# Software Requirements Specification

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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

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- SRS-SoftwareRequirementsSpecification
- UI-UserInterface
- API-ApplicationProgrammingInterface
- URL-UniformResourceLocator
  SMTP-SimpleMailTransferProtocol

## 1.4  References

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

- IEEEStd830-1998,IEEERecommendedPracticeforSoftwareRequirementsSpecifications
- IndianGovernmentwebsitesrelatedtopublicservices

# 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:

- Grievancesubmission
- Grievancetracking
- Reminderfeature
- Ratingofficers
- Reopeninggrievances
- Officerdashboard
- Complaintfeedbackandstatusupdation
- Complaintpassing
- Viewfeedback
- GeolocationAPI
- Login
- Forgotpassword
- Responsivewebsite
- Colorcoding
- Mailingsystem
- Databasepopulation

## 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    DesignandImplementationConstraints

### 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:

- TheportalshouldbedevelopedusingJavaScript,Node.js,Express.js,andReact.
- Theportalshoulduseopen-sourceandfreesoftwarecomponentstoreducedevelopmentcosts.
- Theportalshouldbecompatiblewitharangeofwebbrowsersanddevices,ensuringthatitis accessible to all citizens.
- Theportalshouldbedeployedonasecureandreliableserverinfrastructurewithadequate 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).
- TheportalshouldcomplywiththedataprotectionandprivacylawsofIndia.
- Theportalshouldensurethatcitizens'personalinformationisstoredandtransmittedsecurely.

### 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

- Theportalshouldbedevelopedwithinapredefinedbudgetthatisallocatedbythegovernment.
- Theportalshoulduseopen-sourceandfreesoftwarecomponentswhereverpossibletoreduce 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:

- Theportalmustfollowauser-centricdesignapproach,withafocusonprovidingaseamlessand 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:

- Theportalmustundergorigoroustestingandqualityassurancetoensurethatitisfreeofbugs and security vulnerabilities.
- Theportalmustbedeployedonasecureandreliableserverinfrastructurewithadequate backups and disaster recovery mechanisms.
- Theportalmustfollowindustry-standardcodingpractices,withafocusonmodularand 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:
- Citizenswillhaveaccesstotheinternetandacompatiblewebbrowserormobiledevice.
- Citizenswillbeabletoprovideaccurateinformationabouttheirgrievances.
- Governmentdepartmentsandagencieswillhavethenecessaryinfrastructureandresourcesto process grievances submitted through the portal.
- Theportalwillbeintegratedwiththebackendsystemsofvariousgovernmentdepartmentsand agencies using APIs.
- Theportalwillbehostedonareliableandsecureserverwithsufficientstorageandbandwidth.

# 3.   External Interface Requirements

## 3.1   User Interfaces

- Theuserinterfacemustbecompatiblewithmodernwebbrowsers,suchasGoogleChrome, Mozilla Firefox, and Microsoft Edge.
- Theuserinterfacemustberesponsiveandadapttodifferentscreensizes,includingmobile devices and desktop computers.
- Theuserinterfacemustcomplywiththegovernment'saccessibilityguidelinesandsupport assistive technologies, such as screen readers and keyboard navigation.
- Theuserinterfacemustsupportmultiplelanguages,includingEnglishandregionallanguages.

## 3.2 Hardware Interfaces

- WebServer:Thesystemwillrequireawebservertohosttheapplicationandmanageweb requests.
- DatabaseServer:Thesystemwillrequireadatabaseservertostoreandretrievedatarelatedto grievances, citizens, and government services.
- StorageDevices:Thesystemwillrequirestoragedevices,suchasharddisksorsolid-state drives, to store application code, data, and backups.
- NetworkDevices:Thesystemwillrequirenetworkdevices,suchasrouters,switches,and firewalls, to ensure secure and reliable communication between the web server, database server, and other components.

## 3.3 Software Interfaces

- OperatingSystem:Thesystemwillrunonaspecificoperatingsystem,suchasWindowsor Linux, and use its resources and services, such as file system, network stack, and security modules.
- WebServer:Thesystemwilluseawebserversoftware,suchasApacheorNginx,tohandle incoming web requests and serve dynamic web pages.
- ApplicationServer:Thesystemwilluseanapplicationserversoftware,suchasTomcator JBoss, to host and execute the Grievance Portal application code, including servlets, JSPs, and EJBs.
- DatabaseManagementSystem(DBMS):ThesystemwilluseMongoDBtostoreandretrieve data related to grievances, citizens, and government services. The system will use NoSQL or a similar language to interact with the database.
- FeedbackManagementSystem:Thesystemmayintegratewithafeedbackmanagement software, such as SurveyMonkey or Zendesk, to collect and analyze feedback from citizens on the grievance redressal process.
- GovernmentDatabases:Thesystemmayinteractwithvariousgovernmentdatabases,suchas voter ID, Aadhaar, or PAN databases, to authenticate citizens, retrieve their personal information, and verify their grievances.

