Green Urban

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Abstract: *Green Urban is a sustainable waste management system offering a shopping section where users can buy daily items focused on pollution prevention and plastic alternatives. Users can sell scrap metal and other recyclable products for a fair price or receive purchase discounts, and they can pre-order pickup dates. Sewage and kitchen waste collection are offered as part of a fully automated subscription plan. To encourage purchases and usage, users earn reward points. The system includes a delivery agent module and a delivery boy module to facilitate the transportation of goods to warehouses and scrapyards, ensuring efficient waste management and recycling processes.*

Keywords: Sustainability, Eco friendly, E-commerce, Scrap management

I. INTRODUCTION

The modern era is plagued by the rampant use of single-use plastics, a pressing environmental issue that has become increasingly problematic due to consumer behaviour. Despite growing awareness, the accumulation of single-use plastic waste continues to rise, presenting significant challenges for both the environment and public health. This persistent problem is exacerbated by the market's reliance on single-use plastic packaging, leaving consumers with limited alternatives. In recent years, the amount of single-use plastic waste has reached alarming levels. These plastics, used for a brief period but taking centuries to decompose, are now ubiquitous in our environment. Oceans, rivers, and even remote areas are polluted with plastic debris, threatening wildlife and ecosystems. The market's saturation with single-use plastic packaging means consumers often has no viable alternatives. Despite a growing consciousness about environmental impacts, the lack of accessible and affordable sustainable options hinders meaningful change in consumer behaviour. This dependence on plastic is a significant barrier to reducing waste and achieving sustainability goals. While technology advances at an unprecedented pace, the adoption of sustainable practices has not kept up. Research in the field of sustainable materials and packaging is progressing rapidly, yet public awareness and implementation lag.

II. LITERATURE SURVEY

The increasing environmental impact of waste, particularly plastic waste, has prompted the development of innovative waste management systems. Green Urban exemplifies a modern approach by integrating shopping and recycling functionalities within a sustainable waste management framework. This literature review explores existing research and practices related to sustainable waste management systems, focusing on shopping integrations, recycling incentives, automated waste collection, and logistical support. According to Tchobanoglous et al. (1993), effective waste management systems must integrate strategies for reducing waste generation, improving recycling rates, and ensuring proper disposal (Tchobanoglous, G., Theisen, H., & Vigil, S., Integrated Solid Waste Management: Engineering Principles and Management Issues). The integration of shopping with waste management is a novel approach aimed at promoting sustainable consumption. Studies by Geissdoerfer et al. (2017) suggest that incorporating sustainable product options in retail can drive consumer behavior towards environmentally friendly choices (Geissdoerfer, M., Savaget, P., Bocken, N. M. P., &Hultink, E. J) Green Urban's model aligns with these findings by offering products that prevent pollution and provide alternatives to plastic. Incentive-based recycling programs have been shown to improve participation and effectiveness. Research by O'Keefe et al. (2011) highlights that reward systems and financial incentives encourage higher rates of recycling and waste separation (O'Keefe, C., Watson, M., & Hudson, C., The Impact of Incentives on Recycling Behavior: A Study of the Effectiveness of Various Incentive Structures). Green Urban's reward points system is designed to encourage continued use and participation, reflecting these principles.

III. WORKING OF PROPOSED SYSTEM

The proposed system introduces Green Urban, an e-commerce platform designed to revolutionize waste management and promote sustainable practices. This platform not only offers biodegradable alternatives to single-use plastics but also incentivizes consumers to participate in recycling by providing a marketplace for household scraps. By integrating sustainable products and waste management into a single platform, Green Urban aims to foster a culture of environmental responsibility. The proposed sustainable e-commerce platform offers a comprehensive marketplace dedicated to biodegradable products, ensuring that all goods sold prioritize environmental sustainability. It features a scrap marketplace that allows consumers to sell household scraps, turning waste into profit and promoting recycling. The platform includes a reward system where consumers earn wallet coins for each sale of household scraps, incentivizing continuous participation in sustainable practices. Additionally, there is a dedicated section for educating consumers about the importance of sustainability and the impact of their purchasing decisions.This system has several advantages. It enhances accessibility by providing an integrated platform that ensures consumers everywhere have access to sustainable products and waste management solutions, overcoming geographical barriers. The reward system offers real-time incentives, providing immediate financial rewards for consumers to recycle and engage in sustainable practices. By promoting biodegradable products and recycling, the platform helps reduce waste accumulation in landfills. Educational resources on the platform increase awareness about the environmental impact of single-use plastics and the benefits of sustainable alternatives. By integrating sustainable products and waste management, the platform offers a comprehensive approach that encourages consumers to adopt a more environmentally responsible lifestyle.

