A PROJECT REPORT ON

ONLINE CRIME REPORTING SYSTEM

SUBMITTED IN PARTIAL FULFILLMENT OF

DIPLOMA IN ADVANCED COMPUTING (PG-DAC)



BY

Jasmine Kispotta Lalini Mahajan Pradyumna Shankar Mitali Gupta Pawan Gupta

UNDER THE GUIDENCE OF

Mr. Nilesh Pawar

SUNBEAM INSTITUTE OF INFORMATION TECHNOLOGY, PUNE

CERTIFICATE

This is to certify that the project

ONLINE CRIME REPORTING SYSTEM

Has been submitted by

Jasmine Kispotta Lalini Mahajan Pradyumna Shankar Mitali Gupta Pawan Gupta

In partial fulfillment of the requirement for the Course of **PG Diploma in Advanced Computing (PG-DAC FEB 2025)** as prescribed by The **CDAC** ACTS, PUNE.

Place: Pune Date: 11-02-2025

Mr. Nilesh Pawar Project Guide <Alumni Mentor Name>
Alumni Mentor

ACKNOWLEDGEMENT

A project usually falls short of its expectation less aided and guided by the right persons at the right time. We avail this opportunity to express our deep sense of gratitude towards Mr. Nitin Kudale (Center Coordinator, SIIT, Pune) and Mr. Yogesh Kolhe (Course Coordinator, SIIT, Pune).

We are deeply indebted and grateful to them for their guidance, encouragement and deep concern for our project. Without their critical evaluation and suggestions at every stage of the project, this project could never have reached its present form. Last but not the least we thank the entire faculty and the staff members of Sunbeam Institute of Information Technology, Pune for their support.

Jasmine Kispotta, Lalini, Mahajan Pradyumna Shankar, Mitali Gupta, Pawan Kumar Gupta

PG-DAC SIIT Pune

ABSTRACT

Developed a secure and scalable Online Crime Reporting System using React.js, Tailwind CSS, Spring Boot, REST API, MySQL, and Spring Security to streamline crime reporting. Implemented OTP-based login, JWT authentication, and role-based access control for secure access, defining roles for Citizens, Police, and Admins to ensure structured operations. Built a Spring Boot REST API following microservices architecture, ensuring scalability and performance. Designed a modern, responsive UI using React.js, Tailwind CSS components for a seamless user experience. Integrated cloud storage for managing crime-related evidence securely and utilized MySQL with normalization to efficiently store user details, crime reports, and case progress. Implemented Spring Security to safeguard sensitive data, including confidential user information and crime evidence. Ensured system reliability through JUnit-based unit testing and adhered to SOLID principles for maintainability. This project demonstrates strong expertise in full-stack development, API security, scalable architectures, and enterprise web solutions, making it highly relevant for backend development and security-focused applications.

INDEX

1.	INTRODUCTION	1
	1.1 Introduction	2
2.	PRODUCT OVERVIEW AND SUMMARY	
	2.1 Purpose	
	2.2 Scope	
	2.3 User Classes and Characteristics	
	2.4 Design and Implementation Constraints	
3.	REQUIREMENTS	
	3.1 Functional Requirements	
	3.1.1 Use case for Administrator.	
	3.1.2 Use case for Customer.	
4.	PROJECT DESIGN	
	4.1 Data Model	
	4.1.1 Database Design	
	4.2 Project Management Related Statistics	
	4.3 Process Model	
	4.2.1 Functional Decomposition Diagram	
5.	CONCLUSION	

1.INTRODUCTION

The Crime Reporting System is a web-based platform designed to make crime reporting easier and more efficient. It allows citizens to report crimes, track case progress, and communicate with authorities. Police officers can manage cases, update investigation statuses, and ensure proper follow-ups. Administrators oversee the system, manage users, and monitor reports. The platform enhances public safety by reducing paperwork, minimizing delays, and improving transparency in crime investigations. With a secure and structured approach, it ensures that crime-related data is managed efficiently, providing a reliable solution for both citizens and law enforcement agencies to handle crime reports effectively.

2.Product Overview and Summary

2.1 Purpose:

The **Online Crime Reporting System** is designed to provide a secure, efficient, and user-friendly platform for citizens to report crimes, track case progress, and communicate with law enforcement authorities. This system aims to bridge the gap between the public and the police by offering a digital solution that ensures transparency, accessibility, and accountability in crime reporting. It enhances transparency and efficiency in handling crime-related incidents by enabling real-time tracking of complaints and direct communication between citizens and law enforcement authorities. The system aims to reduce delays in reporting, ensure timely intervention, and improve the overall responsiveness of law enforcement. By offering a secure and structured approach to crime reporting, it empowers citizens to actively participate in maintaining law and order while ensuring that reports are systematically processed, investigated, and resolved. By digitizing crime reporting, the system empowers citizens, improves response time, and strengthens law enforcement capabilities, making communities safer and more connected.

