of all submitted complaints along with their statuses, categorized as "Pending" or "Completed," providing real-time updates to the users.

This project aims to enhance user experience and administrative efficiency by ensuring seamless complaint registration and resolution tracking. The integration of MongoDB allows for scalable data storage and retrieval, while JavaScript ensures dynamic interactivity and responsiveness.

Key features include:

- Easy complaint submission with clear input fields.
- A comprehensive view of past complaints and their statuses.
- A status indicator that simplifies tracking progress (Pending/Completed).

The "Complaint Management System" is an efficient and user-centric solution for complaint handling, emphasizing simplicity, scalability, and effectiveness in addressing user needs.

1.1 INTRODUCTION

Effective complaint management is a crucial aspect of any organization or service platform. It ensures that users' issues are addressed efficiently and transparently, fostering trust and satisfaction. The "Complaint Management System" is a web-based application developed to streamline the process of logging, managing, and tracking complaints.

Built using modern web development technologies—HTML, CSS, JavaScript, and MongoDB—the system provides a user-friendly interface for submitting complaints and a centralized database for storing and retrieving complaint records. This allows users to monitor the status of their complaints and ensures accountability in handling them.

The project incorporates a dual functionality approach:

1. **Lodging Complaints**: Users can submit their concerns through a simple and intuitive form.
2. **Status Tracking**: Users can view a detailed list of all previously submitted complaints, categorized by their current status as either "Pending" or "Completed."

By leveraging MongoDB for data management, the system is designed to handle complaints efficiently, ensuring scalability for future enhancements. The use of JavaScript adds interactivity and responsiveness to the interface, enhancing the user experience.

The "Complaint Management System" not only simplifies complaint handling but also promotes transparency and user engagement, making it an essential tool for organizations aiming to improve their service quality.

1.2 OBJECTIVES

Streamline Complaint Registration:
Provide a simple and intuitive platform for users to submit complaints efficiently.

Facilitate Complaint Tracking:
Enable users to monitor the status of their complaints in real-time, categorized as "Pending" or "Completed."

Enhance Transparency:
Foster trust and accountability by offering users a clear view of the resolution process for their complaints.

Improve Data Management:
Utilize MongoDB for robust and scalable storage of complaints, ensuring efficient data retrieval and management.

Ensure User-Friendly Interaction:
Design an intuitive interface using HTML, CSS, and JavaScript to provide an engaging and seamless user experience.

Promote Administrative Efficiency:
Simplify complaint management for administrators by providing an organized and easily accessible complaint database.

Scalability and Flexibility:
Build a system capable of accommodating increasing numbers of complaints and adaptable to future feature enhancements.

1.3 MODULES

1. User Interface Module

- **Description**:
  Provides an intuitive and user-friendly interface for interacting with the system.
- **Key Features**:
  - Complaint submission form with necessary fields (e.g., user details, complaint details).
  - List view for displaying submitted complaints.
  - Status indicators (Pending/Completed) for each complaint.
- **Technologies Used**: HTML, CSS, JavaScript.

2. Complaint Submission Module

- **Description**:
  Handles the submission of complaints by users and validates the provided data.
- **Key Features**:
  - Collects user inputs and ensures the completeness of required fields.
  - Sends validated complaint data to the backend for storage.
  - Provides feedback on successful submission.
- **Technologies Used**: JavaScript, HTML forms.

3. Database Management Module

- **Description**:
  Manages the storage, retrieval, and updating of complaint data in the MongoDB database.
- **Key Features**:
  - Stores complaint records with details like user info, complaint description, and status.
  - Fetches past complaints for display in the user interface.
  - Updates complaint statuses as needed.
- **Technologies Used**: MongoDB.

4. Complaint Tracking Module

- **Description**:
  Displays a list of submitted complaints along with their current statuses.
- **Key Features**:

    - Provides a searchable and sortable view of complaints.
    - Categorizes complaints based on status (Pending/Completed).
    - Updates the status dynamically as resolved.
- **Technologies Used**: JavaScript, MongoDB.

