Proceedings of the 3rd International Conference on Applied Artificial Intelligence and Computing (ICAAIC-2024)
IEEE Xplore Part Number: CFP24BC3-ART; ISBN: 979-8-3503-7519-0

A Food Wastage Reduction App based on Django Python Application

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2024 3rd International Conference on Applied Artificial Intelligence and Computing (ICAAIC) | 979-8-3503-7519-0/24/$31.00 ©2024 IEEE | DOI: 10.1109/ICAAIC60222.2024.10575000

***Abstract*—In human community, the significant challenge of food wastage stands out prominently. Skillfully handling food waste is essential as it has the power to bolster our sustainability in terms of both finances and the environment. We have determined that using web technology can help reduce food waste management. As part of our suggested approach, we have developed a Django Python app that lets users share and give leftover food to people in need. This Django project provides users with the ability to create accounts, log in, browse available items, add items to their cart, remove items from the cart, and log out. It relies on MySQL storage and utilizes a real-time database for smooth operation.**

Keywords*—DJango, My Structured Query Language, Hyper-text Markup Language, Cascading Style Sheets, X-operating system.

I. INTRODUCTION

Applications for mobile phones have become widely used in recent years [1, 2]. It is well known that the web is the most widely utilized mobile platform; millions of mobile devices are currently using the web in over 190 countries worldwide. Reducing food wastage is imperative due to its significant environmental, economic, and social impacts. The web is the most widely used mobile platform, and its user base is growing quickly since almost a million people buy new Web devices every day and utilize them right away to access digital content including games, applications, and a variety of other services [3]. As a result, we used Web Studio to create the "FoodReduction App," a web application that will reach a larger audience because most people use web phones these days. Algorithms for image processing can perform better when noise is estimated.

Recently, massive amounts of food are wasted because many restaurants have a habit of throwing away leftover food at the end of the day, even when it is still perfectly acceptable to eat. Even with all that food being wasted, some families hardly have enough money to buy healthy meals. They don't eat three meals a day, thus they don't get adequate nutrition. Consequently, we made the decision to develop our app to connect the restaurant with the unfortunate individuals. This way, at the end of the day, the unfortunate can pick up the food from the restaurant rather than throwing it away. To manage food waste effectively, focus on prevention through careful meal planning and portion control, donate surplus edible food to local organizations, and compost or use anaerobic digestion for inedible scraps.

II. PROPOSED WORKFLOW

Design is a crucial component of the development stage that goes into making a system, process, or gadget. It entails specifying the specifics required for actualization on a physical level. Three technical activities comprise the software design: design, coding, implementation, and testing. These operations are carried out after the software requirements have been examined and defined. These activities are crucial for the advancement and assessment of the software. At this stage, the design tasks carry significant weight as they necessitate decisions that will directly shape the program's user-friendliness and implementation process. These decisions also affect the dependability and maintainability of the system. Design determines how well a piece of software or a system can translate the needs of the client. In order to promote quality during development, design is essential. It is a procedure that converts specifications into a software representation. The first stage of the software design process is preliminary design, during which requirements are converted into data. The proposed flow diagram is depicted in figure 1.

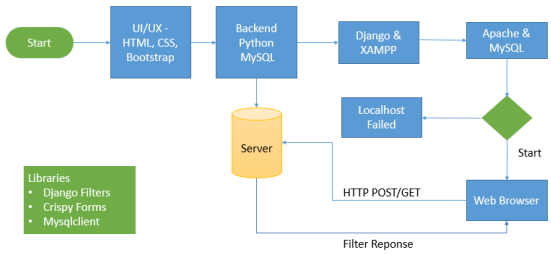

Fig.1 Flow Diagram

A. Overview of the HTML

HTML, also referred to as Hyper Text Markup Language, serves as the standard markup language utilized in the creation of web pages. Together with CSS and JavaScript, HTML plays a pivotal role in constructing web pages and user interfaces for mobile and web applications. Web browsers have the ability to parse HTML files and render them into either visual or audio representations of web pages. As HTML primarily provides presentation cues and semantically defines the structure of a website, it is classified as a markup language rather than a programming language. Eliminating the need for inline formatting can be done by Cascading Style Sheets (CSS),Semantic HTML,CSS Frameworks,Responsive Design,Separation of Concerns,Avoid Inline JavaScript, Template Engines,Code Linters and Validators,Code Reviews

HTML elements form the basic components of an HTML page, serving as the building blocks for its structure. They allow for the embedding of images and diverse objects, as well as the creation of interactive forms. HTML facilitates the organization of content by defining the structural semantics of text elements such as headers, paragraphs, lists, links, quotes, and more. These elements are recognized by tags enclosed in angle brackets, with certain tags like and providing additional context to the document text, often encompassing further tags as sub-elements. To promote semantic HTML, educate developers on its benefits for accessibility, SEO, and code maintainability. Provide documentation and tools to support adoption, integrate semantic guidelines into coding standards, and lead by example in projects.

B. Cascading Style Sheets(CSS)

CSS aims to separate a document's presentation, such as layout and font choices, from its content. This division enhances content accessibility by allowing more flexibility in specifying presentation characteristics. It also reduces complexity in structural content, like tables used solely for formatting before browsers consistently supported CSS rendering. By storing CSS in a separate file, multiple HTML pages can share formatting, ensuring consistency. Presentation instructions can be kept separate from HTML content either in an external file or within the HTML document using CSS. Each HTML element matching a CSS style rule is formatted accordingly, eliminating the need for inline formatting within HTML tags and promoting semantic HTML markup.