2.2 SCOPE:

The Online Crime Reporting System aims to revolutionize the way crimes are reported, tracked, and managed by providing a digital platform that connects citizens with law enforcement agencies. The scope of this project includes:

- 1. Crime Reporting & Tracking Citizens can report crimes online, submit evidence, and track the status of their complaints in real time.
- 2. User Roles & Authentication The system supports multiple user roles, including Citizens, Police Officers, and Administrators, ensuring secure access and role-based functionalities.
- 3. Automated Case Assignment Reported crimes are automatically assigned to the nearest police station or relevant law enforcement officers for quick response and investigation.
- 4. Evidence Submission & Management Users can upload documents, images, and videos as evidence, which are securely stored and made accessible to authorized personnel.
- 5. Grievance & Feedback Mechanism If a citizen is unsatisfied with the response to their complaint, they can escalate the matter to higher authorities and provide feedback.

- 6. Data Analytics & Reporting Law enforcement agencies can analyze crime trends, generate reports, and enhance decision-making based on crime statistics.
- 7. Enhanced Communication The system facilitates seamless communication between complainants and investigating officers through notifications and updates.
- 8. Scalability & Integration The platform can be expanded to integrate with other government and law enforcement databases, making it a comprehensive crime management system.

By implementing this system, the project aims to enhance transparency, improve law enforcement efficiency, and ensure timely justice for citizens.

2.3 User Classes and Characteristics

1. Citizen

Description: A general public user who can report crimes, track their reports, and provide feedback. Citizens can also access public crime data.

Characteristics:

- **Registration:** Citizens are required to register and create an account using basic information (name, email, etc.).
- Role: Can access basic functionalities such as creating new crime reports, viewing crime reports, and providing feedback on police actions.

• Permissions:

- Can submit crime reports with details such as location, category, description, and evidence.
- Can view their past reports and their statuses (pending, resolved, etc.).
- Can provide feedback on police responses.
- Authentication: OTP-based login for secure access.

2. Police Officer

Description: A user representing a law enforcement official, who can view and manage crime reports assigned to their police station. Police officers can update the status of cases and manage evidences.

Characteristics:

- **Registration**: Police officers are registered by admins and assigned unique roles and stations.
- **Role**: Police officers are responsible for investigating crimes, managing evidence, and updating the status of crime reports.

• Permissions:

- Can view crime reports assigned to their station.
- Can update the status of a case (e.g., resolved, under investigation, etc.).
- Can upload and manage crime-related evidence.
- Can interact with citizens by providing updates on reports.
- Authentication: OTP-based login or role-based access control (RBAC) with unique credentials.

3. Admin

Description: System administrators who have full access to all system features and functionalities. They can manage users, oversee system activity, and generate reports.

Characteristics:

- **Registration**: Admin accounts are created and managed within the system by the organization.
- **Role**: Admins manage user accounts, assign roles to police officers, and ensure smooth operation of the system.

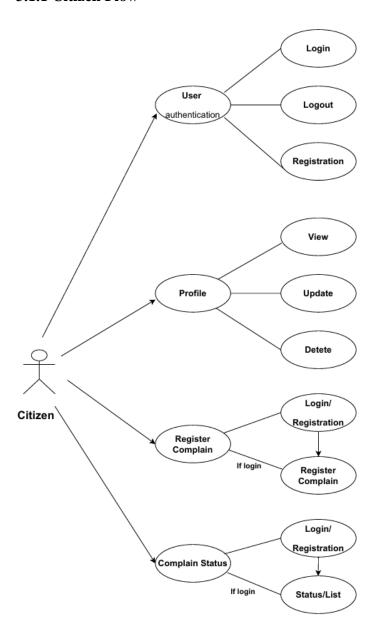
• Permissions:

- Can create, update, and delete citizen and police officer accounts.
- Can assign police officers to different police stations and manage roles.
- Can view and manage all crime reports and statuses.
- Can generate system-wide reports for analytics and monitoring.
- **Authentication**: Admins authenticate via OTP or secure login credentials.

3.REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS

3.1.1 Citizen Flow



3.1.1.1 Citizen Registration

Objective: Allow citizens to create an account to access the system.

Features: Provide name, email, phone number, and address for registration. Verify identity through OTP sent to the registered phone number/email. Set up a secure password for login.

3.1.1.2 Login with OTP

Objective: Enable secure access to the system using OTP authentication.

Features: Enter a registered phone number/email to receive an OTP. Verify OTP to log in securely.

Redirect users to the home page upon successful authentication.

3.1.1.3 About Us

Objective: Provide details about the system, its purpose, and authorities involved.

Features: Overview of the crime reporting system and its benefits.