IV. TECHNOLOGY USED

Django

Django is a web application framework written in the Python programming language. Django is highly sought after due to its rapid development feature, allowing applications to be built quickly after collecting client requirements. With Django, web applications can be developed in a very short time. The framework is designed to handle much of the configuration automatically, allowing developers to focus solely on application development. Django was designed and developed by the Lawrence Journal-World in 2003 and was publicly released under the BSD license in July 2005. Django's initial release was on July 21, 2005, and its current stable version is 2.0.3, which was released on March 6, 2018.Django has several key features. Although the project implementation phase can be time-consuming, Django accelerates this process. Django prioritizes security, helping developers avoid common security issues such as SQL injection, cross-site scripting, and cross-site request forgery. Django is scalable, allowing for quick and flexible transitions from small to large-scale application projects. It is fully loaded with various modules and libraries to handle common web development tasks, such as user authentication, content administration, site maps, and RSS feeds. Django's versatility allows it to build applications across different domains. Companies use Django to develop various applications, including content management systems, social networking sites, and scientific computing platforms. As an open-source web application framework, Django is publicly available at no cost and can be downloaded with its source code from the public repository. The open-source nature of Django reduces the total cost of application development. The Template acts as a presentation layer, managing the user interface. The View executes business logic, interacts with the Model to carry data, and renders a Template. While Django follows the MVC pattern, it maintains its own conventions, with the framework itself handling control. There is no separate controller, and the entire application is based on Model, View, and Template, which is why it is called an MVT application.

SQLite

SQLite is a very popular database management system due to its lightweight nature. It requires no administration to operate, making it simple to use. However, it is best suited for handling low to medium traffic HTTP requests, as the database size is usually limited to 2GB. Despite these limitations, the advantages of SQLite have gained significant attention from users. SQLite offers several advantages that make it a popular choice for database management. As a lightweight database management system, SQLite is easy to use as embedded software in various electronic devices.

One of its key advantages is better performance. SQLite is very flexible and supports fast reading and writing operations. It only loads the required data instead of the entire file and overwrites only the edited parts of a file, not the whole file. This approach facilitates efficient data storage, with variable column lengths allowing only the necessary space to be allocated for each field. Another benefit of SQLite is that it requires no installation or configuration, making it easy to learn and use right away. In terms of reliability, SQLite continuously updates its contents and is less prone to bugs compared to custom-written I/O code files. It also uses smaller queries than equivalent procedural codes, contributing to its reliability. SQLite is highly portable, supporting all 32-bit and 64-bit operating systems and both big- and little-endian architectures. It allows for work on multiple databases in the same session simultaneously and functions as a cross-platform DBMS. SQLite has no compatibility issues with any programming languages. It also provides an API for a wide range of programming languages, enhancing its versatility.

Bootstrap

Bootstrap is a freely available framework that offers numerous advantages for web development. One of its main features is its simplicity and ease of use, as it allows anyone with basic knowledge of HTML and CSS to start using it. Bootstrap provides a vast array of JavaScript plugins and makes it easy to design mobile-friendly websites.Bootstrap's responsive features ensure that its CSS adjusts seamlessly to phones, tablets, and desktops, making it inherently mobile-friendly. In Bootstrap 3, the mobile-first approach is a core part of the framework, ensuring that websites are optimized for mobile devices from the start.Bootstrap comes with pre-styled components, such as alerts, dropdowns, and navigation bars, which can be customized to fit the designs of any project. It is compatible with all modern browsers, including Chrome, Firefox, Internet Explorer, Safari, and Opera, ensuring broad accessibility.One of Bootstrap's standout features is its excellent grid system. It is built on responsive 12-column grids, layouts, and components, allowing developers to create either fixed or responsive grids with minimal changes. This flexibility makes Bootstrap a powerful tool for designing responsive websites.

