SustainWear: A Smart Clothes Donation and Sustainability Platform

Project Overview:

SustainWear is a proposed responsive web-based system aimed at promoting sustainability through structured clothes donation. The platform will connect individuals, charities, and organisations to streamline the process of donating, categorising, and redistributing clothing. The platform may utilise AI service to categorise clothes automatically based on type, condition, or seasonality. The system will feature tailored dashboards for different user roles, including donors, charity staff, and system administrators, allowing each role to track donations, manage inventories, and monitor sustainability goals.

Students are expected to design, develop, and evaluate the system using appropriate software engineering processes. Space is intentionally left for innovation, enabling groups and individuals to add features, workflows, or technical solutions that extend beyond the core description.

Problem Statement:

Clothes waste is a growing environmental issue, with large volumes of wearable items ending up in landfills. While many people wish to donate clothes, the process is often fragmented, inconvenient, or lacks transparency. Charities and donation centres face challenges in categorising, sorting, and efficiently redistributing clothing to those in need. Without intelligent systems, these operations are inefficient, leading to underutilisation of donations and reduced sustainability impact.

Project Objectives

- **Facilitate donations** by providing an easy-to-use online platform for individuals to log and track their clothing donations.
- **Support charities and organisations** through dashboards that enable management of donated clothing, including stock levels, categories, and distribution.
- **Provide role-based dashboards** to deliver relevant insights to donors, charity staff, and administrators (e.g., donation history, inventory analytics, sustainability metrics).
- **Promote sustainability awareness** by including metrics such as estimated landfill reduction, CO_2 savings, or number of beneficiaries supported.

Initial Scope

The SustainWear platform will be developed as a **responsive web application** accessible via desktop and mobile devices. Its scope includes the following key elements:

1. User Roles and Access

- **Donors**: Register, log in, and record clothing donations (with descriptions, photos, and categories).
- **Charity Staff**: Manage incoming donations, update inventory status, approve/decline donations, and allocate items for distribution.
- **Administrators**: Oversee the system, manage user accounts, generate analytics.

2. Core Requirements:

1. **Donation Management**: Donors can submit details of clothing items (with optional photos).
2. **AI Categorisation (optional)**: Integration with a clothing classifier to automatically categorise clothes by type, size, gender, or condition.
3. **Inventory Management**: Charities can view, edit, and track donated stock (availability, categories, and quantity).
4. **Role-Based Dashboards**:
    a. **Donors**: View donation history, sustainability impact (e.g., CO_2 saved).
    b. **Charity Staff**: Monitor incoming donations, stock levels, and distribution records.
    c. **Administrators**: Access system-wide data, generate reports, and monitor platform usage.
5. **Analytics & Reporting**: Track sustainability metrics, generate donation trends, and monitor distribution performance.
6. **System Qualities**
    a. **Responsiveness**: Optimised for mobile and desktop use.
    b. **Security**: Role-based authentication.
    c. **Data privacy:** (GDPR compliance).
    d. **Usability**: Clear navigation and inclusive design for diverse users.

3. Out of Scope (for initial implementation)

- Full-scale logistics or delivery tracking of donated items.
- Integration with external e-commerce or retail systems (can be explored as an innovation).
- Mobile-native apps (focus is on a responsive web app).

Important Note:

This initial defined scope is intentionally broad to provide you with space for innovation and creativity in how you approach the solution. However, in line with the Scrum framework, remember that scope is variable, while time, cost, and quality remain fixed. This means your team will need to manage the product backlog dynamically, refining and adapting it as the project evolves.

At the start of each sprint, select the highest-priority backlog items that are achievable within the sprint and will add the greatest value to your system. The focus should not be on the number of features implemented but on the quality of your work, the professionalism of your deliverables, and the rigorous application of software engineering processes. Demonstrating how you apply good practice in planning, design, testing, and reflection will be valued more than trying to build every possible functionality.