Information about law enforcement agencies managing the platform.

FAQs and guidelines on using the system.

3.1.1.4 Citizen Feedback

Objective: Allow citizens to share feedback and suggestions.

Features: Submit feedback regarding the platform's usability and effectiveness.

Rate the service based on experience. View responses from administrators if applicable.

3.1.1.5 Report Crime

Objective: Enable citizens to report crimes with necessary details and evidence.

Features: Fill out a form with details such as crime type, location, date, and description. Upload supporting evidence (images, videos, or documents).

Submit the report for review and receive a reference number.

3.1.1.6 Contact Police

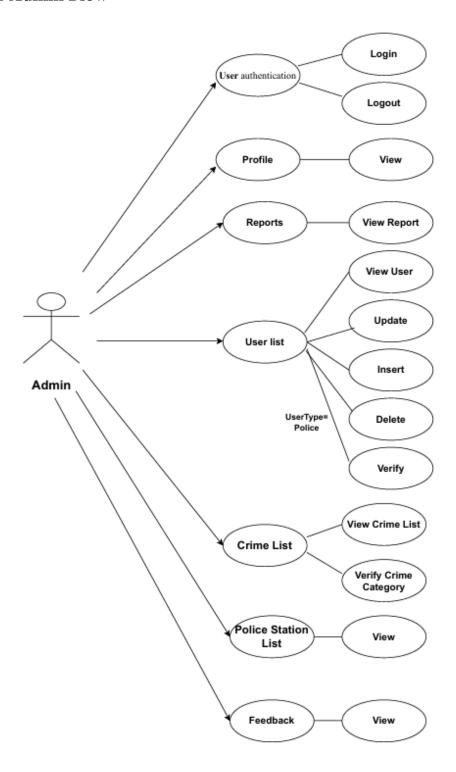
Objective: Allow citizens to directly communicate with law enforcement.

Features: View contact details of local police stations. Send inquiries or emergency alerts. Receive responses from assigned officers.

3.1.1.7 Check Report Status

Object	ive : Enable c	itizens to tracl	k the progres	s of their repo	orted crimes.		
Featur	es: View a lis	st of submitted	crime repor	ts. Check the	investigation	status (e.g., F	ending, Under
Investig	gation, Resol	ved). Receive	updates and	messages fro	m law enforc	ement.	

3.1.2 Admin Flow



3.1.2.1 Admin Dashboard

Objective: Provide an overview of system activities, including crime reports, police data, citizen data, and system performance.

Features: View real-time crime statistics and trends. Monitor total crime reports (Pending, Under Investigation, Resolved). Access database modification tools for system management.

3.1.2.2 Citizen Management

Objective: Enable admins to manage citizen accounts and reported crimes.

Features: View a list of registered citizens. Edit or deactivate citizen accounts if necessary. Access and monitor all crime reports submitted by citizens. Remove or update crime reports if needed.

3.1.2.3 Police Management

Objective: Allow admins to manage police officer accounts and assignments.

Features: View, add, edit, or remove police officer accounts. Assign police officers to cases or stations.

3.1.2.4 Crime Report Management

Objective: Enable admins to oversee all reported crimes and their statuses.

Features: Access and filter all crime reports based on status, location, or date.

3.1.2.5 Police Station Management

Objective: Manage the list of police stations in the system.

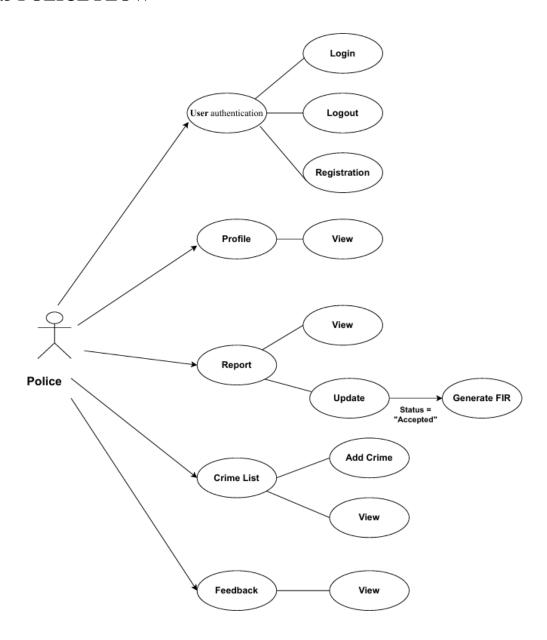
Features: Add, edit, or remove police station records. Assign police officers to specific stations. Track station performance and case resolutions.

3.1.2.6 Database Management

Objective: Allow the admin to modify, update, or clean the database as required.

Features: Access all system data, including users, crime reports, and evidence files.