HTML

HTML Stands for HyperText Markup Language. It is used to design web pages using a markup language and is a combination of Hypertext and Markup language. Hypertext defines the link between web pages, while a markup language is used to define the text document within tags, which in turn define the structure of web pages. This language is used to annotate text so that a machine can understand it and manipulate the text accordingly. Most markup languages, such as HTML, are human-readable. It is used by browsers to manipulate text, images, and other content to display them in the required format. HTML uses predefined elements and tags to instruct the browser on how to properly display content. It is important to include closing tags; if they are omitted, the browser will apply the effect of the opening tag until the end of the page.The basic structure of an HTML page contains essential building blocks, such as the doctype declaration, HTML, head, title, and body elements, which are the foundation for all web pages.

V. DATABASE DESIGN

The most crucial element in developing software systems is database design. At the top of the hierarchy is the database itself, which consists of interconnected files designed for real-time processing. This database holds essential data for solving problems and supports concurrent access by multiple users. The primary goal of database design is to ensure that data access is straightforward, cost-effective, and adaptable to user needs.Database design involves outlining and specifying the structure of business information used in client/server systems. Business objects are pieces of information visible to system users, and the database must be properly normalized to ensure efficiency.A Database Management System (DBMS) is used to safeguard and organize data separately from other resources, such as hardware and software. Unlike other data management packages, a DBMS provides components that separate the data as perceived by programs from the data stored on physical storage devices, distinguishing between logical and physical data.

Registered user

Field Name	Data Type	Size	Constraint	Description
id	varchar	20	Primary key	table id
name	varchar	20	NOT NULL	Name
Age	int	4	NOT NULL	Age
Phone	int	20	NOT NULL	Contact number
Username	varchar	20	NOT NULL	Username
Email	varchar	20	NOT NULL	Email
Password	varchar	20	NOT NULL	Password
Address	varchar	20	NOT NULL	Address

Retailer

Field Name	Data Type	Size	Constraint	Description
id	int	4	Primary Key	Doctor table id
User	varchar	20	NOT NULL	Doctor name
Company_name	varchar	20	NOT NULL	Gender
Phone_number	varchar	30	NOT NULL	Doctor Specialization
address	varchar	50	NOT NULL	Doctor Experience
Registration date	varchar	10	NOT NULL	Doctor Contact number
Email	varchar	20	NOT NULL	Email
Password	varchar	20	NOT NULL	Password

Product

Field Name	Data Type	Size	Constraint	Description
id	int	4	Primary Key	table Id
name	varchar	20	NOT NULL	Product name
description	varchar	20	NOT NULL	Product discription
price	float	20	NOT NULL	Product price
category	int	20	Foreign Key	Product category
rating	float	20	NOT NULL	Product rating
available	boolean	--	NOT NULL	Product avilablity
created	date	6	NOT NULL	Product Created date
approve	boolean	2	NOT NULL	Product approval

Scrap

| Field Name	Data Type	Size	Constraint	Description
user	varchar	20	Foreign Key	Name given in the payment card
category	int	20	NOT NULL	Card number of the payment card
description	Int	3	NOT NULL	Card Verification Value
Img1	date	10	NOT NULL	Expiry date of the payment card
Img2	varchar	20	NOT NULL	Booking table id
Img3	date	10	NOT NULL	Current date of payment
location	char	200	NOT NULL	Current location

