Software Requirements Specification

for

Grievance Portal-4

Prepared by: Group Radiohead

Utsav Singh Tomar (IIT2021112)
Vishesh Vijayvargiya (IIT2021114)
Priyadarshini Roy (IIT2021133)
Mehak Gupta (IIT2021143)
Keshav Pandey (IIT2021173)

Indian Institute of Information Technology, Allahabad

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1. Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) is to provide a detailed description of the Grievance Portal. The SRS will explain the purpose, features, and functionalities of the system, as well as the external and internal interfaces. The intended audience for this document includes the development team, project stakeholders, and anyone who will be using or interacting with the system.

1.2 Product Scope

The purpose of this Software Requirements Specification (SRS) is to provide a detailed description of the Grievance Portal. The SRS will explain the purpose, features, and functionalities of the system, as well as the external and internal interfaces. The intended audience for this document includes the development team, project stakeholders, and anyone who will be using or interacting with the system.

The current features of the system include grievance submission, grievance tracking, reminder feature, rating officers, reopening grievances, officer dashboard, complaint feedback and status updation, complaint passing, view feedback, geolocation API, login, forgot password, responsive website, color coding, mailing system, and database population.

Prospective features include an admin login, SMS feature, and expansion/scaling.

1.3 Definitions, Acronyms, and Abbreviations

- SRS - Software Requirements Specification
- UI - User Interface
- API - Application Programming Interface
- URL - Uniform Resource Locator
- SMTP - Simple Mail Transfer Protocol

1.4 References

The following references were used in the creation of this SRS document:

- IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications
- Indian Government websites related to public services

2. Overall Description

2.1 Product Perspective

The Grievance Portal is a standalone web-based application that allows users to submit grievances and communicate with officers in a simplified and streamlined manner. The system is built using modern web technologies such as ReactJS, Tailwind CSS, NodeJS, and MongoDB.

2.2 Product Functions

The Grievance Portal for Government will provide the following functions:

- Grievance submission
- Grievance tracking
- Reminder feature
- Rating officers
- Reopening grievances
- Officer dashboard
- Complaint feedback and status updation
- Complaint passing
- View feedback
- Geolocation API
- Login
- Forgot password
- Responsive website
- Color coding
- Mailing system
- Database population

2.3 User Characteristics

The Grievance Portal for Government will be used by citizens of India, who may have varying levels of computer literacy and access to technology. The portal will be designed to accommodate the needs of all the citizens of India, including those with limited access to the internet or mobile devices.

2.4 Operating Environment

The system will be accessible via a web browser and will be hosted on a server. The system will be compatible with the latest versions of popular web browsers, such as Google Chrome, Mozilla Firefox, and Microsoft Edge. The system will be developed using web technologies such as ReactJS,NodeJS and MongoDB.

2.5 Design and Implementation Constraints

2.5.1 Technical constraints

These constraints refer to the technical limitations or requirements that must be taken into account during the development of the portal. Some of the technical constraints for the Grievance Portal for Government include:

- The portal should be developed using JavaScript, Node.js, Express.js, and React.
- The portal should use open-source and free software components to reduce development costs.
- The portal should be compatible with a range of web browsers and devices, ensuring that it is accessible to all citizens.
- The portal should be deployed on a secure and reliable server infrastructure with adequate backups and disaster recovery mechanisms.

2.5.2 Legal constraints

These constraints refer to the legal requirements and regulations that the portal must comply with. Some of the legal constraints for the Grievance Portal for Government include:

- The portal should adhere to the guidelines and standards set by the government of India for web development and security, such as the Guidelines for Indian Government Websites (GIGW).
- The portal should comply with the data protection and privacy laws of India.
- The portal should ensure that citizens' personal information is stored and transmitted securely.

2.5.3 Budgetary constraints

These constraints refer to the financial limitations or requirements that must be considered during the development of the portal. Some of the budgetary constraints for the Grievance Portal for Government include

- The portal should be developed within a predefined budget that is allocated by the government.
- The portal should use open-source and free software components wherever possible to reduce development costs.