3.1.3 POLICE FLOW



3.1.3.1 Police Dashboard

Objective: Provide law enforcement with an analytical overview of crime reports, trends, and case management for efficient decision-making.

Features: Graphical Crime Statistics, Report Status Tracking, Crime Trend Analysis, Case Management, Officer Performance Metrics.

3.1.3.1 Police Registration

Objective: Allow police personnel to register and gain access to the system.

Features:

- Provide name, badge number, rank, and police station details.
- Use official email or ID verification for authentication.
- Set up a secure password for login.

3.1.3.2 Police Login with OTP

Objective: Enable police personnel to log in securely using OTP authentication.

Features:

- Enter a registered phone number/email to receive an OTP.
- Verify OTP for secure access.
- Redirect officers to their dashboard upon successful authentication.

3.1.3.3 View and Manage Reports

Objective: Enable police personnel to view and update crime reports.

Features:

- Access a list of submitted crime reports.
- Filter reports based on status (Pending, Under Investigation, Resolved).
- View detailed reports, including evidence submitted by citizens.
- Update report status and add investigation notes.

3.1.3.4 Generate FIR (First Information Report)

Objective: Allow police to officially register an FIR for accepted crime reports.

Features:

- Update the status of a report to "Accepted" before generating an FIR.
- Auto-generate an FIR document with case details.
- Provide a unique FIR number and notify the complainant.

3.1.3.5 Crime List Management

Objective: Maintain and manage records of reported crimes.

Features:

- View a categorized list of crimes.
- Add new crimes and update existing crime records.

• Maintain a searchable database of crimes with status tracking.

3.1.3.6 Police Profile Management

Objective: Allow police personnel to manage their profile and credentials.

Features:

- View personal details, badge number, and assigned station.
- Update password and contact details.
- Access logs of past investigations handled.

3.1.3.7 Feedback and Citizen Communication

Objective: Enable law enforcement to review citizen feedback and respond if necessary.

Features:

- View feedback submitted by citizens.
- Respond to queries and suggestions.
- Address concerns related to investigations or police conduct.

3.1.3.8 Crime Data Analysis & Reports

Objective: Provide insights into crime trends for better law enforcement planning.

Features:

- Generate reports on crime patterns and statistics.
- Analyze data based on location, crime type, and frequency.
- Use analytics to identify high-risk areas for proactive measures.

4. PROJECT DESIGN

4.1 Data Model

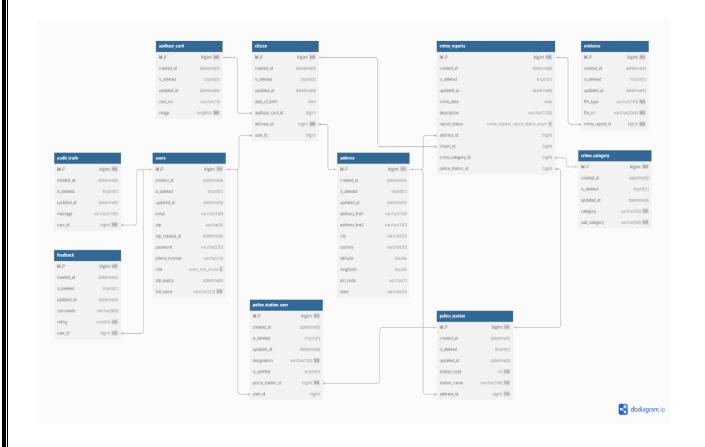


Table 1 : Users

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	bigint			No	None		AUTO_INCREMENT
2	created_at	datetime(6)			Yes	NULL		
3	is_deleted	tinyint(1)			Yes	0		
4	updated_at	datetime(6)			Yes	NULL		
5	email 🔊	varchar(160)	utf8mb4_0900_ai_ci		Yes	NULL		
6	otp	varchar(6)	utf8mb4_0900_ai_ci		Yes	NULL		
7	otp_created_at	datetime(6)			Yes	NULL		
8	password	varchar(255)	utf8mb4_0900_ai_ci		Yes	NULL		
9	phone_number	varchar(10)	utf8mb4_0900_ai_ci		Yes	NULL		
10	role	enum('ADMIN', 'CITIZEN', 'POLICE')	utf8mb4_0900_ai_ci		Yes	NULL		
11	otp_expiry	datetime(6)			Yes	NULL		
12	full_name	varchar(125)	utf8mb4_0900_ai_ci		No	None		

Table 2: Citizen

# Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1 id 🔑	bigint			No	None		AUTO_INCREMENT
2 created_at	datetime(6)			Yes	NULL		
3 is_deleted	tinyint(1)			Yes	0		
4 updated_at	datetime(6)			Yes	NULL		
5 date_of_birth	date			Yes	NULL		
6 aadhaar_card_id 🔊	bigint			Yes	NULL		
7 address_id 🔊	bigint			No	None		
8 user_id	bigint			Yes	NULL		