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VI. IMPLEMENTATION

Implementation is an activity that occurs throughout the development phase of a project. It involves bringing a developed system into operational use and turning it over to the user. The new system and its components must be tested in a structured and planned manner. A successful system should be delivered so that users have confidence in its efficiency and effectiveness. The more complex the system being implemented, the greater the effort required for system analysis and design during implementation. Once user acceptance of the developed system is achieved, the implementation phase begins. This stage involves turning theory into practice. During the implementation phase, all the programs of the system are loaded onto the user's computer. After loading the system, user training begins, which includes the following: How to execute the package, How to enter the data, How to process the data, including processing details, How to generate reports. Parallel Run is the approach is helpful because manual results can be compared with the computerized system's results. It demonstrates the success of the computerized system, as it is implemented alongside successfully running manual systems, and the results are verified. If the computerized system fails at an early stage, it does not affect the organization's work, as the manual system continues to function as before. Pilot Run is the approach some parts of the new system are installed and executed successfully for a considerable period. Once satisfactory results are achieved, the other parts are implemented. This strategy builds confidence and allows errors to be traced easily.
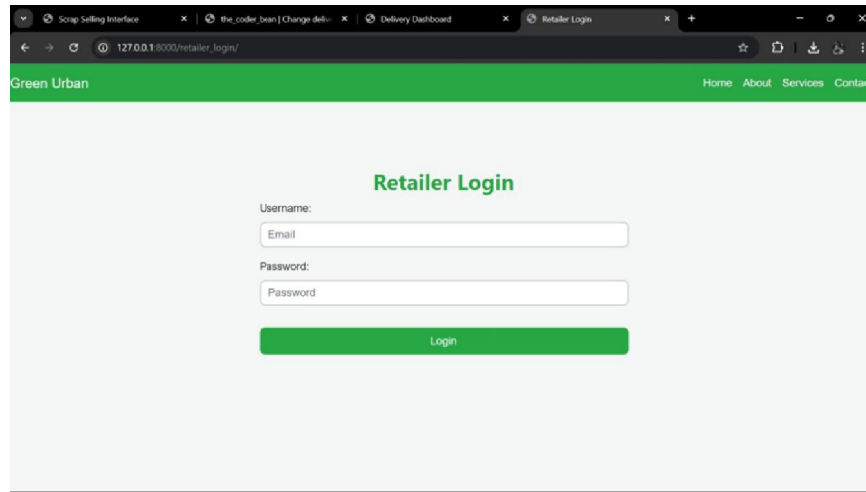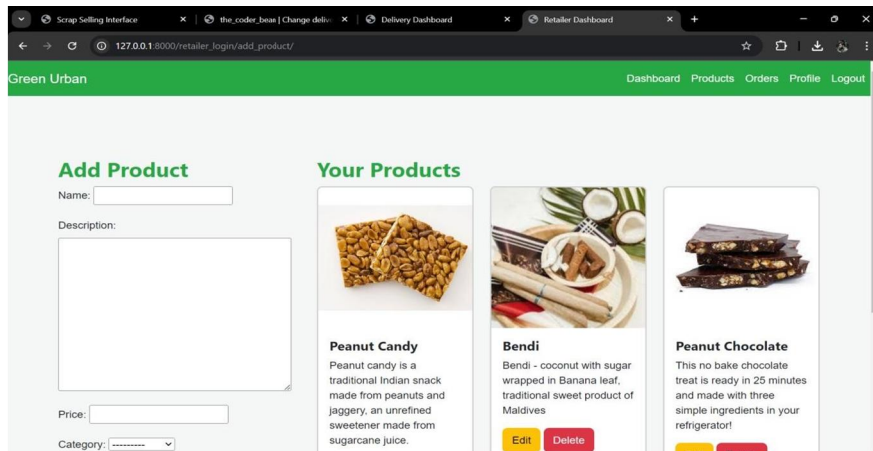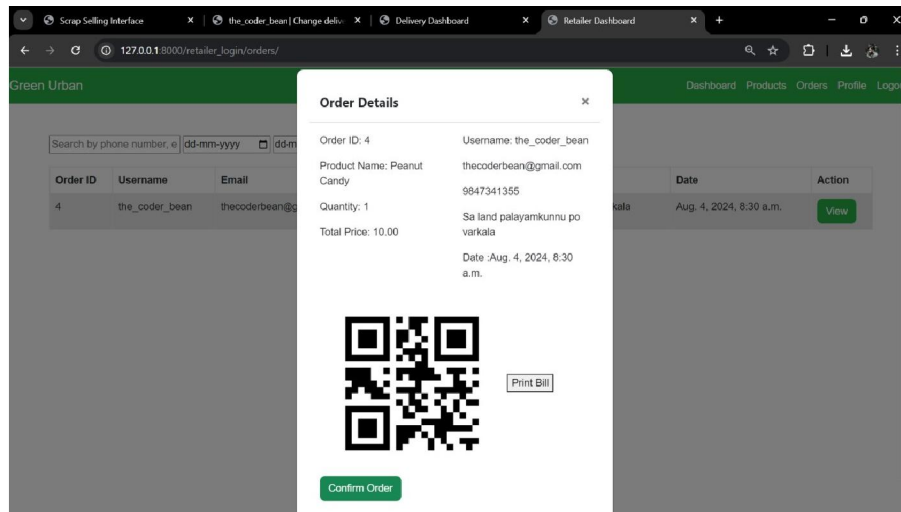
VII. RESULT