2.5.4 Design constraints

These constraints refer to the design requirements that must be taken into account during the development of the portal. Some of the design constraints for the Grievance Portal for Government include:

- The portal must follow a user-centric design approach, with a focus on providing a seamless and intuitive user experience for citizens.
- The portal design must be visually appealing and easy to navigate, with clear and concise

content.
- The portal design must adhere to the guidelines and standards set by the government of India for web development and security, such as the Guidelines for Indian Government Websites (GIGW).

2.5.5 Implementation constraints

These constraints refer to the limitations or requirements that must be taken into account during the implementation of the portal. Some of the implementation constraints for the Grievance Portal for Government include:

- The portal must undergo rigorous testing and quality assurance to ensure that it is free of bugs and security vulnerabilities.
- The portal must be deployed on a secure and reliable server infrastructure with adequate backups and disaster recovery mechanisms.
- The portal must follow industry-standard coding practices, with a focus on modular and extensible code that can be easily maintained and updated.

2.6 User Documentation

The system will come with user documentation that will provide instructions on how to register, lodge grievances, track their status, and receive updates on the redressal process.

2.7 Assumptions and Dependencies

The following assumptions and dependencies are made for the Grievance Portal for Government:

- Citizens will have access to the internet and a compatible web browser or mobile device.
- Citizens will be able to provide accurate information about their grievances.
- Government departments and agencies will have the necessary infrastructure and resources to process grievances submitted through the portal.
- The portal will be integrated with the backend systems of various government departments and agencies using APIs.
- The portal will be hosted on a reliable and secure server with sufficient storage and bandwidth.

3. External Interface Requirements

3.1 User Interfaces

- The user interface must be compatible with modern web browsers, such as Google Chrome, Mozilla Firefox, and Microsoft Edge.
- The user interface must be responsive and adapt to different screen sizes, including mobile devices and desktop computers.
- The user interface must comply with the government's accessibility guidelines and support assistive technologies, such as screen readers and keyboard navigation.
- The user interface must support multiple languages, including English and regional languages.

3.2 Hardware Interfaces

- Web Server: The system will require a web server to host the application and manage web requests.
- Database Server: The system will require a database server to store and retrieve data related to grievances, citizens, and government services.
- Storage Devices: The system will require storage devices, such as hard disks or solid-state drives, to store application code, data, and backups.
- Network Devices: The system will require network devices, such as routers, switches, and firewalls, to ensure secure and reliable communication between the web server, database server, and other components.

3.3 Software Interfaces

- Operating System: The system will run on a specific operating system, such as Windows or Linux, and use its resources and services, such as file system, network stack, and security modules.
- Web Server: The system will use a web server software, such as Apache or Nginx, to handle incoming web requests and serve dynamic web pages.
- Application Server: The system will use an application server software, such as Tomcat or JBoss, to host and execute the Grievance Portal application code, including servlets, JSPs, and EJBs.
- Database Management System (DBMS): The system will use MongoDB to store and retrieve data related to grievances, citizens, and government services. The system will use NoSQL or a similar language to interact with the database.
- Feedback Management System: The system may integrate with a feedback management software, such as SurveyMonkey or Zendesk, to collect and analyze feedback from citizens on the grievance redressal process.
- Government Databases: The system may interact with various government databases, such as voter ID, Aadhaar, or PAN databases, to authenticate citizens, retrieve their personal information, and verify their grievances.

3.4 Communications Interfaces

- Web Protocols: The system will use web protocols, such as HTTP and HTTPS, to handle web requests and responses.
- Database Protocols: The system will use database protocols, such as JDBC and ODBC, to access the database server and retrieve or update data.
- Application Programming Interfaces (APIs): The system will use APIs to exchange data with external systems, such as government databases, payment gateways, and feedback management systems.

- Email Gateways: The system will use email gateways to send notifications and alerts to citizens and government departments or agencies.
- Secure Sockets Layer (SSL) and Transport Layer Security (TLS): The system will use SSL/TLS to ensure secure communication over the internet and protect sensitive data, such as user credentials and payment information.

4. Functional Requirements

4.1 User Registration and Login

Summary: This use case represents the process of creating a new account on the grievance portal. Users will provide their personal information, such as name, email address, and password, to create their account. This use case represents the process of logging in to an existing account on the grievance portal. Users will provide their login credentials to access their account.
Actors: Citizens
Pre-conditions:
• Internet connectivity.
• Only for allowed mail ids.
Main success scenario:
• User clicks on the login button.
• App checks for the authorization of login.
Extension:
Id or password incorrect. Shows error dialog box.
Post-condition:
Users can now access all features of the app.