Table 3 : Police Station

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	bigint			No	None		AUTO_INCREMENT
2	created_at	datetime(6)			Yes	NULL		
3	is_deleted	tinyint(1)			Yes	0		
4	updated_at	datetime(6)			Yes	NULL		
5	station_code 🔊	int			No	None		
6	station_name	varchar(100)	utf8mb4_0900_ai_ci		No	None		
7	address_id 🔊	bigint			No	None		

Table 4: Police Station User

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	bigint			No	None		AUTO_INCREMENT
2	created_at	datetime(6)			Yes	NULL		
3	is_deleted	tinyint(1)			Yes	0		
4	updated_at	datetime(6)			Yes	NULL		
5	designation	varchar(100)	utf8mb4_0900_ai_ci		No	None		
6	is_verified	tinyint(1)			Yes	0		
7	police_station_id 🔊	bigint			No	None		
8	user_id 🔊	bigint			Yes	NULL		

Table 5 : Crime Reports

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	bigint			No	None		AUTO_INCREMENT
2	created_at	datetime(6)			Yes	NULL		
3	is_deleted	tinyint(1)			Yes	0		
4	updated_at	datetime(6)			Yes	NULL		
5	crime_date	date			Yes	NULL		
6	description	varchar(1200)	utf8mb4_0900_ai_ci		Yes	NULL		
7	report_status	enum('ACKNOWLEDGED', 'CLOSED', 'ON_HOLD', 'PENDING	utf8mb4_0900_ai_ci		Yes	NULL		
8	address_id 🔊	bigint			Yes	NULL		
9	citizen_id 🔊	bigint			Yes	NULL		
10	crime_category_id 🔎	bigint			Yes	NULL		
11	police_station_id 🔑	bigint			Yes	NULL		

Table 6 : Crime Category

# Naı	me	Туре	Collation	Attributes	Null	Default	Comments	Extra
1 id	P	bigint			No	None		AUTO_INCREMENT
2 cre	eated_at	datetime(6)			Yes	NULL		
3 is_	deleted	tinyint(1)			Yes	0		
4 upo	dated_at	datetime(6)			Yes	NULL		
5 cat	tegory	varchar(50)	utf8mb4_0900_ai_ci		No	None		
6 sub	b_category	varchar(50)	utf8mb4_0900_ai_ci		No	None		

Table 7: Aadhar Card

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	bigint			No	None		AUTO_INCREMENT
2	created_at	datetime(6)			Yes	NULL		
3	is_deleted	tinyint(1)			Yes	0		
4	updated_at	datetime(6)			Yes	NULL		
5	card_no 🔑	varchar(14)	utf8mb4_0900_ai_ci		Yes	NULL		
6	image	longblob			No	None		

Table 8 : Evidences

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	bigint			No	None		AUTO_INCREMENT
2	created_at	datetime(6)			Yes	NULL		
3	is_deleted	tinyint(1)			Yes	0		
4	updated_at	datetime(6)			Yes	NULL		
5	file_type	varchar(100)	utf8mb4_0900_ai_ci		No	None		
6	file_url	varchar(2048)	utf8mb4_0900_ai_ci		No	None		
7	crime_report_id 🔎	bigint			No	None		

Table 9: Address

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	bigint			No	None		AUTO_INCREMENT
2	created_at	datetime(6)			Yes	NULL		
3	is_deleted	tinyint(1)			Yes	0		
4	updated_at	datetime(6)			Yes	NULL		
5	address_line1	varchar(100)	utf8mb4_0900_ai_ci		Yes	NULL		
6	address_line2	varchar(100)	utf8mb4_0900_ai_ci		Yes	NULL		
7	city	varchar(20)	utf8mb4_0900_ai_ci		Yes	NULL		
8	country	varchar(20)	utf8mb4_0900_ai_ci		Yes	NULL		
9	latitude	double			Yes	NULL		
10	longitude	double			Yes	NULL		
11	pin_code	varchar(7)	utf8mb4_0900_ai_ci		Yes	NULL		
12	state	varchar(20)	utf8mb4_0900_ai_ci		Yes	NULL		

Table 10 : Audit Trails

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	bigint			No	None		AUTO_INCREMENT
2	created_at	datetime(6)			Yes	NULL		
3	is_deleted	tinyint(1)			Yes	0		
4	updated_at	datetime(6)			Yes	NULL		
5	message	varchar(1200)	utf8mb4_0900_ai_ci		Yes	NULL		
6	user_id 🔑	bigint			No	None		

Table 11: Feedback

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	bigint			No	None		AUTO_INCREMENT
2	created_at	datetime(6)			Yes	NULL		
3	is_deleted	tinyint(1)			Yes	0		
4	updated_at	datetime(6)			Yes	NULL		
5	comments	varchar(800)	utf8mb4_0900_ai_ci		Yes	NULL		
6	rating	smallint			No	None		
7	user_id 🔑	bigint			No	None		