## 3.4 Communications Interfaces

- WebProtocols:Thesystemwillusewebprotocols,suchasHTTPandHTTPS,tohandleweb requests and responses.
- DatabaseProtocols:Thesystemwillusedatabaseprotocols,suchasJDBCandODBC,to access the database server and retrieve or update data.
- ApplicationProgrammingInterfaces(APIs):ThesystemwilluseAPIstoexchangedatawith 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.

## 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 into 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.

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.
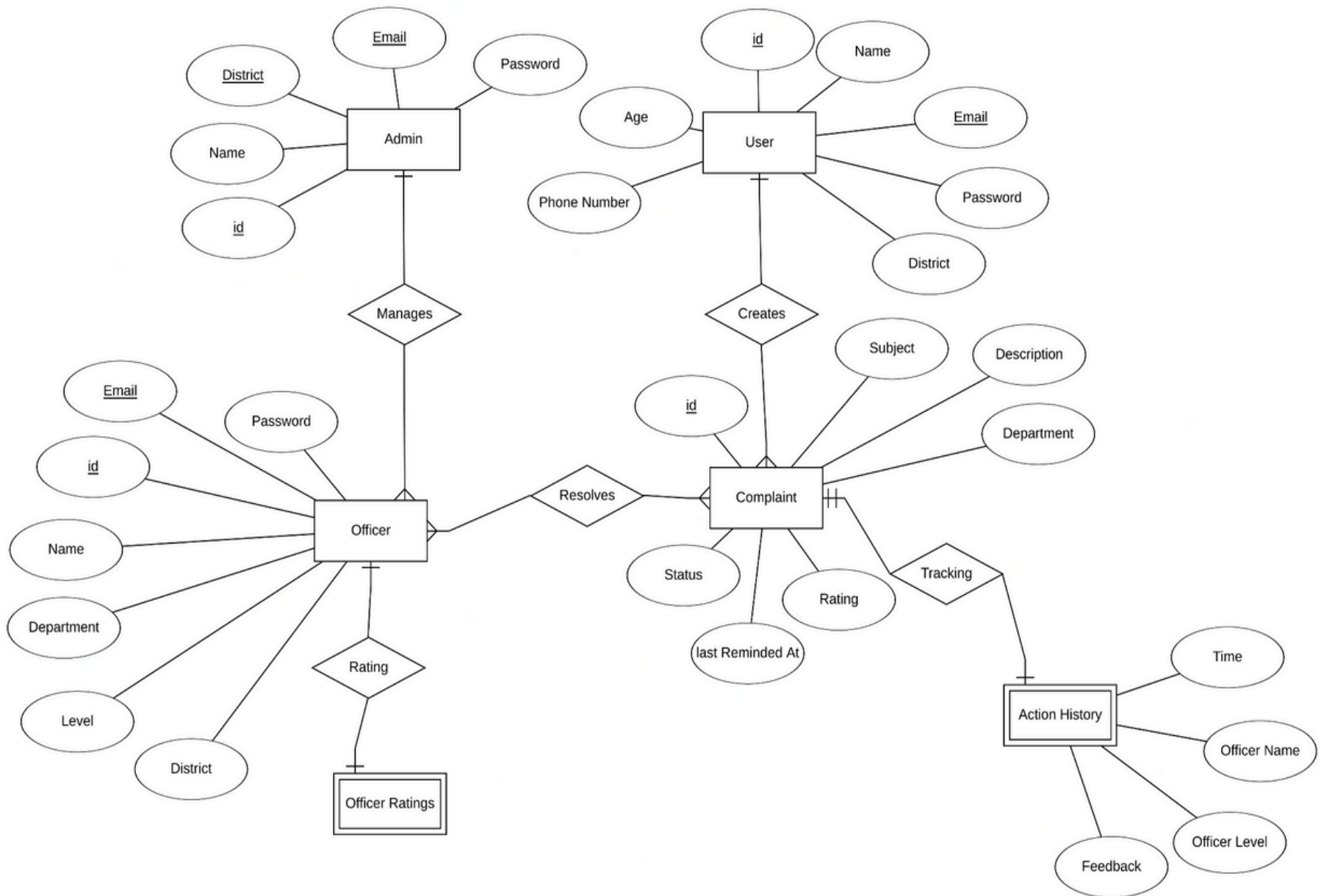
## 5.5   Business Rules

- 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

Submit the Grievance to the Department

View Grievances «include»

Notify Citizen

Update Grievance Status

«include»

Take Action

«extend»

Use GPS Location

Register «extend»

«include»

«include»

Submit the Grievance to the Higher Level Officer

«include»

Update Grievances «extend»

Officer Login «extend»

Grievance Officer

File New Grievance

Give Update about the Grievance «extend»

Level 3 Officer   Level 3 Officer   Level 3 Officer

«extend»

«extend»

View Officer Profile

Give Feedback

Reopen Closed Grievance

«extend»

«include»

Pass Grievance

Login «extend»

View Filed Grievances «extend»

«extend»

Citizen

Send Reminder «include»

Notify Officer

«extend»

View User Profile

Check Action History

View Admin Profile «extend»

View Officers «extend»

Admin Login

Admin

«extend»

«include»

Edit User Profile

Create New Officer

# ER- DIAGRAM

# 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.