QR Based Guide System for Super Market using BlockChain

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ABSTRACT:

In The QR-based guide system revolutionizes the traditional supermarket experience by providing users with a comprehensive and intuitive platform to navigate through the complexities of grocery shopping. Through the integration of QR code scanning technology, users can easily access real-time product information, including descriptions, pricing, and precise location within the store. This system aims to streamline the shopping process, reduce search time, and enhance overall customer satisfaction. With a user-friendly interface and robust features, the QR-based guide system promises to elevate the supermarket shopping experience to new heights, making it more efficient, convenient, and enjoyable for all users. Moreover, the QR-based guide system offers tangible benefits for both customers and supermarket retailers. For customers, it provides a seamless and personalized shopping experience, allowing them to find products quickly, compare prices, and make informed decisions. On the other hand, for retailers, the system enhances operational efficiency, improves inventory management, and boosts customer engagement and loyalty. By embracing technology and innovation, the QR-based guide system represents a significant step forward in modernizing the supermarket industry and meeting the evolving needs of today's consumers.

INTRODUCTION

In today's fast-paced world, supermarkets play a vital role in our daily lives, providing us with easy access to essential goods and groceries. However, as these supermarkets continue to expand in today's fast-paced world, supermarkets play a vital role in our daily lives, providing us with easy access to essential goods and groceries. Our application harnesses the power of QR code technology to simplify the shopping process for customers. By scanning QR codes strategically placed throughout the store, shoppers can effortlessly access detailed product information, such as prices, ingredients, and special promotions. This innovative approach enables shoppers to make informed purchasing decisions quickly and efficiently. At the heart of our project is a commitment to making shopping more convenient and enjoyable for both merchants and customers. For merchants, our application provides valuable insights into customer preferences and buying habits, enabling them to optimize inventory management and tailor promotions to meet the needs of their clientele. For customers, our application serves as a virtual shopping assistant, guiding them through the aisles and offering personalized recommendations based on their preferences and past purchase history. Shoppers can share their shopping experiences, recommend products to friends and family, and participate in loyalty programs to earn rewards and discounts. This social aspect adds a layer of fun and interactivity to the shopping experience, strengthening customer relationships and encouraging repeat business.

EXISTING SYSTEM:

Below are some of the existing systems that we gone through:

Dr. S. M. Umaet al.[1] in 2023 proposes the development of a web application for an online supermarket that aims to revolutionize the shopping experience. Her project introduces a user-friendly platform where shoppers can easily browse and purchase groceries by scanning QR codes on products. The primary focus of the application is to streamline the

shopping process, saving users time and effort. One of the key features of Dr. S. M. Uma's proposal is the integration of expiry date indication, ensuring that users are informed about product freshness before making a purchase. The application alerts users about the expiry status of products both when scanning the QR code and when reviewing items in their cart, providing them with crucial information to make informed decisions.

Additionally, the system generates a detailed bill for users to review before proceeding to checkout, enhancing transparency and trust in the online shopping experience. Overall, Dr. S. M. Uma's project promises to deliver a convenient and hassle-free way for users to shop for groceries online, combining advanced technology with user-centric design principles.

[1] Farley, A., Stevanus, V. (2018) "Swarm Android Mobile Robot: Smart Trolley Application" School of Computer Science Universitas Bina Nusantara. This paper presents the development of a smart trolley application utilizing Swarm Android Mobile Robot technology. It likely discusses the implementation and functionalities of the application, potentially focusing on features like navigation assistance, inventory management, and user interaction within a retail environment.

[2] Ives, B., Cossick, K., Adams, D. (2019) "Amazon Go: Disrupting retail?" Journal of Information Technology Teaching Casenotes, Association for Information Technology Trust 2019. 1-11This paper explores the disruptive impact of Amazon Go, a cashier-less retail store concept, on the traditional retail industry. It likely discusses the underlying technology, such as computer vision and sensor fusion, as well as the implications for retail operations and customer experience.

[3] Kapusy, K., and Lógó, E. (2017) “Values Derived from Virtual Reality Shopping Experience among Generation Z” 8th IEEE International Conference on Cognitive Infocommunications, Debrecen, Hungary: 237-242.This paper investigates the values derived from virtual reality shopping experiences, particularly among Generation Z consumers. It may discuss the psychological and behavioral aspects of VR shopping, as well as its potential impact on consumer preferences and purchasing decisions.