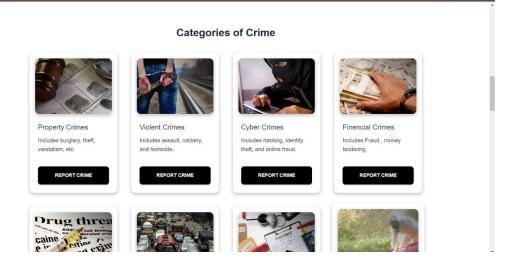
4.2 PROJECT MANAGEMENT RELATED STATISTICS

DATE	WORK PERFORMED	SLC PHASE	ADDITIONAL NOTES
November 1, 2024	Project Allotmentand User Requirements Gathering	Feasibility Study	Our team met the client Mr. Nitin Kudale (CEO,SIIT,Pune) to know his requirements.
November 10, 2024	Initial SRS Document Validation and Team Structure Decided	Requirement Analysis (Elicitation)	The initial SRS was presented to the client to understand his requirements better.
November 18, 2024	Designing the use cases, Class Diagram, Collaboration Diagram, E-R Diagram, and User Interfaces	Requirement Analysis & Design Phase	Database Design completed
November 30, 2024	Business Logic Component Design Started	Design Phase	
December 5, 2024	Coding Phase Started	Coding Phase	. 70% of Class Library implemented
December 23, 2024	Implementation of Web Application and Window Application Started	Coding Phase and Unit Testing	
December 31, 2024	After Ensuring Proper Functioning the Required Validations were Implemented	Coding Phase and Unit Testing	Class Library Modified as per the need
January 5, 2025	Some Improvement in UI	Improvement Phase	
January 11, 2025	The Project was Tested by the respective Team Leaders and the Project Manager	Testing Phase (Module Testing)	Unit Integration was done by the Project Manager
January 27, 2025	The Project was Submitted to Other Project Leader of Other Project Group For Testing	Testing Phase (Acceptance Testing)	The Project of Other Team was Taken up by the Team for Testing
	The Errors Found were Removed	Debugging	
February 9, 2025	Final Complete Testing	Final Testing	The Project was complete for submission
February 11, 2025	Final Submission of Project		Projected Submitted

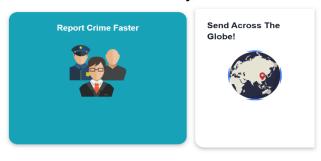
4.3 User Interface Demonstration

4.3.1 Home Page



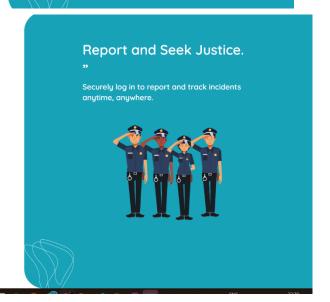


One Portal Gives Essential Safety Services in One Place.