C. MYSQL Server

As of July 2013, MySQL stood out as the most widely utilized open-source client-server relational database management system (RDBMS) globally, ranking second among all RDBMS platforms. Its name, MySQL, originates from the daughter of Michael Widenius, one of its co-founders. SQL, an acronym for Structured Query Language, serves as the primary means of interacting with MySQL databases. The regulations governing the MySQL development project, along with the GNU General Public License and certain proprietary agreements, dictate the usage of its source code. Initially backed by MySQL AB, a Swedish for-profit company, MySQL is now part of Oracle Corporation. Premium editions offering additional features are available for exclusive usage.

D. PYTHON

Python is recognized for its potency and accessibility as a computer language. It offers efficient high-level data structures and follows a straightforward yet powerful object-oriented programming approach. With its elegant syntax and dynamic typing, Python is particularly well-suited for scripting and rapid application development across various platforms. The official Python website, https://www.python.org, provides the extensive standard library and interpreter for free in either binary or source form, empowering users to share them as they wish. Moreover, the website hosts a wealth of third-party Python modules, applications, tools, and additional documentation, enriching the Python ecosystem.

Python developers prioritize avoiding overoptimization and do not apply fixes that provide slight speedups at the cost of obscurity in non-essential areas of the CPython reference implementation. When efficiency is crucial, Python programmers can utilize just-in-time compilers like PyPy or transfer crucial operations to extension modules written in languages like C. Another choice is Cython, which uses C-level API calls to communicate directly with the Python interpreter and transforms Python scripts into C.

E. DJango

A web framework called Django, which is built on Python, makes it simple to develop and run web applications. Open source and free to use. Django uses an architecture paradigm called model-template-views, or MTV. The non-profit Django Software Foundation (DSF)

in the US is responsible for maintaining it. Its main objective is to simplify the process of creating complex websites that utilise databases. The framework strives for rapid development, less code, and the idea of not repeating oneself. These goals support flexibility and reusability. The main language used in Django, including for files, settings, and data models, is Python. Django also offers an extra administrative interface that makes data management simple. Django is used by a large number of well-known websites, including Clubhouse, Nextdoor, Bitbucket, Instagram, Mozilla, and Disqus.

III. RESULTS

➢ *Launching page*

Fig.2 Website homepage

➢ *Login page*

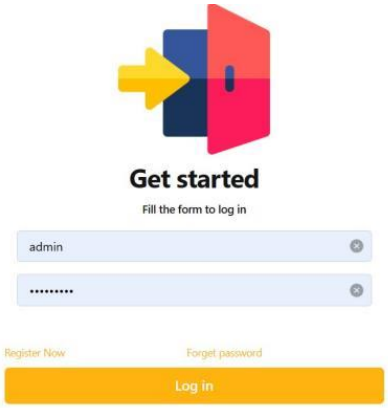

Fig.3 Login Page

➢ *Register page*

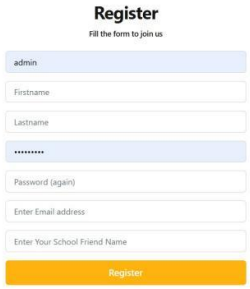

Fig.4 Registration Page

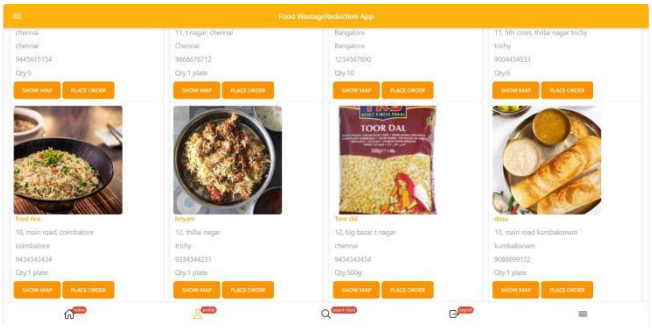

Fig.5 Menu Page

Fig.6 Dashboard

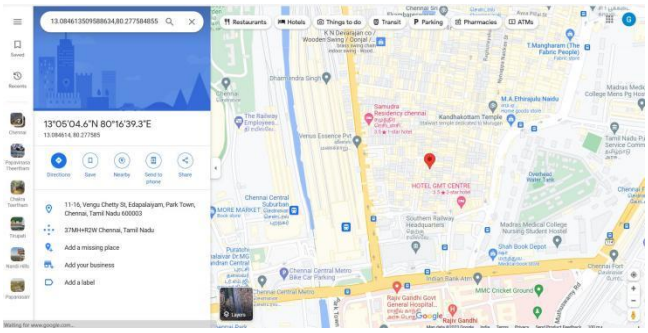

Fig.7 Location Tracking

IV. CONCLUSION

This research focuses on the problem of food waste, which has important social and economic ramifications. On the other hand, we think that political restrictions and technical developments can help to minimize this waste. In particular, food waste management can benefit greatly from the use of mobile application technology. This effort is a first step in creating a better system to cut down on everyday food waste. Achieving flexibility involves modular and scalable architectures, embracing standards and open technologies, fostering collaboration, promoting experimentation and learning, and prioritizing agility in decision-making and strategy refinement.

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