

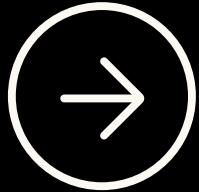


# SOFTWARE TESTING

presented by **obed magori**



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# INTRODUCTION

Hello! My Team EcoTesters from power learn project, and I'm proud to present my QA journey for the CleanCity project team includes:

- OBED MAGORI





# INTRODUCTION

I conducted comprehensive Quality Assurance testing on the CleanCity web application – a platform focused on smart waste management and community engagement.

My testing focused on:

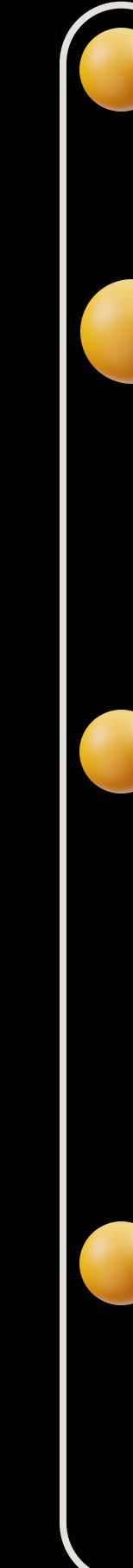
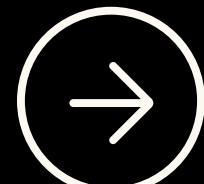
- Functional coverage
- User experience
- Security concerns





# TESTING APPROACH

I followed the Software Testing Life Cycle (STLC) framework. My scope included:



**Functional testing (Registration, Pickup Scheduling, Community Features)**  
**Non-functional testing (Usability, Performance, Accessibility, Security)**

We employed manual testing using tools like:

Google Chrome DevTools  
Jira for defect tracking  
WCAG standards for accessibility checks

My strategy prioritized real-world scenarios, intentional edge cases, and data consistency checks.

# KEY FINDINGS



## ✓ Positive Aspects:

- Clean, responsive UI across devices
- Community feed and awareness features are user-friendly
- Smooth pickup scheduling logic when valid data is entered



## ⚡ Critical Issues:

- Plain text password storage in localStorage – a severe security flaw
- Filtering logic on dashboard shows wrong locations (Eldoret shows Nairobi data)



## ⚠ Major Issues:

Help startups adapt quickly to changes in the market. This means keeping an eye on what's happening, analyzing data, and being willing to try new things to keep their marketing strategy fresh and effective.



# CRITICAL ISSUES DEMO

## ISSUE 1: PASSWORD STORED AS PLAIN TEXT

### Steps I Took to Identify the Security Vulnerability

#### User Registration

I began by registering a user account to gain access to the application's functionalities.

#### Opening Developer Tools

Next, I opened the browser's Developer Tools and navigated to the Application tab, which provides insights into the client-side storage mechanisms.

#### Inspecting localStorage

Within the Application tab, I examined the localStorage section to review the data stored by the application.

#### Discovering the Vulnerability

Upon inspecting localStorage, I found that the user's password was stored in plain text, which is a significant security risk.

#### Impact Assessment

Severity: High

The storage of sensitive user data, such as passwords, in plain text poses a high risk of user data compromise.

Attackers who gain access to the application's storage could easily obtain user credentials, leading to unauthorized access and potential misuse of accounts.

```
if (!localStorage.getItem(STORAGE_KEYS.USERS)) {
  const sampleUsers = [
    {
      id: '1',
      name: 'Demo User',
      email: 'user@cleancity.com',
      password: 'password123', // Plain text password (vulnerable)
      role: 'user',
      createdAt: '2024-01-01T00:00:00.000Z'
    },
    {
      id: '2',
      name: 'Admin User',
      email: 'admin@cleancity.com',
      password: 'admin123', // Plain text password (vulnerable)
      role: 'admin',
      createdAt: '2024-01-01T00:00:00.000Z'
    }
  ];
  localStorage.setItem(STORAGE_KEYS.USERS, JSON.stringify(sampleUsers));
}
```



# CRITICAL ISSUES DEMO



## Issue 2: Location Filter Malfunction

I selected "Eldoret" on the dashboard. Requests from Nairobi appeared.

Provide insights and reports on market trends  
and consumer behavior to help startups make informed decisions.

 Filter Requests

## FILTER BY STATUS:

All Statuses

## FILTER BY LOCATION:

Eldoret

Showing 2 of 5 requests

REQUEST ID	NAME	LOCATION	WASTE TYPE	PREFERRED DATE	STATUS
REQ001	John Doe	Nairobi	General Waste	2024-01-15	<span>PENDING</span>
REQ005	David Brown	Nairobi	Recyclable	2024-01-19	<span>MISSING</span>



# CRITICAL ISSUES DEMO



FEEDBACK FORM VALIDATION MISSING

I Submitted form with empty input but the  
Blank feedback was accepted  
→ This Reduces feedback quality

... coverage and by  
the journalists and

renda

# Report Missed Pickup

## Feedback Form

Report missed pickups or provide feedback about our service. Your feedback helps us improve our operations.

Feedback submitted successfully!

REQUEST ID \*

e.g., REQ001



# CRITICAL ISSUES DEMO

**WEAK AUTHENTICATION FLOW (NO PASSWORD  
HASHING & NO BACKEND VERIFICATION)**

- What I saw: The login simply compares entered credentials against what's stored in localStorage in plain text.
- Impact: Anyone with browser access can read or alter credentials directly in localStorage and log in as any user – even as Admin.
- Why it's critical: This violates the security requirement in FR-082 ("prevent SQL injection and XSS") and FR-078-FR-079 about data integrity.

The image shows a code editor interface with a sidebar on the left displaying a file tree. The tree includes a 'top' folder, a 'e...' folder containing several files (one highlighted in orange), a 'C...' folder, an 'i...' folder, a 'S...' folder containing a folder icon, and a 'f...' folder containing a file icon.

```
2 // Uses localStorage for data persistence
3
4 const STORAGE_KEYS = {
5   PICKUP_REQUESTS: 'cleancity_pickup_requests',
6   FEEDBACK: 'cleancity_feedback',
7   USERS: 'cleancity_users'
8 };
9
10 // Initialize with sample data if no data exists
11 const initializeData = () => {
12   if (!localStorage.getItem(STORAGE_KEYS.PICKUP_REQUESTS)) {
13     const sampleRequests = [
14       {
15         id: 'REQ001',
16         name: 'John Doe',
17         location: 'Nairobi',
18       }
19     ];
20     localStorage.setItem(STORAGE_KEYS.PICKUP_REQUESTS, JSON.stringify(sampleRequests));
21   }
22 }
```



# RECOMMENDATIONS

## ⚡ Immediate:

- Encrypt stored passwords
- Fix location filtering logic
- Add form validation to prevent empty submissions

## ⚙️ Long-Term:

- Session timeout alerts
- Improved error messaging and logging

## 📁 Process:

- Add automated regression testing
- Continuous user feedback mechanisms

## 📅 Style & Visuals

- Mix technical and business impact insights
- Visual aids: severity bar chart, testing timeline, before/after screenshots, bug-type icons





power learn project

# THANK YOU

for your time and attention

presented by OBED MAGORI