5. Status Update Module

- **Description**:
  Enables administrators or the system to update the status of complaints.
- **Key Features**:
    - Changes complaint status from "Pending" to "Completed" once resolved.
    - Logs updates for future reference.
- **Technologies Used**: MongoDB, JavaScript.

2. SURVEY OF TECHNOLOGIES

The "Complaint Management System" project relies on a range of modern technologies to ensure efficient functionality, scalability, and user-friendliness. Below is a survey of the key technologies used in the project:

1. **HTML (HyperText Markup Language)**

- **Purpose**:
  Serves as the foundational markup language for creating the structure of the web application.
- **Key Features**:
  - Provides a semantic structure for web pages.
  - Supports integration with CSS and JavaScript for styling and interactivity.
- **Relevance**:
  Essential for building forms, complaint lists, and other content elements of the application.

2. **CSS (Cascading Style Sheets)**

- **Purpose**:
  Styles the web application, making it visually appealing and user-friendly.
- **Key Features**:
  - Enables responsive design for accessibility across various devices.
  - Allows custom styling for buttons, tables, and status indicators.
- **Relevance**:
  Improves user experience by providing a clean and professional interface.

3. **JavaScript**

- **Purpose**:
  Adds dynamic functionality and interactivity to the application.
- **Key Features**:
  - Handles real-time updates, such as dynamically updating complaint statuses.
  - Implements form validation and user input handling.
  - Fetches and displays complaint data using AJAX or Fetch API.
- **Relevance**:
  Facilitates smooth user interactions and enhances responsiveness.

4. **MongoDB**

- **Purpose**:
  Acts as the database for storing and managing complaint data.
- **Key Features**:
  - NoSQL database structure allows flexibility in handling unstructured data.
  - Scalable and efficient for large datasets.
  - Provides CRUD (Create, Read, Update, Delete) operations for complaint records.
- **Relevance**:
  Ensures robust and scalable data storage for complaints and their statuses.

3.Requirements and Analysis for Complaint management System

1. Functional Requirements

These define the core functionalities that the system must deliver:

User Requirements

- **Submit Complaints**:
  Users must be able to fill out a form to lodge complaints with details such as name, email, and complaint description.
- **View Complaint Status**:
  Users should view a list of previously submitted complaints along with their statuses (Pending/Completed).

Admin Requirements

- **View All Complaints**:
  Administrators should have access to the complete list of complaints.
- **Update Complaint Status**:
  Administrators must be able to update the status of complaints from "Pending" to "Completed."

General Requirements

- **Data Storage**:
  All complaints must be securely stored in a database.
- **User Feedback**:
  Provide users with confirmation messages upon successful complaint submission.

---

2. Non-Functional Requirements

These specify the quality attributes and constraints of the system:

Performance

- The system should handle multiple simultaneous complaint submissions and status checks efficiently.
- Complaint status updates should reflect in real-time.

Scalability

- The database should be capable of storing a growing number of complaints without performance degradation.

Usability

- The interface should be user-friendly and intuitive for both users and administrators.
- The system must support accessibility on various devices, including desktops, tablets, and smartphones.

Security

- Sensitive user information must be protected through secure database connections.
- Authentication mechanisms should be implemented for admin access.

Maintainability

- The system codebase should be modular and easy to update for future enhancements.

---

3. Technical Requirements

These define the tools and technologies to be used in the system:

Frontend

- HTML for structure.
- CSS for styling and responsive design.
- JavaScript for interactivity and real-time updates.

Backend

- Node.js (optional) for server-side logic.
- Express.js (optional) for routing and API integration.

Database

- MongoDB for storing complaint details, including user information and complaint status.

Optional Tools

- Email API (e.g., SMTP) for notifications.
- Authentication tools (e.g., JWT) for secure admin login.

---

4. Analysis

Feasibility Study

- **Technical Feasibility**:
  The chosen technology stack (HTML, CSS, JavaScript, MongoDB) is lightweight, easy to implement, and suitable for web applications of this scale.
- **Operational Feasibility**:
  The system addresses a common need for streamlined complaint management, making it valuable for organizations and users.
- **Economic Feasibility**:
  The system leverages open-source technologies, reducing development and maintenance costs.