[4] Karsten, J. and West, D. M. (2018) "Amazon Go store offers quicker checkout for greater:This article likely analyzes the Amazon Go store model, focusing on its innovative checkout process and the data collection opportunities it presents. It may discuss the implications of such technology for consumer privacy, retail operations, and the future of brick-and-mortar stores.

[5] Lau, K. W., Lee, P. Y., and Lau, H. F. (2014) “Shopping Experience 2.0: An Exploration of How Consumers Are Shopping in an Immersive Virtual Reality,” Advances in economics and business (2:2): 92-99.This paper explores how consumers engage in shopping experiences within immersive virtual reality (VR) environments. It likely investigates consumer behaviors, preferences, and satisfaction levels when shopping in VR, as well as the potential impact of VR technology on retail strategies and customer engagement.

[6] Martínez-Navarro, J., Bigné, E., Guixeres, J., Alcañiz, M., and Torrecilla, C. (2018) “The Influence of Virtual Reality in E-Commerce” Journal of Business Research, In Press. doi: 10.1016/j.jbusres.2018.10.054. This article examines the influence of virtual reality (VR) on e-commerce, focusing on how VR technology affects consumer behavior, decision-making processes, and purchase intentions.

[7] Market Watch (2019) "Smart Shopping Carts Market 2019 – Global Industry Analysis, Size, Share, Growth, Trends and Forecast 2019 - 2024". Retrieved from: https://www.marketwatch.com/pressrelease/shopping-cart-market-size-and-share2019-top-leading-countriescompaniesconsumption-drivers-trends-forces-analysisrevenue-challenges-and-global-forecast-2022-2019-07-11. This Market Watch report provides an analysis of the global smart shopping carts market, including industry trends, market size, growth projections, and key players. It likely covers technological innovations in smart shopping cart systems, market drivers, challenges, and future growth opportunities in the retail sector.

PROBLEMS IDENTIFIED IN EXISTING SYSTEMS:

The System has may lack of the Pricing features.
No Proper QR for the Products.
There is no complete proposed system for identification of the product.
We observed only case studies of calculation footprints in only one organization.
Implementation within an area for multiple sectors is not yet Implemented

PROPOSED SYSTEM:

Our proposed Our proposed QR-based guide system for supermarkets offers a comprehensive solution to enhance the shopping experience for users. Through a secure login system, users gain access to an intuitive interface that allows for efficient product search and discovery. Leveraging a robust product database, the system provides detailed information including price, nutritional facts, and promotional offers. Precise location mapping guides users to the exact rack and floor where the desired product is located, complemented by visual aids such as product images. Real-time updates ensure accuracy and reliability, while personalization options cater to individual preferences. Integration with loyalty programs allows users to maximize rewards, while feedback mechanisms facilitate continuous improvement. With accessibility features, multi-platform compatibility, and offline functionality, the system ensures inclusivity and convenience for all users. Strong security measures safeguard user data and transactions, while analytics provide valuable insights for both users and supermarket operators, ultimately enhancing efficiency and satisfaction in the shopping process.

Here we have two logins

1.The Organizations where the admin has the Authority of the Application

2.The Customer or User has the login to access the application.

Users can log in using their credentials, ensuring privacy and personalization of their shopping experience. On the other hand, the admin login interface grants authorized personnel access to the system's administrative functions, enabling them to manage product databases, update information, monitor user activity, and configure settings. Admin login ensures control and oversight of the system's operations, facilitating efficient management and maintenance of the supermarket's digital infrastructure.

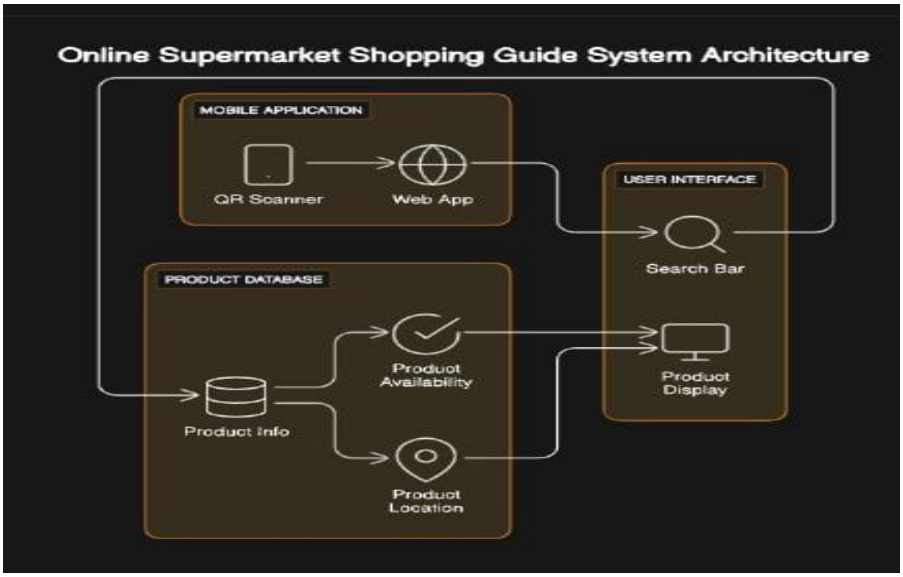
BENEFITS OF PROPOSED SYSTEM:

