Project Number: 30

Project Title: SDG Knowledge System: Web & Mobile Development Project

Project Clients: Associate Professor Veronica Zixi Jiang, School of Marketing, UNSW Business School. Chengbin Feng, Alumnus of UNSW Computer Science undergraduate, Academic Tutor in Information System.

Project specializations: Software Development;Web Application Development;Mobile Application Development;Big data Analytics and Visualization;Human Computer Interaction (HCI);

Number of groups: 3 groups

Main contact: Associate Professor Veronica Zixi Jiang, School of Marketing, UNSW Business School. Chengbin Feng, Alumnus of UNSW Computer Science undergraduate, Academic Tutor in Information System.

Background:

We developed the SDG Knowledge System (https: //sdg.unswzoo.com/) to provide comprehensive and relevant information on the United Nations' 17 Sustainable Development Goals (SDGs).

The SDG Knowledge System currently includes:

- SDG Education Database: With over 3,000 entries, this extensive collection offers in-depth insights into SDG-related education.
- SDG Action Database: Featuring 1,500+ curated items, this database highlights actionable SDG plans and real-world examples, supporting the effective implementation of sustainable practices.
- SDG Keyword Search: Users can search specific words or phrases to determine their relevance to the 17 SDGs and 169 targets.
- SDG Expert Chatbot: Designed to assist users in quickly finding relevant SDG information and brainstorming impactful SDG action plans.

This system empowers individuals, educators, and organizations to engage meaningfully with the SDGs, fostering informed decision-making and real-world action.

Requirements and Scope:

It is ok that a student group can only complete two or three of the project tasks.

Task 1 (most important): Implement a User Management System – Develop a secure and efficient user management system to enable personalized experiences and data tracking.

Task 2 (most important): Enable SDG Action Plan Creation – Allow logged-in users to create SDG action plans using an "Impact Design Analysis" form, providing a structured approach to planning and assessing sustainable initiatives.

Task 3: Develop a Mobile App – Create an accessible and user-friendly mobile application to enhance the reach and usability of the SDG Knowledge System.

Task 4: Enhance Website Accessibility & Design – Improve the website's accessibility, aesthetics, and user experience to ensure seamless navigation and engagement.

Required Knowledge and skills:

1. Implement a User Management System

- User Registration & Authentication

o Users can register via email, mobile number, Google, Apple, or Facebook accounts.

o Implement robust password policies for security.

- Profile & Group Management

o Users can manage their profiles, including name, contact information, job title, and department.

o Implement grouping functionalities, allowing teams to collaborate on SDG action plans.

- Data Privacy & Compliance

o Ensure adherence to relevant data protection regulations (e.g., GDPR, CCPA).

o Implement secure data storage and encryption to protect user information.

- Activity & Search History Tracking

o Save user activities, browser histories, search histories, and form inputs to enhance personalized experiences and analytics.

2. SDG Action Plan Creation & Management

- Impact Design Analysis Form

o Logged-in users can create, save, and edit SDG action plans using a structured form.

- Draft & Revisit

o Users can leave the form and return later to edit their responses.

- Slide Generation & Downloads

- Users can generate slides of their SDG action plans using predefined templates.
- The generated slides can be downloaded for presentations or reports.

3. Develop an Accessible Mobile App

- Create a mobile application that mirrors the website's functionality while ensuring seamless access and usability on smartphones and tablets.
- Ensure performance optimization and responsiveness across different devices and operating systems.

4. Enhance Mobile app and Website Accessibility & User Experience

- Improve accessibility by implementing:
  - Good color contrast for readability.
  - Adjustable text sizes to accommodate different visual needs.
  - Clear and intuitive navigation to enhance usability.
  - Support for assistive technologies (e.g., screen readers).
  - Appropriate tap target sizes for better mobile interactions.
  - Consistent layouts for an intuitive experience.
  - Alternative input methods for users with disabilities.
  - Compliance with WCAG (Web Content Accessibility Guidelines) to ensure full accessibility.

This project will create a robust, accessible, and user-friendly SDG Knowledge System that enhances engagement, collaboration, and action toward achieving the United Nations' 17 Sustainable Development Goals.

Expected outcomes/deliverables:

Source Code: All the front-end and back-end code developed for the website, ensuring it is well-organized, reusable, and efficient. This will include HTML, CSS, JavaScript, and any server-side programming languages or frameworks used.

Documentation: Comprehensive documentation outlining the structure of the website, key features, and functionalities. This will also include a breakdown of the website's development process, detailing the tools, technologies, and methodologies used. Code documentation will also be provided for easy future updates or modifications.

User Guide: A clear, concise guide that explains how to navigate and use the website's key features. This will be aimed at users looking to understand the SDG content, interact with tools, or contribute information. It will also include troubleshooting tips and frequently asked questions.

Final Report: A summary of the project, outlining its objectives, development process, challenges faced, and how the final product contributes to advancing SDGs through user engagement.

Testing Results: Reports on website performance, usability testing, and feedback gathered from users to ensure the site meets accessibility and functionality standards.