Home Page
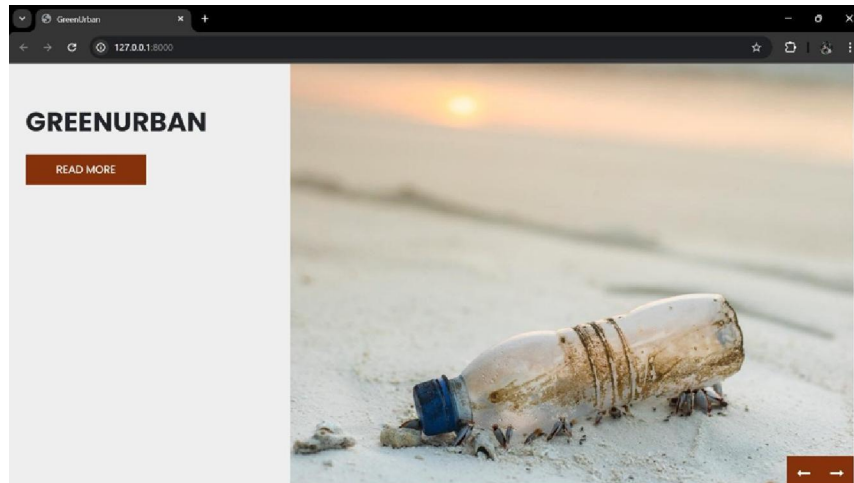
Register User
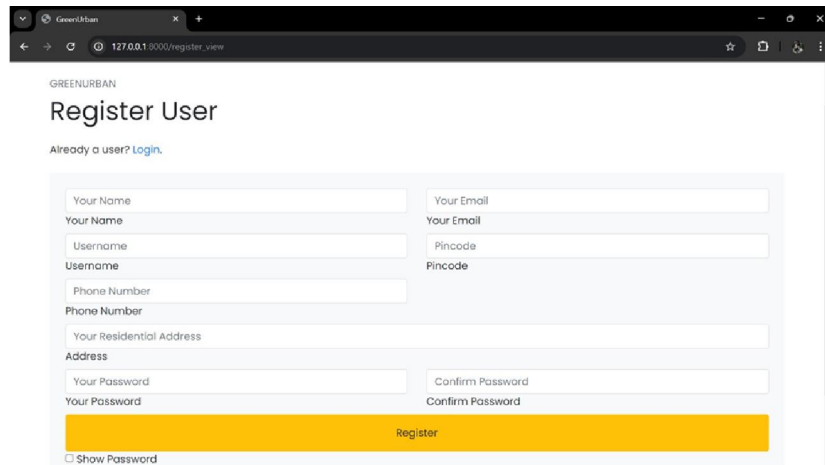
Retailer Login

Add products

Order Details

VIII. CONCLUSION

Single-use plastic waste is a major environmental issue that requires urgent attention and action. The accumulation of plastic waste in oceans and landfills poses a significant threat to ecosystems and human health. To address this challenge, integrating technological innovations with sustainable practices is essential. By leveraging technology, we can develop more efficient recycling processes and create biodegradable alternatives to traditional plastics.Raising public awareness about the detrimental effects of plastic waste is crucial. Educating people on the importance of reducing plastic consumption and properly disposing of waste can drive behavioural change. Public campaigns and educational programs can empower individuals to make informed choices that contribute to a cleaner environment. Collaborative efforts are key to mitigating the impact of plastic waste. Governments, businesses, and communities must work together to implement effective waste management policies and promote sustainable practices. Just as the healthcare industry is evolving through online consulting and predictive diagnostics, the fight against plastic waste requires a transformative approach that harnesses the power of technology and collective action. By fostering innovation, increasing awareness, and encouraging collaboration, we can significantly reduce plastic waste and pave the way towards a more sustainable future. Addressing this issue demands a united effort to protect our planet and ensure a healthier environment for future generations.

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