User Analysis

- **End Users**:
  General users lodging complaints and administrators managing complaints.
- **User Needs**:
  Easy submission process, real-time status updates, and reliable data handling.

System Workflow

1. User submits a complaint through the web interface.
2. Complaint details are stored in the MongoDB database.
3. The system fetches and displays all complaints, categorized by status.
4. Admin updates the status of complaints via the backend interface.
5. Users and admins can track the resolution of complaints in real-time.

---

5. Risk Analysis

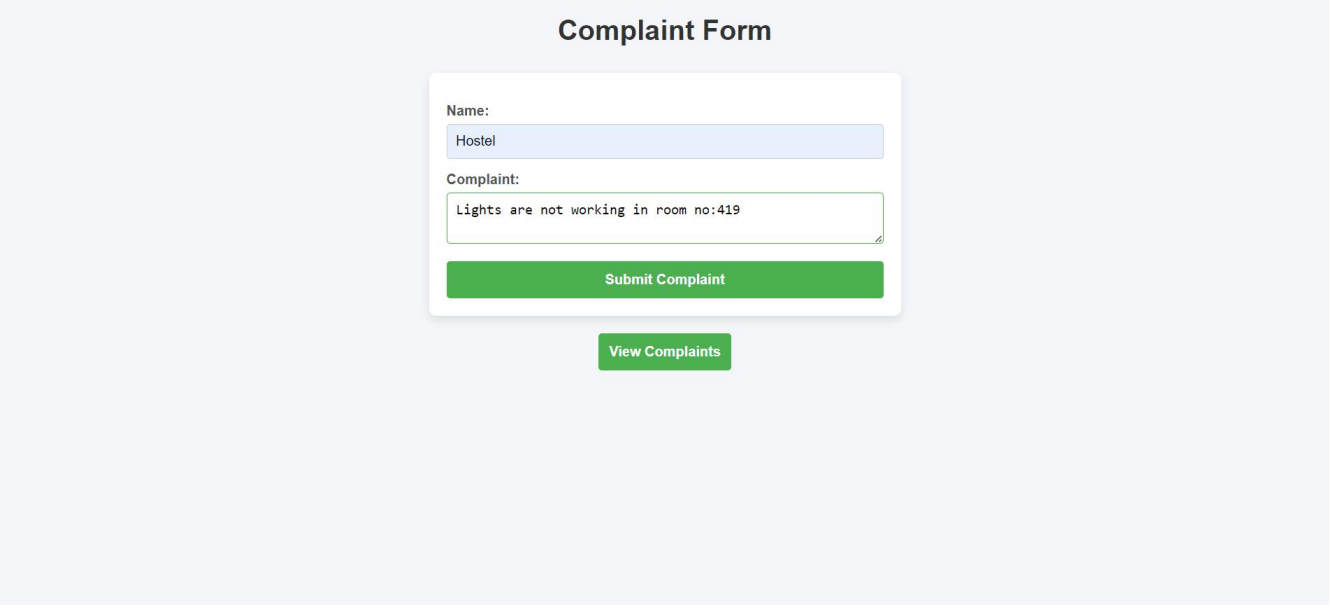
- **Data Loss**:
  Mitigated through regular database backups.