4.2 Add New Grievance

Summary: This use case represents the process of creating a new grievance on the portal. Users will fill out a form with details about their complaint, such as the department, description, and subject.
Actors: Citizens
Pre-conditions:
• Internet connectivity.
• User has logged into his account.
Main success scenario:
• User creates a new grievance.
Extension:
Shows Grievance filed! dialog box.
Post-condition:
Users can now close the app and wait for the response or file another grievance.

4.3 View Pending Grievances

Summary: his use case represents the ability for users to view a list of grievances that have been submitted to the portal. Different grievances will be color coded as per the status of the grievance.
Actors: Citizens, Grievance Officer
Pre-conditions:
• Internet connectivity.
• User must have logged and file at least one grievance

Main success scenario:
• User sees a table showing all pending grievances
Extension:
Show the details of the grievance.
Post-condition:
Users can check all of their pending grievances.

4.4 Check Action History

Summary: The portal shall allow citizens to track the status of their grievances by entering their reference number or logging in to their account.
The portal shall display the current status of the grievance, such as "Pending," "In Process," or "resolved."
The portal shall send email notifications to citizens when the status of their grievance changes.
Actors: Citizens, Admin i.e. Grievance Officer
Pre-conditions:
• Internet connectivity.
• Admin must have taken action on at least one grievance submitted by the user
Main success scenario:
• User sees a table showing all grievances on which action has been taken.
Extension:
It will show the details of the grievance.
Post-condition:
NIL

4.5 Send Reminder

Summary: This use case represents sending reminder alerts to the admin or respective department if the grievance has been delayed or action is not being taken for it. The cooldown for the same will be of 7 days.
Actors: Citizens, Grievance Officer
Pre-conditions:
• Internet connectivity.
• The grievance should be a valid one.
Main success scenario:
• User sends a reminder alert to the admin.
Extension:
the user can define the priority of the reminder.
Post-condition:
NIL

4.6 Delete Grievance

Summary: This use case represents the process of closing a grievance once it has been resolved. The grievance will be marked as closed and no further action will be taken.
Actors: Citizens, Grievance Officer
Pre-conditions:
• Internet connectivity.
• Grievance must have been resolved or no need for.
Main success scenario:

• The grievance is deleted from the database.
Extension:
can add a comment.
Post-condition:
NIL

4.7 Submit Grievance to Department

Summary: This use case represents the process of assigning a grievance to an appropriate department or person for resolution. Administrators will review the grievance and assign it to the appropriate party.
Actors: Grievance Officer
Pre-conditions:
• Internet connectivity.
• Grievance should be assigned to the appropriate department.
Main success scenario:
• The Grievance gets sent to the appropriate Government Department for action.
Extension:
NIL
Post-condition:
The Department can view all the details of the grievance.

4.8 Take Action on Grievance

Summary: This use case represents the process of resolving a grievance to the satisfaction of the user. The assigned department or person will take appropriate action to address the complaint and update the status of the grievance.
Actors: Grievance Officer
Pre-conditions:
• Internet connectivity.
• Grievance should be a valid one.
Main success scenario:
• A status has been assigned to the grievance.
Extension:
add a question for the user if they are satisfied or not.
Post-condition:
Users can give their satisfaction and reviews.

4.9 View Grievances

Summary: This use case represents the process of investigating a grievance to determine the validity and appropriate resolution. The assigned department or person will review the grievance and any evidence provided, and determine the best course of action.
Actors: Grievance Officer
Pre-conditions:
• Internet connectivity.
• Officer login
Main success scenario:
• Admin can view all the grievances and assign the best course of action.
Extension:
Can inform the user if some other details are required or there is some mistake.
Post-condition:

Admin can now assign the grievance to the appropriate department.

4.10 Reopen Grievances

Summary: This use case represents the process of reopening a grievance in case the user is not satisfied by the actions taken on it. The assigned department or person will again receive the complaint as a new one with action history denoting that it was reopened..
Actors: Grievance Officer
Pre-conditions:
• Internet connectivity.
• User login
Main success scenario:
• Users can reopen the grievance if they’re not satisfied.
Extension:
The action history will contain what actions were performed on the grievance earlier.
Post-condition:
Admin now can work and update the status of the grievance.