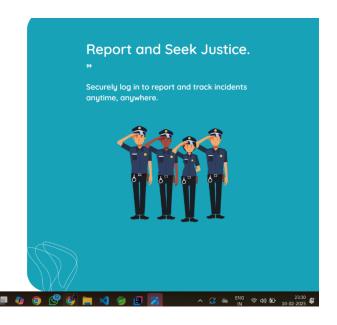


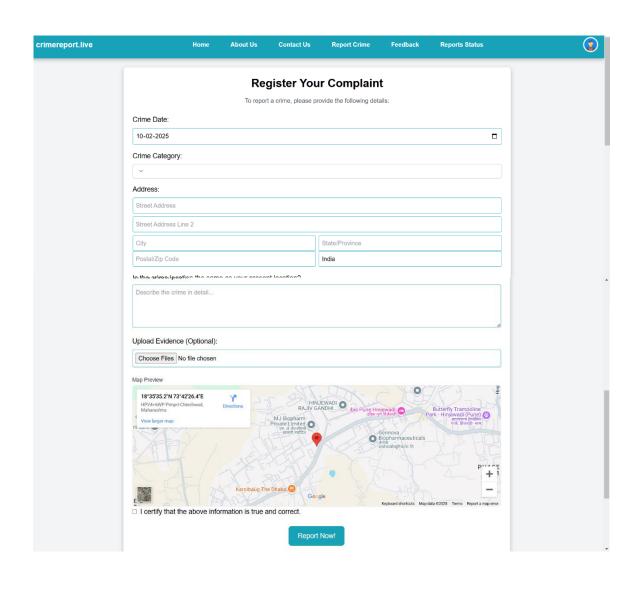


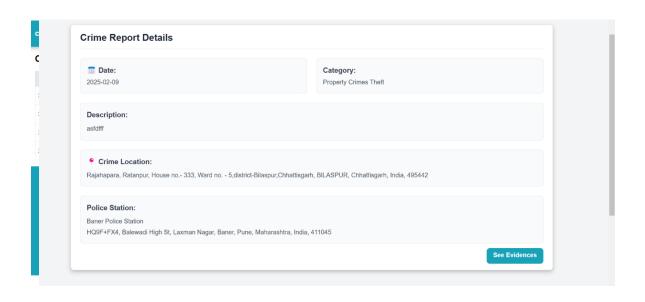
Create An Account Citizen Police Enter your Full Name Enter your Email Enter your Phone Number dd-mm-yyyy Enter your Card Number Enter your address Line 1 Enter your address Line 2 Enter your City Enter your state Enter your country Upload Adhaar Image: Choose File No file chosen















About Us

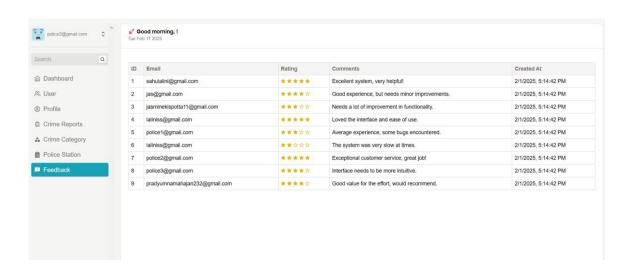
The Crime Reporting System is built to provide citizens with a fast, secure, and accessible way to report crimes and track case progress. By leveraging modern technology, we aim to bridge the gap between law enforcement agencies and the public, ensuring a transparent and efficient reporting system. Our platform simplifies the process of crime reporting, eliminating the need for physical visits to police stations and reducing bureaucratic delays. Users can submit complaints in real time, attach supporting evidence, and receive timely updates about their cases. With an intuitive and user-friendly interface, we empower individuals to take action against crime and contribute to a safer society. By providing a direct channel between citizens and law enforcement, we ensure that no crime goes unreported, fostering a culture of accountability and justice.

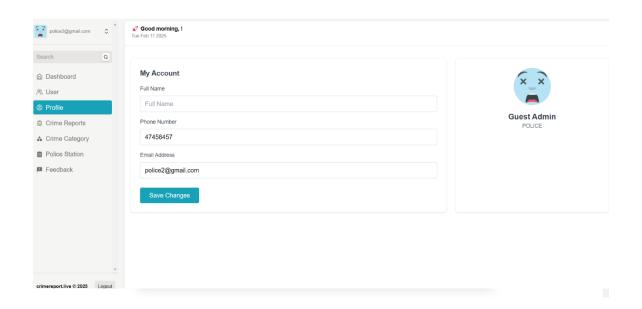
Empowering Citizens for a Safer Society

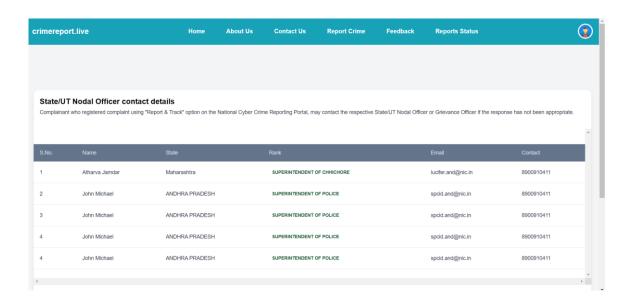
Reporting a crime should not be complicated. Our platform eliminates barriers by offering a simple, digital, and real-time way to file complaints and seek justice.

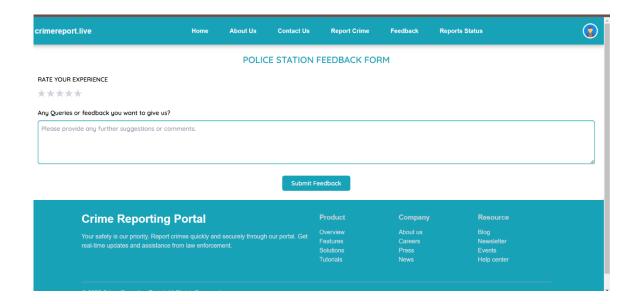
Key Features for Citizens

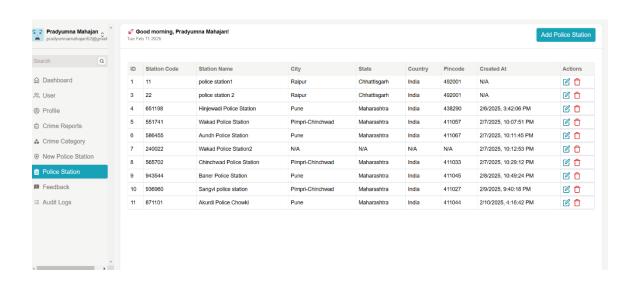
- ★ Report crimes online without visiting a police station.
- Track case progress and receive real-time updates.