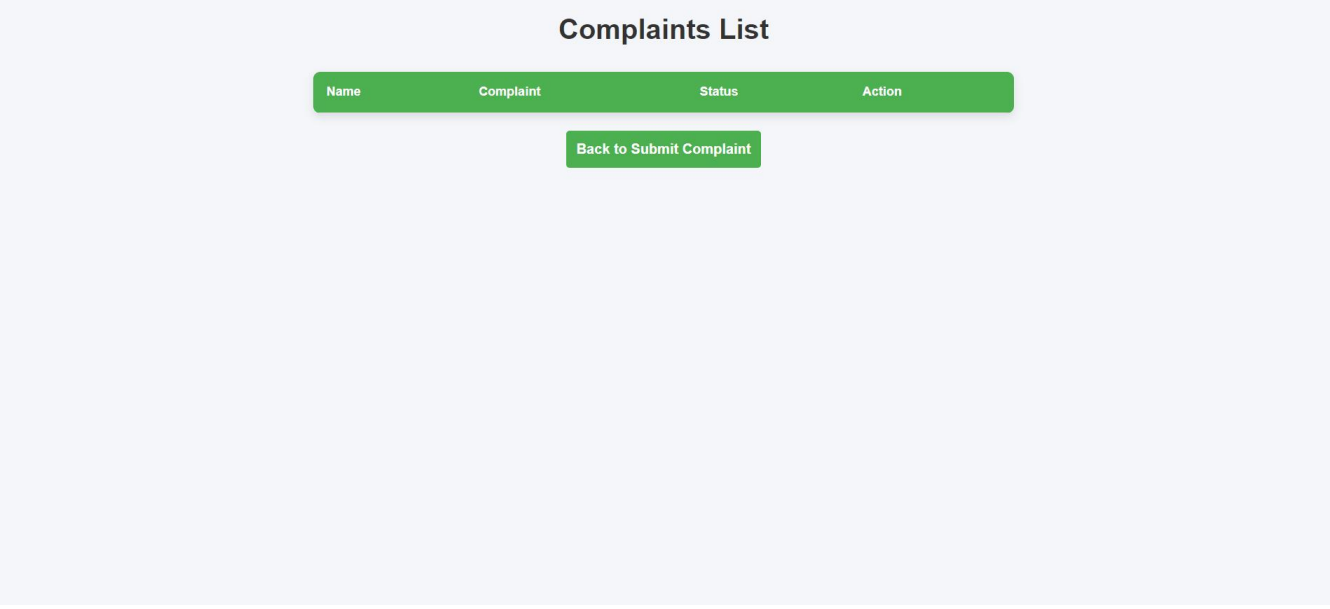
- **Unauthorized Access**:
  Prevented by implementing secure authentication mechanisms.
- **Performance Issues**:
  Addressed through optimized database queries and scalable architecture.

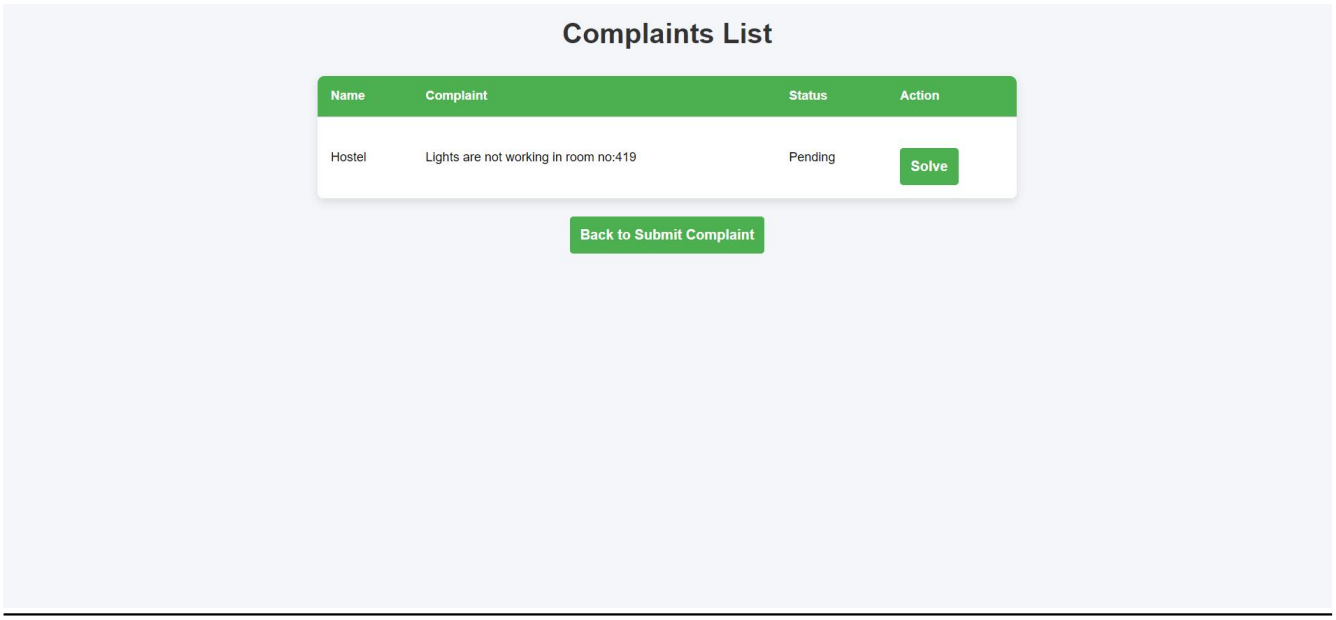
By systematically addressing these requirements and performing an in-depth analysis, the Complaint Management System is designed to be reliable, efficient, and user-friendly, meeting the needs of its users and administrators alike.