Efficient Product Location: Users can quickly locate products by scanning QR codes, eliminating the need for extensive searching and reducing shopping time. Easy access to product locations minimizes frustration associated with navigating through aisles, leading to a more pleasant shopping experience. Enhanced User Experience: Users can access comprehensive product information, including pricing and location, at their fingertips, enhancing convenience and satisfaction. Intuitive design and easy navigation of the QR-based guide system contribute to a positive user experience, making it accessible to a wide range of shoppers. Equal access: The QR-based guide system is accessible to users with disabilities, ensuring inclusivity and providing equal access to information for all shoppers. Access to up-to-date information empowers users to make informed purchasing decisions, leading to higher satisfaction and loyalty. Improved usability: Accessibility features such as screen reader compatibility enhance the usability of the system for users with diverse needs, promoting an inclusive shopping experience. Promotes a culture of sustainability and environmental responsibility within the community.

ARCHITECTURAL DESIGN:

Architectural view of entire proposed system is shown in the below figure talks about how the data is collected from the organization. And the collected data is stored in the data set and

next we will preprocess the data set and split the data set into two groups and evaluate the results.



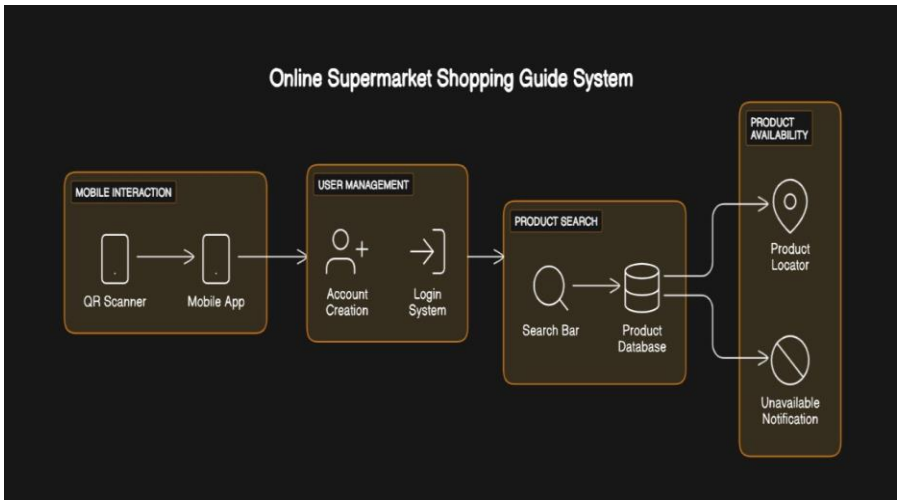


Fig. Architecture Diagram.

SAMPLE OUTPUT:

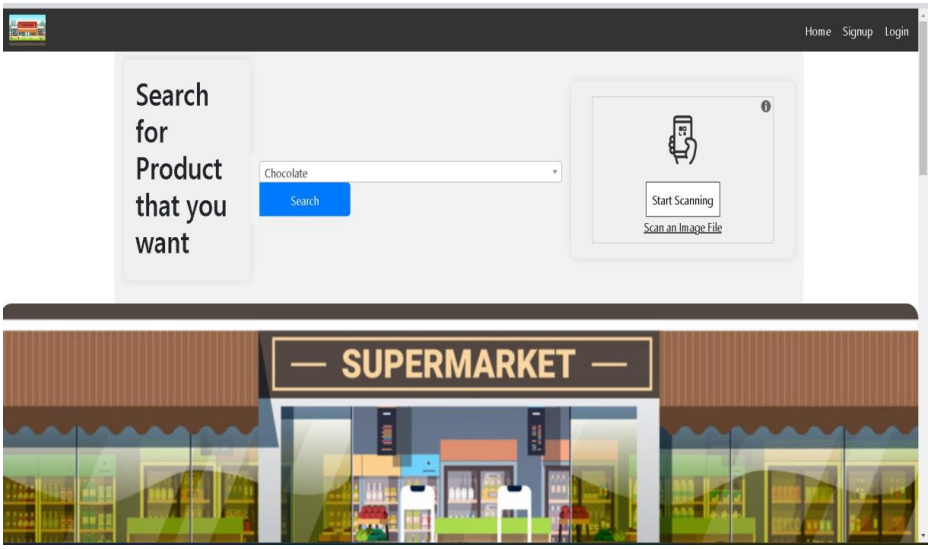


Fig.1 Home page

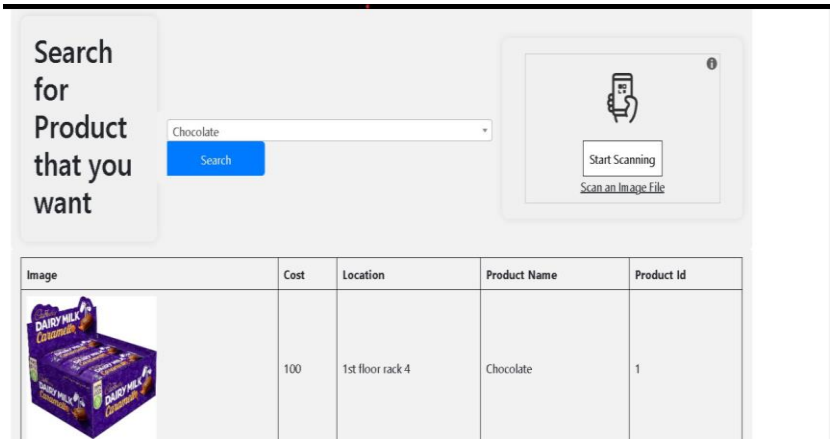


Fig.2 Searching of the product

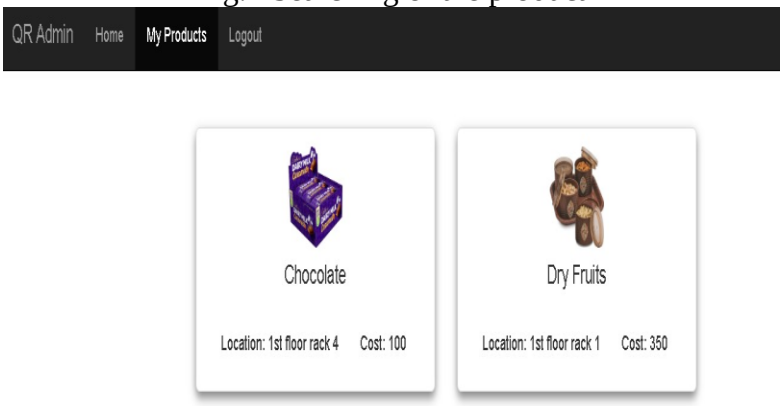


Fig.3 Product located

CONCLUSION:

The QR-based guide system marks a significant leap forward in revolutionizing the shopping experience within supermarkets. By seamlessly integrating QR code technology, this system offers customers unparalleled convenience, enabling them to access comprehensive product information, promotions, and offers instantly with a simple scan of their mobile devices. This innovation not only streamlines the shopping process but also empowers customers to make informed purchasing decisions, ultimately enhancing their overall satisfaction. Furthermore, the system's interactive features, such as personalized recommendations and real-time inventory updates, foster greater engagement and interaction with customers, leading to increased loyalty and repeat business.

REFERENCES:

[1] Farley, A., Stevanus, V. (2018) "SwarmAndroid Mobile Robot: Smart TrolleyApplication" School of Computer ScienceUniversitas Bina Nusantara.

[2] Ives, B., Cossick, K., Adams, D. (2019)"Amazon Go: Disrupting retail?" Journal of Information Technology Teaching Casenotes, Association for Information Technology Trust2019. 1-11

[3]Kapusy, K., and Lógó, E. (2017) “ValuesDerived from Virtual Reality Shopping Experience among Generation Z” 8th IEEE International Conference on Cognitive Info communications, Debrecen, Hungary: 237-242.

[4]Karsten, J. and West, D. M. (2018) "Amazon Go store offers quicker checkout for greater data collection". Retrieved from:n https://www.brookings.edu/blog/techtank/2018/ 02/13/amazon-go -store-offers-quickercheckout-for-greater-data-collection/

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