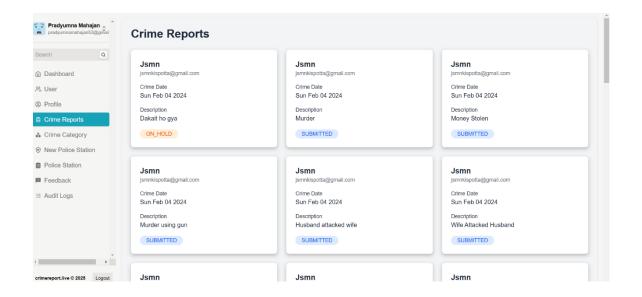


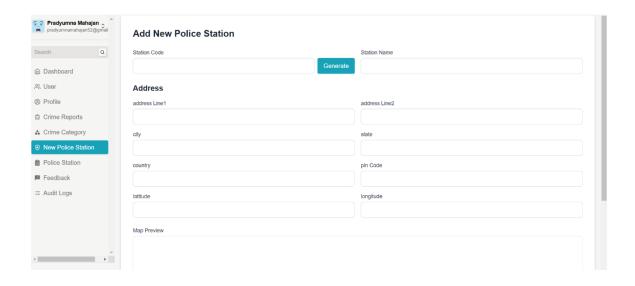


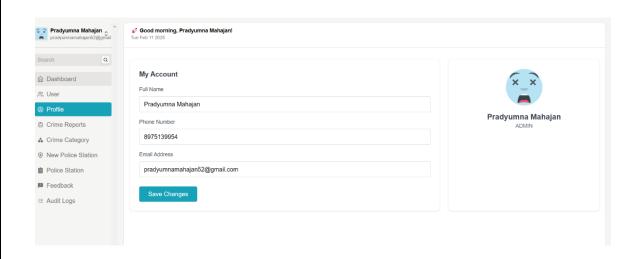


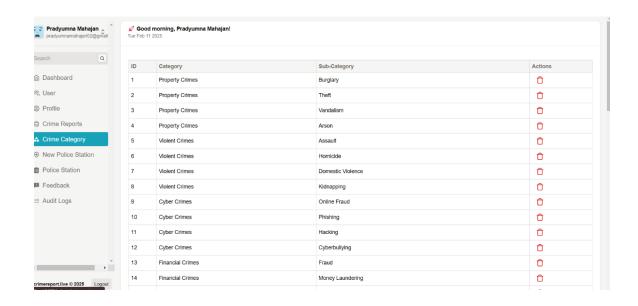


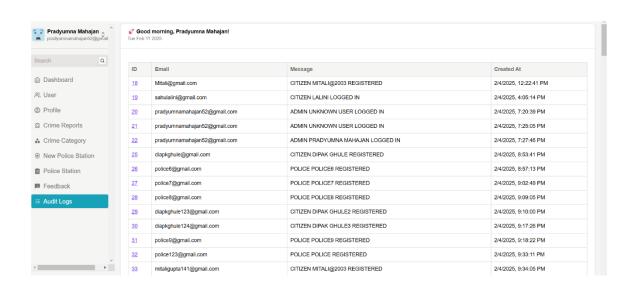


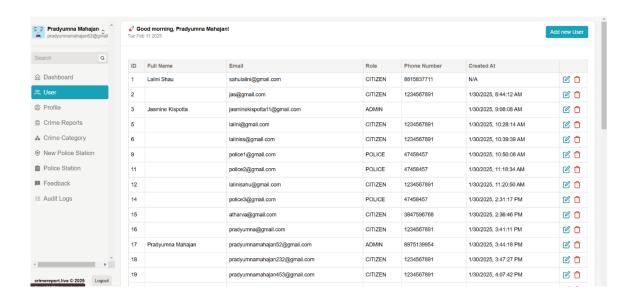












5. CONCLUSION

The Online Crime Reporting System successfully provides a digital platform that enhances public safety by enabling efficient crime reporting and management. Through secure authentication, real-time tracking, and streamlined communication between citizens and law enforcement, the system ensures transparency, accessibility, and accountability.

By implementing modern technologies such as React.js, Spring Boot, MySQL, and Spring Security, the project demonstrates a scalable and robust architecture. Features like OTP-based login, role-based access control, evidence submission, and automated case assignment contribute to the system's efficiency and usability.

This project not only improves crime reporting processes but also strengthens the responsiveness of law enforcement. Future enhancements may include AI-driven crime analytics, mobile app integration, and predictive policing to further enhance its impact. With continuous innovation and adoption, this system has the potential to make communities safer and law enforcement more effective.