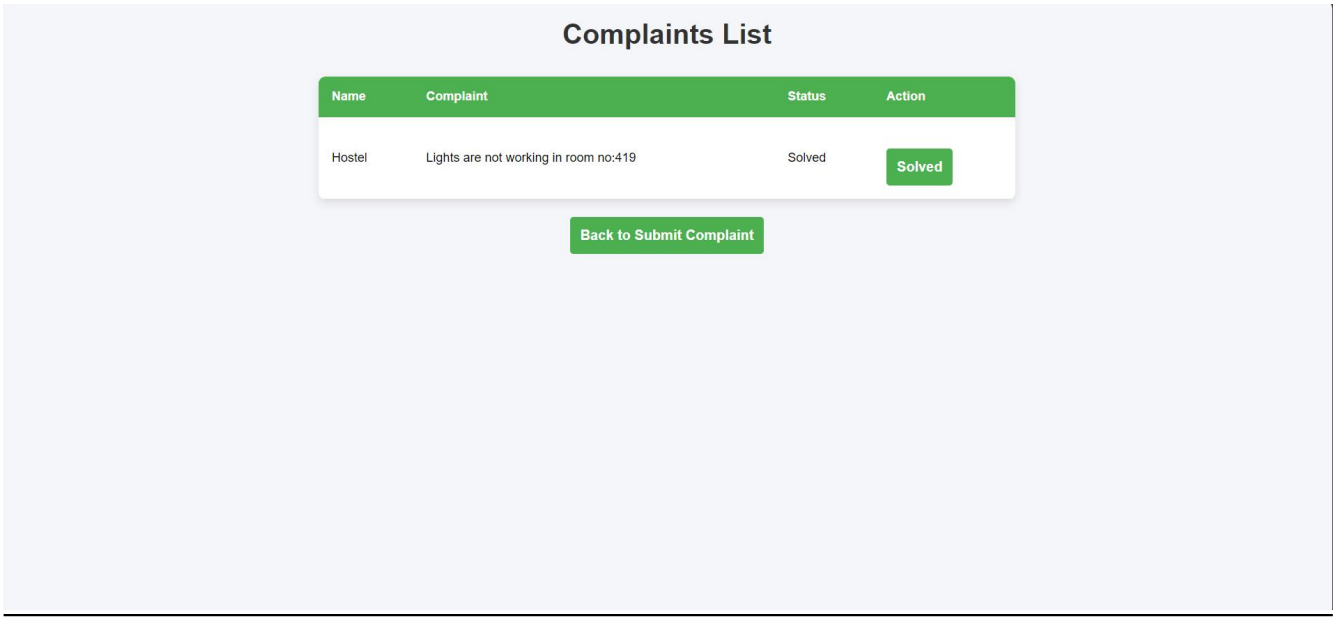
4. RESULTS AND DISCUSSION

Output screen

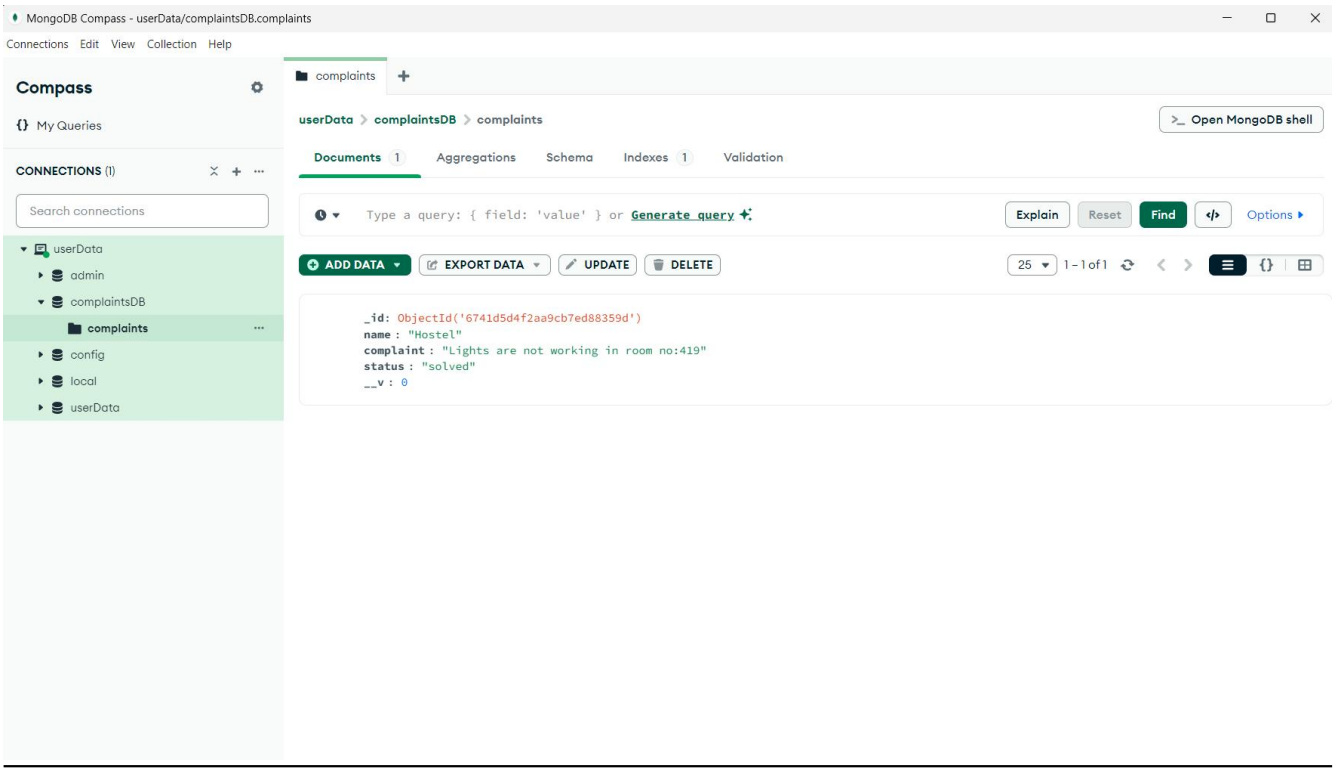





Complaints List
Name
Complaint
Status
Action
Hostel
Lights are not working in room no:419
Pending
Solve
Back to Submit Complaint


Complaints List
Name
Complaint
Status
Action
Hostel
Lights are not working in room no:419
Solved
Solved
Back to Submit Complaint

The data will be displayed in MongoDB



5. CONCLUSION

The "Complaint Management System" is an efficient and user-friendly platform designed to simplify the process of lodging, tracking, and managing complaints. By integrating modern web technologies such as HTML, CSS, JavaScript, MongoDB, and Express.js, the system provides a seamless experience for both users and administrators.

The project achieves its primary objectives of enabling users to submit complaints effortlessly, track their status in real-time, and ensure transparency in the resolution process. The use of MongoDB ensures robust and scalable data management, while the Express.js framework enhances backend functionality, enabling efficient communication between the frontend and database.

Through this project, organizations can improve their complaint-handling efficiency, reduce response times, and enhance user satisfaction. Future enhancements, such as integrating authentication systems or email notifications, could further expand the system's capabilities and usability.

In conclusion, the "Complaint Management System" serves as a practical solution for complaint management, meeting the needs of users and organizations while offering a foundation for future growth and development.