4.11 Add Officer

Summary: The main admin of the district can add/assign a new officer in his/her district as per requirement in each department.
Actors: Admin, Grievance Officer
Pre-conditions:
• Internet connectivity.
• Admin login
Main success scenario:
• Admin can add officers into the database and their district.
Extension:
Can assign a grievance to the officer.
Post-condition:
Admin can now assign an officer to their district.

4.12 View Officer Details

Summary: This use case represents the process of viewing the details of the officer in each district about what they’re tasked to do and about their work and feedback from the user.
Actors: Admin, Grievance Officer
Pre-conditions:
• Internet connectivity.
• Admin login
Main success scenario:
• Admin can view all the officers and their details in a tabular format.
Extension:
Can add a new officer.
Post-condition:
Admin can now view all the officers in their respective districts.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The system must be able to handle a large volume of grievances and load pages quickly.
The system must be able to handle concurrent requests from multiple users.

5.2 Security Requirements

The system must comply with relevant government regulations for data protection and privacy.
The System must use encryption to protect sensitive data, such as citizen's personal information and supporting documentation.

5.3 Safety Requirements

The system must be available 24/7, with minimal downtime for maintenance and upgrades.
The system must have a backup and disaster recovery plan to ensure data and service availability in case of unexpected events.
5.4 Usability

The system must have a user-friendly interface that is easy to navigate and understand.
The system must accommodate the needs of both rural and urban populations in India, such as accessibility features for users with disabilities and language support for regional languages.

5.4 Software Quality Attributes

- Security: The portal will ensure the confidentiality, integrity, and availability of citizen data and prevent unauthorized access, modification, or disclosure. The portal will use industry-standard security measures such as encryption, authentication, and access control to protect sensitive data.
- Scalability: The portal will be able to handle a large volume of traffic and support multiple concurrent users without any degradation in performance or functionality. The portal will use load balancing, caching, and other optimization techniques to ensure scalability.
- Usability: The portal will be easy to use and navigate for citizens of all ages and technical backgrounds. The portal will have a user-friendly interface with clear instructions and feedback mechanisms to guide citizens through the grievance filing process.
- Reliability: The portal will be highly available and reliable, with minimal downtime or errors. The portal will use fault tolerance, redundancy, and error handling techniques to ensure reliability.
- Maintainability: The portal will be easy to maintain and update, with clear documentation, modular code, and automated testing. The portal will use a version control system and follow best practices for code management to ensure maintainability.

