AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

FACULTY OF SCIENCE AND TECHNOLOGY

Assignment Title:	Project Proposal on FoodSavvy: A Digital Solution for Efficient Food Waste Management		
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Semester:	Spring 2023-24	Course Teacher:	Tonny Shekha Kar

* *Student(s) must complete all details except the faculty use part.*
** Please submit all assignments to your course teacher or the office of the concerned teacher.

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FoodSavvy: A Digital Solution for Efficient Food Waste Management

Abstract: FoodSavvy is a proposed digital platform aimed at addressing the global challenge of food waste through streamlined management and redistribution of surplus food. The platform integrates stakeholders across the food supply chain to minimize waste generation, promote sustainable consumption practices, and alleviate food insecurity. This project proposal outlines the background, problem statement, proposed solution, objectives, basic functionalities, and target users of FoodSavvy.

Introduction: Food waste is a pressing issue with significant environmental, social, and economic implications. Despite efforts to reduce waste, a substantial amount of food continues to be discarded at various stages of the supply chain. FoodSavvy seeks to tackle this problem by leveraging technology to optimize food management processes and facilitate the redistribution of surplus food to those in need.

Literature Review: Numerous studies have highlighted the magnitude of the food waste problem and its adverse effects on the environment, economy, and society. Research has also identified various factors contributing to food waste, including inefficiencies in the supply chain, consumer behavior, and lack of infrastructure for food recovery and redistribution. Digital platforms and data-driven solutions have emerged as promising approaches to address these challenges by improving inventory management, facilitating surplus redistribution, and empowering consumers to make more informed choices.[2]

Background Description: A drastic increase can be seen in food waste. As per data given by Food and Agriculture Organization (http://www.fao.org/food-loss-and-food-waste/flw-data), 1/3rd of food produced for human consumption is wasted globally, which accounts for almost 1.3 billion tons per year. On the other hand, also as per WHO 20% of the population face extreme food shortages. Hence there is a need to come up with a solution that can avoid food waste & can help feed the needy.

The Food Waste Management project aims to develop a software application that addresses the critical issue of food waste. Food waste is a significant problem affecting individuals, communities, and the environment. It occurs at various stages, including production, distribution, and consumption. This project aims to tackle this issue by developing an innovative software solution that enables efficient management of food resources, reduces waste, and promotes sustainable practices.

By leveraging technology, this software application will provide individuals and organizations with tools and resources to track, manage, and minimize food waste. It will offer features such as inventory management, meal planning, recipe suggestions, and donation coordination. The application will empower users to make informed decisions about their food consumption, reducing both the environmental impact and financial burden associated with food waste.

The project's expected outcomes include a significant reduction in food waste, improved resource utilization, increased awareness about sustainable practices, and a positive environmental impact. By addressing this issue comprehensively, the software application will contribute to a more sustainable and responsible approach to food management.[1]

Problem Description: The inefficient management of food resources results in significant quantities of edible food being wasted each year, contributing to environmental degradation, economic losses, and food insecurity. Existing approaches to food waste management often lack coordination and transparency, leading to missed opportunities for surplus redistribution and resource optimization. There is a pressing need for a comprehensive solution that addresses the root causes of food waste and facilitates collaboration among stakeholders to maximize the value of food resources.

Proposed Solution to the Problem: FoodSavvy proposes the development of a digital platform that integrates various stakeholders across the food supply chain. The platform will feature functionalities such as inventory management, surplus redistribution, consumer engagement, and data analytics to optimize food management processes and minimize waste generation. By providing stakeholders with the tools and resources to effectively manage and redistribute surplus food, FoodSavvy aims to reduce food waste, alleviate food insecurity, and promote sustainability.[2]

Objective: The objective of FoodSavvy is to develop a comprehensive digital solution for efficient food waste management. By optimizing food management processes, facilitating surplus redistribution, and empowering stakeholders to make more sustainable choices, FoodSavvy aims to minimize waste generation, promote food security, and foster a culture of sustainability.

Basic Functionality:

i) User Registration and Login: Users can create an account and securely log in to the application, allowing them to access personalized features and information.

ii) Inventory Management: Users can input and track their food items, including details like quantity, expiration dates, and storage location.

iii) Personalized Notifications: The application will send personalized notifications and reminders based on user preferences and behavior. Users will also receive messages about approaching expiration dates to prevent food wastage.

iv) Shopping List: The application will generate a shopping list helping users make efficient grocery purchases.

v) Analytics and Insights: Users will have access to data analytics and visualizations that highlight their food consumption habits and suggest waste reduction strategies.

vi) Donation and Sharing: The application will facilitate food donation and sharing among users to minimize waste.

vii) Online Donation-based Transactions (Optional): The donation feature will be integrated with a trusted payment gateway, ensuring a smooth and transparent transaction process through the application for the users.

viii) User Feedback and Ratings: Users can provide feedback on recipes, share their experiences, and rate the effectiveness of waste reduction strategies. This feedback will help improve the application and create a sense of community among users.

ix) Integration with External Systems: The application will integrate with smart kitchen appliances or grocery delivery services to streamline the user experience and enhance efficiency.

Target Users:

1. **Food Producers:** Including farmers, growers, and manufacturers who produce food products. They can use FoodSavvy to track production, manage inventory, and identify opportunities to reduce waste at the source.
2. **Distributors and Suppliers:** Entities involved in transporting and supplying food products to retailers and other businesses. They can benefit from FoodSavvy by optimizing delivery routes, managing inventory levels, and facilitating surplus redistribution.
3. **Retailers and Foodservice Establishments:** Such as grocery stores, restaurants, and cafeterias, where food is sold or served to consumers. These users can utilize FoodSavvy to manage inventory, reduce overstocking, and facilitate the donation or sale of surplus food.
4. **Charitable Organizations:** Including food banks, shelters, and community organizations that distribute food to those in need. They can leverage FoodSavvy to access surplus food from businesses and efficiently redistribute it to vulnerable populations.
5. **Consumers:** Individuals and households who purchase and consume food products. FoodSavvy provides consumers with tools and information to minimize food waste at home, make informed purchasing decisions, and participate in food donation initiatives.

Conclusion: FoodSavvy offers a promising solution to the complex problem of food waste by leveraging technology to improve efficiency, transparency, and collaboration across the food supply chain. By empowering stakeholders with tools and resources to minimize waste generation and maximize the utilization of food resources FoodSavvy aims to create a more sustainable and resilient food system for future generations.

References:

1. Food and Agriculture Organization (FAO) of the United Nations. (2019). The State of Food and Agriculture 2019: Moving forward on food loss and waste reduction.
2. Technological Solutions for Sustainable Management of Food Waste: A Review by David N. Njoku et al. (2020)