IT314: Software Engineering
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Project Title: Crowd-Powered Smart Complaint Management System
Group : 6
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TASK 1:

- **Identification of Stakeholders and End Users:Here are the main people involved and what they need:**
  1) **Citizens (Main Users):**
     - These are everyday people who report problems like road damage, garbage, broken streetlights, Wi-Fi issues, or noise.
     - They need a simple way to send reports, track them in real time, and see clear updates.

  2) **Government Workers (Municipal Officials):**
     - These are the officials who fix the problems.
     - They need one main screen to see all reports, sort them by importance, and update statuses easily.

  3) **System Managers (Admins):**
     - These people handle the behind-the-scenes work.
     - They make sure the system is secure, running smoothly, and handles user roles and urgent issues.

- **How to Gather Needs (Elicitation Techniques with Reasons):**

Stake holder	Techniques	Why It Works
Citizens	Surveys, Questionnaires, Group Discussions	This group is big and varied, so surveys reach many people quickly. Group talks help find out about ease of use.

Government Workers	One-on-One Talks, Group Workshops, Watching Their Work	Direct talks and workshops help understand their daily jobs, key needs, and problems. Watching them work shows real issues.
System Managers	One-on-One Talks, Reviewing Documents, Testing Early Versions	They need tech and daily operation details. Reviewing docs gives facts, and testing versions helps spot fixes early.

- ❖ **<u>Needs from Gathering Techniques (Requirements):</u>**

These are the key things the system must do or have, based on what we learned.

Functional Requirements (What the System Does)

For Citizens:

1. Send a report with a photo, description, type (like road damage or noise), and location.
2. Get a unique ID to track each report.
3. See updates on status (like "Received," "Working on It," "Fixed").
4. Vote up reports in their area to show bigger problems.

For Government Workers:

5. See all reports on one main screen.
6. Let AI auto-sort and rank reports by urgency, using feedback and Federated Learning for privacy.
7. Update report status with notes.
8. Send reports to the right team or department.

For System Managers:

9. Control user types and what they can do (like citizen, worker, or manager).
10. Check system health, uptime, and handle urgent alerts.
11. Keep everything secure and follow privacy rules, using Federated Learning for sensitive info.

Non-Functional Requirements (How Well It Works)

1. **Ease of Use:** Simple design that anyone can use, no matter their age or background, with mobile app support.
2. **Speed:** AI sorting done in under 5 seconds.
3. **Growth:** Handle lots of reports at once, even thousands.
4. **Dependability:** Always on 24/7 with very little downtime.
5. **Safety & Privacy:** Encrypt data and use Federated Learning to protect user info without sharing it.
6. **Openness:** Users can always see live updates on their reports.

Domain Requirements (Rules for This Field)

1. Link reports to the right government departments.
2. Follow local laws on data protection.
3. Send an official ID to users for every report.
4. Store data long-term to help with city planning.
5. Use location tagging for all reports to map problems accurately.

❖ User Stories (Agile List of Features)

These are short stories that describe what users want, like in agile planning. I've added useful details like mobile notifications and privacy checks.

Citizen Stories

1. **Sending a Report**
    - As a citizen, I want to send a report with a photo, description, and location so officials can fix it fast.
    - **What Makes It Good:**
        - Must include photo, type, and auto-location.
        - Gets a unique tracking ID right away.
2. **Tracking Status**

- As a citizen, I want to check my report's status so I know what's happening.
- **What Makes It Good:**
  - Status shows up in the app or website.
  - Get push notifications on my phone for changes.

3. **Voting on Reports**
   - As a citizen, I want to vote up a report so big issues get attention first.
   - **What Makes It Good:**
     - See reports near me on a map.
     - Vote count shows for everyone, helping AI prioritize.

<u>Government Worker Stories</u>

4. **Viewing the Main Screen**
   - As a government worker, I want one screen for all reports so I can plan and use resources well.
   - **What Makes It Good:**
     - Shows sorted and ranked reports.
     - Filter by place, type, or how urgent.

5. **Updating Status**
   - As a government worker, I want to change a report's status so citizens stay informed.
   - **What Makes It Good:**

        - Add notes with each update.
        - Auto-send notices to the citizen.

6. **Assigning Reports**
    - As a government worker, I want to give reports to the right team so they get fixed by experts.
    - **What Makes It Good:**
        - Easy assignment to departments.
        - Track who got it in the system logs.

System Manager Stories

7. **Managing User Roles**
    - As a system manager, I want to set user roles so only the right people do certain things.
    - **What Makes It Good:**
        - Different access for citizens, workers, and managers.
        - Block anyone without permission.
8. **Checking System Health**
    - As a system manager, I want to watch the system's health and logs so it runs smoothly.
    - **What Makes It Good:**
        - See activity logs anytime.
        - Get alerts for problems or downtime.

9. **Keeping Data Safe**
    - As a system manager, I want strong data security so privacy is protected.
    - **What Makes It Good:**
        - Encrypt all data when stored or sent.
        - Follow government rules, using Federated Learning for private data.