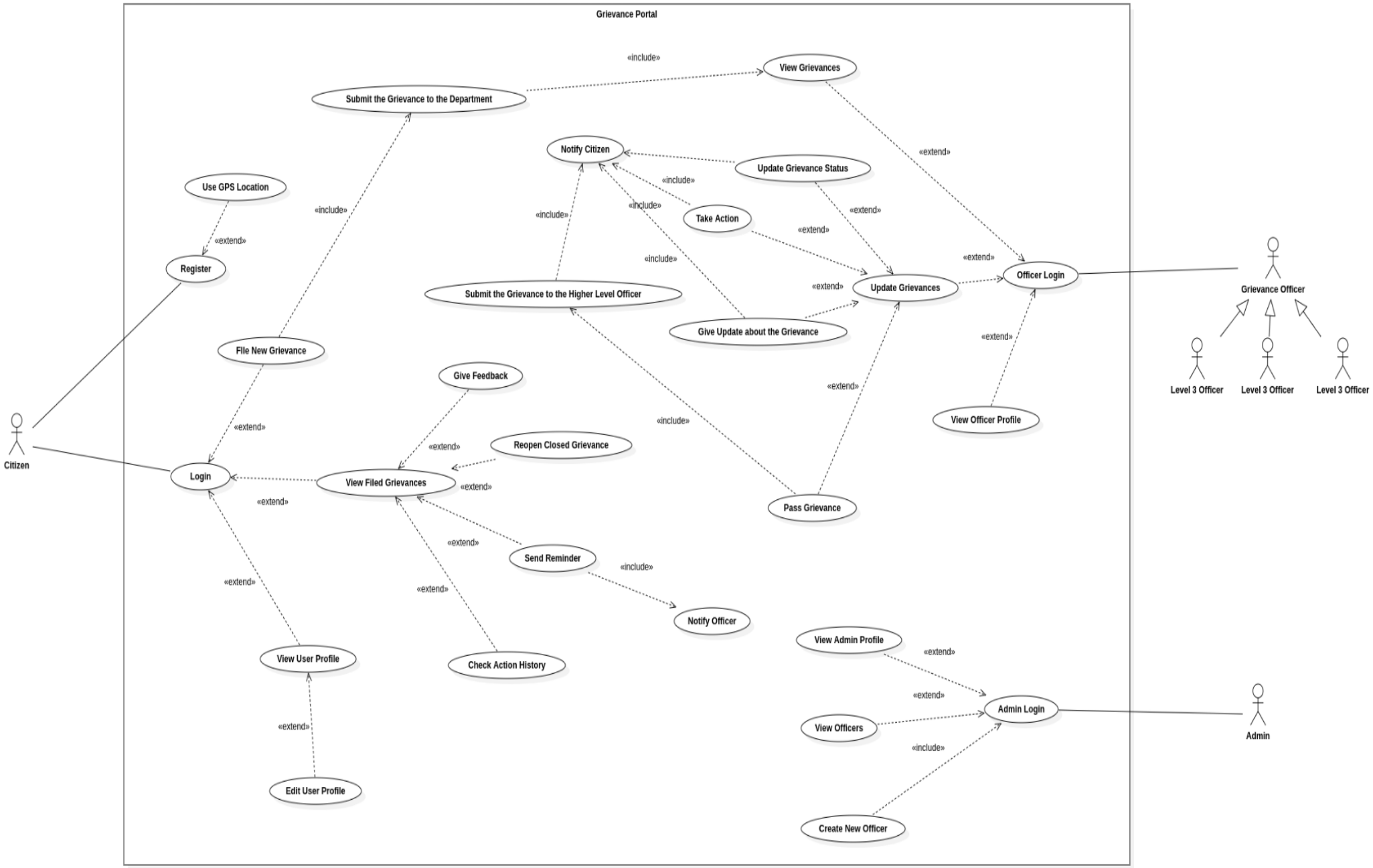
5.5 Business Rules

- The portal will be accessible to citizens of India, both in rural and urban areas, who are above 18 years of age.
- The portal will support the filing of grievances related to various government services, including public utilities, transportation, education, healthcare, law enforcement, and taxation.
- The portal will provide citizens with a unique Grievance ID for tracking the status of their grievances.
- The portal will authenticate the identity of citizens using their Aadhaar or PAN number or other government-issued identification documents.
- The portal will notify citizens of the status of their grievances via SMS and email.
- The portal will maintain a history of all the grievances filed by citizens and their resolution status for audit and analysis purposes.
- The portal will ensure the confidentiality and privacy of citizen data and adhere to all relevant laws and regulations.

