CSE 314: Software Engineering Lab

Project Proposal

Submitted by:

Sajid Shahan Rahman *(22201186)*

Tanisha Taranoon *(22201169)*

Sanjida Rahman *(22201187)*

Submitted to:

Tahmid Taki Rahman

Lecturer

Department of Computer Science & Engineering
University of Asia Pacific

Project 1:

Rare Tree Locator: A mobile application

Problem Statement:

In urban areas like Dhaka, rapid urbanization has led to a significant decline in biodiversity awareness. People often encounter unfamiliar or rare trees but have no reliable way to identify them or learn more. The core issues include:

- Lack of identification tools specific to Dhaka's local or rare tree species.
- Existing apps are too generic, providing global data but missing localized insight.
- No easy access to tree information, such as name, origin, ecological value, or owner.
- Difficulty in distinguishing rare or non-native trees in a city filled with common urban plants.
- No collaborative or crowdsourced system to log or share unique tree discoveries.
- Limited public engagement in urban ecological tracking or education about native and rare biodiversity.

As a result, valuable opportunities to raise awareness, preserve local biodiversity, and promote citizen science are being lost.

Proposed Solution:

To address this gap, we propose building a web or mobile application that enables users to identify and track rare or unique trees in Dhaka. The system will have three types of users:

1. **Normal Viewers** – Can browse a map or list of rare trees, view detailed information (species, origin, uniqueness, owner if public, and location).
2. **Contributors (Verified Users)** – Can submit new tree sightings with photo, description, and geolocation.
3. **Admin** – Can approve or reject submissions, verify information, and manage users and content.

Existing Similar System:

- **PlantNet** – A global plant identification app that uses photo recognition to suggest plant names. However, it lacks localized context or rarity filters for specific cities like Dhaka. (https://plantnet.org/en/)
- **iNaturalist** – A citizen science platform where users can upload flora/fauna observations. It provides a broad global community and database but lacks specific functionality for discovering rare trees in a local area. (https://www.inaturalist.org/)
- **Flora of Bangladesh** – A static, text-based botanical resource maintained by institutions, not designed for field discovery or interactive use. (https://www.floraofbangladesh.com/)

Project 2:

Emergency Resource Allocation System: A web application

Problem Statement:

During floods, cyclones, and other disasters, relief supplies are often mismanaged due to a lack of coordination. Officers cannot request or track supply movement in real time, causing delays and wastage.

1. No centralized system for tracking emergency supplies.
2. Feel teams cannot equally request or monitor supply delivery.
3. Supplies run out or are overstocked without timely alerts.

Proposed Solution:

1. Prioritized supply dispatch based on region and urgency.
2. Alert system for lowest stock or expired item
3. Dashboard for analytics and demand forecasting.
4. User access control to prevent data manipulation.

User Type:

1. **Admin:** Manages users, monitors performances.
2. **Field officer:** Request or log distributed supplies, track status submit reports.
3. **Warehouse step or NGOs:** Update inventory, dispatch supplies

Existing Similar System:

1. LogIE(UNHCR): Advanced but requires large infrastructure; not usable by local NGOs. (https://logcluster.org/en)

2. ReliefWeb/HDX: Provides data but not real-time coordination or supply tracking. (https://reliefweb.int/)
3. Sahana Disaster Management System: Powerful but complex; not localized for small teams. (https://sahanafoundation.org/)

Project 3:

PoribeshPalki: Waste Management & Recycling Tracker: A web application

Problem Statement:

- Irregular and delayed waste collection in urban areas.
- Low public awareness and practice of recycling.
- No proper channel for citizens to report waste issues.
- Inefficient planning due to absence of real-time waste data.
- Environmental pollution and health risks from unmanaged waste.
- Absence of a Digital Tracking System.
- City authorities face problems managing and monitoring waste collection properly.

Proposed Solution:

- App for waste reporting with photo and location.
- Pickup alerts sent to citizens.
- Recycling guide to help sort waste.
- Eco points system to reward recycling.
- Task dashboard for waste collectors.
- Data analytics for better planning.
- Real-time monitoring by city officials.

User Type:

- **Citizen:** Report waste, get pickup alerts, sort recyclables, earn eco points.
- **Waste Collector:** View tasks, update pickup status, handle large waste, track recyclables.
- **City Admin:** Monitor reports, manage staff, issue fines, analyze data for planning.

Existing Similar System:

- Recyclebank (USA) (https://recyclebank.com/)
- WasteConcern (Bangladesh) (https://wasteconcern.org/)
- Swachhata App (India) (https://sbmurban.org/)

Project 4:

ManageHoise?: An event management website

Problem Statement:

Event planning in regions like Bangladesh often relies on manual methods, making the process time-consuming, inefficient, and stressful for both organizers and service providers. There is a lack of centralized digital platforms that can simplify and manage the entire event lifecycle, from booking vendors to organizing tasks like scheduling, budgeting, and checklists.

Proposed Solution:

The proposed solution is "ManageHoise?", a Django-based web application designed to serve as an event planning and management platform. It simplifies the event organization process by offering a two-user system:

User Types:

1. **Customer (Event Organizer):**

   - Can register and create a profile.
   - Browse products/services.
   - Add items to cart and place orders.
   - Plan events using future features like checklist, budget tracker, and scheduler.

2. **Vendor (Service/Product Provider):**

   - Can register and list products/services.
   - Edit or delete their listings.
   - View customer interactions with their offerings.

3. **Admin (System Manager):**

   - Manages both vendors and customers via Django's admin panel.
   - Handles backend data and user control.

Existing Similar System:

1. Eventexpert (https://eventmanagementexpert.com.bd/)
2. Weddingbazaar (https://www.weddingbazaar.com/)
3. Eventbrite (https://www.eventbrite.com/)