

# IT314: Software Engineering

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## **Project Title:** Crowd-Powered Smart Complaint Management System

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**Group : 6**

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## Task 1

### (a) Identification of Stakeholders and End Users

#### Stakeholders / End Users

1. **Citizens (End Users)**
  - Primary users who submit complaints (road damage, garbage, streetlight, etc.).
  - Require **easy submission, live tracking, and transparency**.
2. **Government Authorities (Municipal Officials)**
  - Officials responsible for resolving complaints.
  - Need a **centralized dashboard, prioritization, and status update system**.
3. **System Administrators**
  - Manage the application backend.
  - Responsible for **security, uptime, user roles, and escalations**.

### (b) Elicitation Techniques (with Justification)

Stakeholder	Elicitation Techniques	Justification
<b>Citizens</b>	Surveys, Questionnaires, Focus Groups	Large, diverse group → surveys for scalability, focus groups for usability issues.

<b>Government Authorities</b>	Interviews, Workshops, Observation	Direct interviews and workshops → understand workflows, priorities, and pain points.
<b>System Administrators</b>	Interviews, Document Analysis, Prototyping	Need technical + operational requirements, documentation study, and prototyping.

## (c) Apply Elicitation Techniques → Requirements

### Functional Requirements (FR)

#### For Citizens

1. Submit complaint with **photo, description, category, location**.
2. Get **tracking ID** for each complaint.
3. View **status updates** (Received → In Progress → Resolved).
4. Upvote existing complaints in their area.

#### For Government Authorities

5. View all complaints on a **centralized dashboard**.
6. Complaints are **auto-categorized and prioritized** by AI.
7. Update complaint status (with remarks).
8. Assign complaints to respective departments.

#### For System Admins

9. Manage **user roles and access levels** (citizen, officer, admin).

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10. Monitor **system health, uptime, and escalations**.
  11. Ensure **security and privacy compliance**.
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### Non-Functional Requirements (NFR)

1. **Usability:** Simple UI for all ages and backgrounds.
  2. **Performance:** AI classification within 5 seconds.
  3. **Scalability:** Handle thousands of concurrent complaints.
  4. **Reliability:** 24/7 uptime, minimal downtime.
  5. **Security & Privacy:** Data encryption, federated learning for sensitive data.
  6. **Transparency:** Citizens always see real-time status of their complaint.
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### Domain Requirements (DR)

1. Complaints must be mapped to **municipal departments**.
  2. Must comply with **local government data protection laws**.
  3. Citizens must receive **official acknowledgment** (tracking ID).
  4. Long-term **data storage** for government planning.
  5. Must support **geotagging** of complaints.
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## (d) User Stories (Agile Product Backlog)

### Citizen Stories

1. **Complaint Submission**
  - *As a citizen, I want to submit a complaint with photo, description, and location so that the authorities can resolve it quickly.*

- **Acceptance Criteria:**
    - Complaint must include photo, category, and auto-location.
    - Complaint gets a unique tracking ID.
  - 2. **Track Complaint Status**
    - *As a citizen, I want to track the status of my complaint so that I know the progress being made.*
    - **Acceptance Criteria:**
      - Complaint status updates visible on the app.
      - Notifications sent when status changes.
  - 3. **Upvote Existing Complaints**
    - *As a citizen, I want to upvote a complaint so that issues with higher public impact get prioritized.*
    - **Acceptance Criteria:**
      - Citizens can see nearby complaints.
      - Upvote count visible to all users.
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## Government Authority Stories

- 4. **View Dashboard**
  - *As a government authority, I want to see all complaints in a centralized dashboard so that I can prioritize and allocate resources efficiently.*
  - **Acceptance Criteria:**
    - Dashboard shows categorized & prioritized complaints.
    - Filter by location, type, urgency.
- 5. **Update Complaint Status**
  - *As a government authority, I want to update the complaint status so that citizens are informed of progress.*
  - **Acceptance Criteria:**
    - Status must be updated with remarks.
    - Citizens notified of updates.



## 6. Assign Complaints

- *As a government authority, I want to assign complaints to relevant departments so that they are resolved by the right team.*
  - **Acceptance Criteria:**
    - Officer can assign complaint to department.
    - Assignment recorded in system logs.
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## System Admin Stories

### 7. User Role Management

- *As a system admin, I want to manage user roles so that only authorized people can perform specific actions.*
- **Acceptance Criteria:**
  - Citizens, officers, and admins have different permissions.
  - Unauthorized access denied.

### 8. System Monitoring

- *As a system admin, I want to monitor system health and logs so that I can ensure smooth functioning.*
- **Acceptance Criteria:**
  - Logs of system activities available.
  - Alerts generated for failures/downtime.

### 9. Data Security

- *As a system admin, I want to ensure data security so that user privacy is maintained.*
- **Acceptance Criteria:**
  - All data encrypted in storage and transfer.
  - Compliance with government privacy regulations.