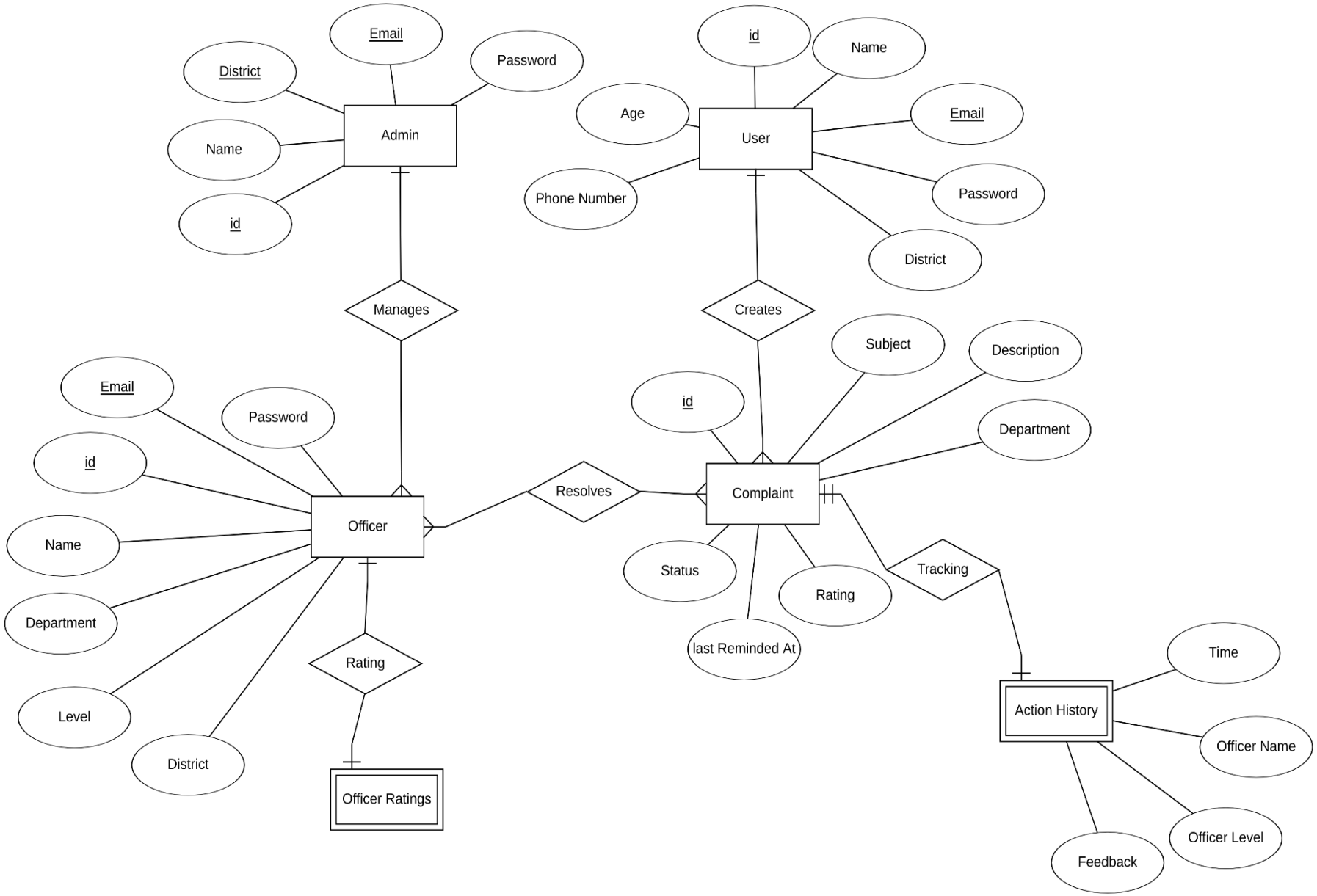
6. Conclusion

This SRS document has provided a detailed specification for the development of a grievance portal for redressal management. The system will provide users with an easy and efficient way to lodge grievances, track their status, and receive redressal. The system will also provide administrators with a comprehensive way to manage grievances and the redressal process.

Appendix A: Use Case Diagram


Grievance Portal
Citizen
Register
Use GPS Location
Login
File New Grievance
Submit the Grievance to the Department
View Filed Grievances
Give Feedback
Reopen Closed Grievance
View User Profile
Edit User Profile
Check Action History
Send Reminder
Notify Officer
Notify Citizen
Update Grievance Status
Take Action
Submit the Grievance to the Higher Level Officer
Give Update about the Grievance
Pass Grievance
View Grievances
Update Grievances
Officer Login
View Officer Profile
Grievance Officer
Level 3 Officer
Level 3 Officer
Level 3 Officer
View Admin Profile
Admin Login
View Officers
Create New Officer
Admin
«include»
«extend»

ER- DIAGRAM


Email
District
Password
Name
Admin
id
Manages
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Age
User
Email
Phone Number
Password
District
Creates
Email
Password
id
Officer
Name
Department
Level
District
Rating
Officer Ratings
Resolves
Subject
Description
id
Department
Complaint
Status
Rating
last Reminded At
Tracking
Time
Action History
Officer Name
Officer Level
Feedback

Appendix B: Glossary

- Grievance: a complaint or concern lodged by a user on the system.
- Redressal: the process of addressing or resolving a grievance.
- Portal: a website or application that provides users with access to information and services.
- SRS: Software Requirements Specification.
- IEEE: Institute of Electrical and Electronics Engineers.

Appendix C: Analysis Models

IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications.