IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606

QR CODE BASED GROCERY BILLING WITH EXPIRYALERT SYSTEM

Dr. A.R. JAYASUDHA[1], LIKITH.P[2]

Professor& Head – MCA, Hindusthan College of Engineering and Technology, Coimbatore, India[1].

II MCA Student, Hindusthan College of Engineering and Technology, Coimbatore, India[2].

Abstract: The drawbacks in the existing system are, firstly the time required for bill payment is more as the users have to wait in a long queue. Secondly, the users have to move the cart through the entire mall and carry a load of products at their home. One more drawback is regarding the barcode in which less data is stored. An inventive way to improve convenience and efficiency for consumers and retailers alike is the QR Code-Based Grocery Products Purchasing and paying System, which simplifies the grocery purchasing and paying process. This technology makes use of Quick Response (QR) codes to provide a frictionless and smooth purchasing experience. When grocery shopping, the process usually entails picking out things by hand, putting them in a cart, and then going to the checkout counter where a cashier scans each item by hand and creates a bill. This process can take some time to finish, especially during busy periods. Our system enables QR codes to be added to every grocery item in order to get over these challenges. This eliminates the need for a physical checkout by enabling customers to use their smartphones to scan and purchase goods. The data is sent to the server after the user scans and adds the item to the cart, and the bill is created once all the goods have been added. The items are delivered to the user's house, the bill is emailed to his device, and bill payment is completed online. The goal of this project is to create an alarm system that alerts managers and store owners when inventories or items are about to.

I. INTRODUCTION

1.1 PROBLEM DESCRIPTION

These days, shopping centers are larger and provide a wider range of products. The quest for cost-effective buying becomes increasingly apparent. To address the challenge in Large retailers have started offering touch mall shopping systems, mall layout maps, and other shopping guide emails to their customers. The shopping guide has grown in popularity in recent years. We created a mechanism to make shopping easier for customers in order to enhance their experience and get around the current system.

As a result, creating a straightforward, quick, and easy purchasing system has become a shared priority for both retailers and consumers. Given that mobile phones have grown in popularity as consumer goods, shopping guide systems were designed using straightforward optimization technique smart phones, which enable us to store more data by using QR codes and their generation and recognition technologies. The suggested applications can provide real-time and correct shopping destinations, assisting malls in more precisely mining consumer data and methodically. When a user goes shopping and wants to buy a product, he uses a QR code scanner on his Android device to scan the product's QR code.

This provides him with a list of all the similar products in that price range as well as any deals or discounts that are associated with that product. Our system uses QR codes for every product, which are generated using QR codes. A state-of-the-art method for updating the grocery shopping experience is the QR Code-Based Grocery Products Purchasing and Billing System.

1.2 OBJECTIVE

The primary goal of the project is to create software for the Product Expiration System Model, which will display all of the organization's stock information. The inventory and upkeep of the inventory system are managed via an admin component of this web-based application.

This application is dependent on how an organization manages its inventory. The application includes the organization's basic description, sales information, purchase information, and expiration dates. Additionally, there is a provision for updating the inventory.

IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606

1.3 SCOPE

By offering product expiration notifications on a daily, weekly, or monthly basis, this initiative, product expiry alert management, helps supermarkets operate more efficiently. Additionally, it offers the basic information maintenance function for products, memberships, and employees. This allows managers to add, edit, and remove basic employee information as well as for employees to add, edit, and delete basic membership and product information. A product expiry management system makes it very easy to manage, input, output, and locate data in order to organize and rationalize the disorganized data found in supermarkets.

1.4 OUTLINE OF THE THESIS

The first disadvantage of the current approach is that it takes longer for people to pay their bills because there is a lengthy line. Second, customers must push the cart the full length of the mall and carry a heavy load of goods to their residence. Another issue with barcodes is that they hold less data. Given the increasing popularity of mobile phones as consumer goods, a straightforward optimization technique was developed to create shopping guide systems that operate on smart phones. This technique makes use of QR code production and recognition technology, allowing us to store more data through the use of the code. The suggested applications can provide precise and up-to-date shopping destinations, assisting malls in more effectively and scientifically mining consumer data.

II. LITERATURE SURVEY

2.1 TITLE : Combining channels to make smart purchases: The role of webrooming and showrooming

AUTHOR: Carlos Flavián, Raquel Gurrea, Carlos Orús, 2019.
The authors of this study examine how particular combinations of online and offline channels—such as showrooming and webrooming—affect client experiences, particularly with regard to perceptions and emotions related to smart purchasing. Considering that cross-channel customers have distinct reasons for doing business, the impact of Motivations for shopping are managed. According to the findings of a fashion industry trial, webroomers perceive themselves as having saved more time and effort, as having made the right choice, and as feeling more like knowledgeable shoppers than showroomers. Additionally, compared to showrooming, webrooming results in increased personal attribution, which implies that customers feel more accountable and in charge of the decisions they make. The effect of webrooming on sentiments related to wise purchasing is then moderated by personal attribution. Even if businesses could struggle with Monitoring how customers utilize both online and physical channels can help them feel more in control of the process and have better purchasing experiences by influencing their perceptions and emotions.

2.2 TITLE : QR code and mobile payment: The disruptive forces in retail

AUTHOR: Li-Ya Yan a, Garry Wei-Han Tan, 2020.

Numerous economic sectors were affected by the introduction of mobile payments, or m-payments, especially the retail sector. However, there is still a lot of space for improvement when it comes to m-payment acceptance. Thus, the goal of this study is to identify the crucial factors that influence the desire to use mobile payments, especially those that make use of Quick Response (QR) code technology. expanded Acceptance Model for Mobile Technology. For those involved in the retail industry, a plethora of practical consequences are also offered, in addition to multiple theoretical ones. Due to the expansion of available payment options, consumers are no longer limited to using cash or credit/debit cards to pay for goods and services (de Luna et al., 2019).

Just one among them is mobile payment, or m-payment, a flexible mobile service that lets customers purchase goods and services by using a smartphone (Chawla and Joshi, 2019). Boost, Touch 'n Go eWallet, and Square were the only three of the top m-payment service providers chosen to give their customers the incentive in this regard. Khuzanah Nasional Berhad (2019) released GrabPay. Surprisingly, though, Malaysia does not employ m-payment very often. In Malaysia, m-payments accounted for barely 10% of all payments (Yuen, 2019).

Furthermore, despite efforts to make Malaysia a cashless society, cash and cards remain the most popular payment methods (Nielsen, 2019). All of this indicates that, as the nation attempts to transition to a cashless society, there is a need to better understand the factors that are driving the adoption of Quick Response (QR) code m-payments.

IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606

2.3 TITLE : Autonomous Shopping Systems: Identifying and Overcoming Barriers to Consumer Adoption

AUTHOR: Emanuel de Bellis a,, Gita Venkataramani Johar, 2020.

Technology is become more and more independent, capable of making choices and finishing jobs for users. Virtual assistants currently handle grocery shopping by restocking items that have been used up, and culinary machines prepare ingredients and follow recipes. In the future, shoppers will be able to give autonomous retail systems significant shopping-related tasks. However, the systems' functional advantages are apparent; by delegating decisions and responsibilities to technology, they upend psychological consumption motives and established human-machine connections. The authors investigate adoption hurdles for autonomous shopping systems using a cross-disciplinary methodology that draws on studies in psychology, marketing, and human–computer interaction. They list many psychological and cultural hurdles and offer strategies for designing the online and physical retail spaces to help customers get beyond them as they go through the buying process. The essay concludes with policy makers' implications and a study agenda for future studies by scholars looking at autonomous technology.

2.4 TITLE : QR Code Based Secure Billing System for Shops using Cued Click Points
AUTHOR: Mr. Vikas Nandgaonkar1, Nikita Dongre1, 2019.

In the current mall shopping system, customers typically go to the mall to shop. various things and invest their valuable time in looking for products that fit their budget. Following product selection, users must Another time-consuming aspect of shopping is waiting in a long line for billing, and wheeling the cart around is another demanding chore. With this system, users spend more time looking across the entire mall for merchandise. In order to prevent these problems, we are developing this system. The first disadvantage of the current approach is that it takes longer for people to pay their bills because there is a lengthy line. The suggested applications can provide precise and up-to-date shopping destinations, assisting malls in more effectively and scientifically mining consumer data. We are going to use QR codes in our system. When a user goes shopping and wants to buy a product, he uses a QR code scanner on his Android device to scan the product's QR code. This provides him with a list of all the similar products in that price range as well as any deals or discounts that are associated with that product. The process is carried out using searching and sorting algorithms. The data is sent to the server once the user scans and adds the item to the cart, and the bill is generated once all the products have been added to the cart.

2.5 TITLE : Towards the Customers' Intention to Use QR Codes in Mobile Payments

AUTHOR: Victor Chang, Qianwen Xu, 2021.

This study uses an integrated model based on UTAUT to investigate why consumers select the QR code as a payment method. To validate the suggested framework, 424 valid responses from a range of socioeconomic backgrounds were gathered. In contrast In order to offer more thorough and uniform recommendations than the original UTAUT model, the updated version incorporates "perceived security," "perceived benefits," and leaves out "social influence." PLS-SEM technology was used in the SmartPLS data processing procedure. According to the study's conclusion, the PLS-SEM approach supports seven out of nine hypotheses.

Consumers' attitude, perceived utility, and subjective norms on utilizing QR codes as payment methods all contribute to their intention (R2=0.87) to use QR codes as the payment tool. The development of Subjective norms, perceived benefits, and perceived usefulness all influence consumers' opinions (R2=0.79) toward adopting QR codes. Future research directions as well as a discussion and strategy for QR payment providers' third parties are offered. The well-built 5G and Wi-Fi infrastructure, as well as adaptable mobile terminals, all add to the appeal of mobile payments. A cashless society benefits service providers by gathering data, in addition to users by saving money. Most cashier desks, especially in China, give QR codes as a specific type of mobile payment option. Regardless of these establishments' location or size, it is effortlessly usable.

III. SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

The existing system is handled manually. The system has a formatted billing system for Sales in paper work. The indent is prepared when items are to be purchased and bill is generated for sale of items. The system follows large number of paper work for maintaining accessories details and user can be difficult to search the accessories in database.

IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606

DISADVANTAGES

- The time required for bill payment is more as the users have to wait in a long queue.
- Lots of the time consumed for each report generation.
- Manual system is takes more time.
- Existing system is manually, so it increases the chances of errors.
- One more drawback is regarding the barcode in which less data is stored.
- Less payment security

3.2 PROPOSED SYSTEM

The suggested technique can be utilized to display precise and up-to-date shopping destinations, assisting malls in more correctly and scientifically mining consumer data. Within our when a user goes shopping and wants to buy a product, he scans the product's QR code with a QR code scanner on his Android device. This provides him with a list of all the similar products in that price range as well as any deals or discounts associated with that product. The system will use QR codes for every product using QR code generator. Searching and sorting algorithms are used to accomplish this. The data is fed to the server once the user scans and adds the item to the cart, and the bill is generated once all the products have been added the sleigh.

ADVANTAGES

- User Experience is made very simple.
- Users don’t have to wait at Queue for payment checkout.
- By joining the priority queue reserved for this application user rather than the regular line, users can save time.
- The ability for customers to remove items from their list with a single click makes this application highly relevant for use

SYSTEM SPECIFICATION

3.3 HARDWARE REQUIREMENTS

- Processor : Dual core processor 2.6.0 GHZ
- RAM : 4GB
- Hard disk : 320 GB
- Compact Disk : 650 Mb
- Keyboard : Standard keyboard
- Monitor : 15 inch color monitor

3.4 SOFTWARE REQUIREMENTS

- Operating system : Windows OS
- Front End : Python
- Back End : MySQL SERVER
- IDLE : Pycharm

IV. SOFTWARE DESCRIPTION

4.1 Frond End: Python

Python is a high-level, interpreted programming language designed for general-purpose use. Python was developed by Guido van Rossum and was originally made available in 1991. Its design philosophy prioritizes code readability and makes extensive use of whitespace. It offers building blocks that facilitate understandable programming at both small and big sizes. Van Rossum resigned as the head of the language community in July 2018.

Python has automated memory management and a dynamic typing system. It features a sizable and extensive standard library and supports a variety of programming paradigms, including as imperative, functional, procedural, and object-oriented programming. There are interpreters for Python on a wide range of operating systems. Like almost all of Python's other implementations, CPython, the standard implementation, is free software with a community-based development approach.

IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606

The nonprofit Python Software Foundation oversees both Python and CPython. Python was intended to be extremely expandable, rather than having all of its features built into its core. Because of its tiny modularity, it's especially well-liked for integrating programmable interfaces into already-existing applications. Van Rossum was frustrated with ABC, which advocated the opposite strategy, and developed his idea of a compact core language with a huge standard library and an easily expandable interpreter.

The Python ideology promotes a less complicated, less crowded grammar over flamboyant syntax (like that of Perl) while still providing options for development approach. The Python culture does not view being called "clever" as a praise, as Alex Martelli stated. Python's attitude opposes the Perl "there is more" mentality.

to optional CPython parts that could improve speed a little bit at the price of readability.Python programmers can move time-sensitive operations to extension modules written in languages like C where speed is an issue, or they can use PyPy, a just-in-time compiler. CPython is also available; it converts Python scripts into C and launches the Python interpreter straight from C-level APIs. One of the top goals for Python's developers is to make it fun to use. This is reflected in the name of the language, which is a tribute to the British comedy group Monty Python, as well as in the often humorous methods used to tutorials and reference resources. As an example, instead of using the standard for and bar, instances may use spam and eggs, which is a reference to a well-known Monty Python joke.

4.2 Back End: My SQL

As of2008, MySQL, which functions as a server and allows multiple users to access various databases, is the most popular open-source relational database management system (RDBMS) in the world. The source code for the MySQL development project is accessible under many proprietary agreements including the GNU General Public License. One for-profit corporation, MySQL AB of Sweden, which is currently owned by Oracle Corporation, was the owner and sponsor of MySQL.

A popular database option for online applications, MySQL is a keystone of the extensively utilized LAMP framework open source web application software stack—LAMP translates to "Linux, Apache, MySQL, Perl/PHP/Python." MySQL is frequently used in free-software-open-source projects that need a feature-rich database management system.Several premium editions with more features are available for business usage. Applications utilizing MySQL databases consist of: Drupal, phpBB, MyBB, Joomla, Word Press, TYPO3, and more LAMP software stack-based programs. Several well-known, expansive World Wide Web applications, such as Wikipedia, Google (not for searches), ImagebookTwitter, Flickr, Nokia.com, and YouTube, also utilize MySQL.

4.3 Inter images

Since its primary function is RDBMS, MySQL does not come with any graphical user interface (GUI) capabilities for managing data or administering databases. Alternatively, users can use the command line tools that come with the package or utilize desktop and online programs known as MySQL "front-ends" to create and administer MySQL databases, construct database structures, back up data, check status, and operate with data records. Oracle actively develops MySQL Workbench, the official suite of front-end tools for MySQL, which is freely accessible.

4.4 Graphical

Developed by MySQL AB, the official MySQL Workbench is a free integrated environment that lets users create database architectures and graphically operate MySQL databases. MySQL Workbench is a software program that has replaced MySQL GUI Tools. MySQL Workbench, which replaces MySQL Query Browser and allows users to handle database design and modeling, SQL development, and database management, is comparable to other third-party products but is still regarded as the official MySQL frontend.

There are two versions of MySQL Workbench: the standard, open-source, free Community Edition that can be downloaded from the MySQL website, and the premium, paid Standard Edition that expands and enhances the Community Edition's feature set.

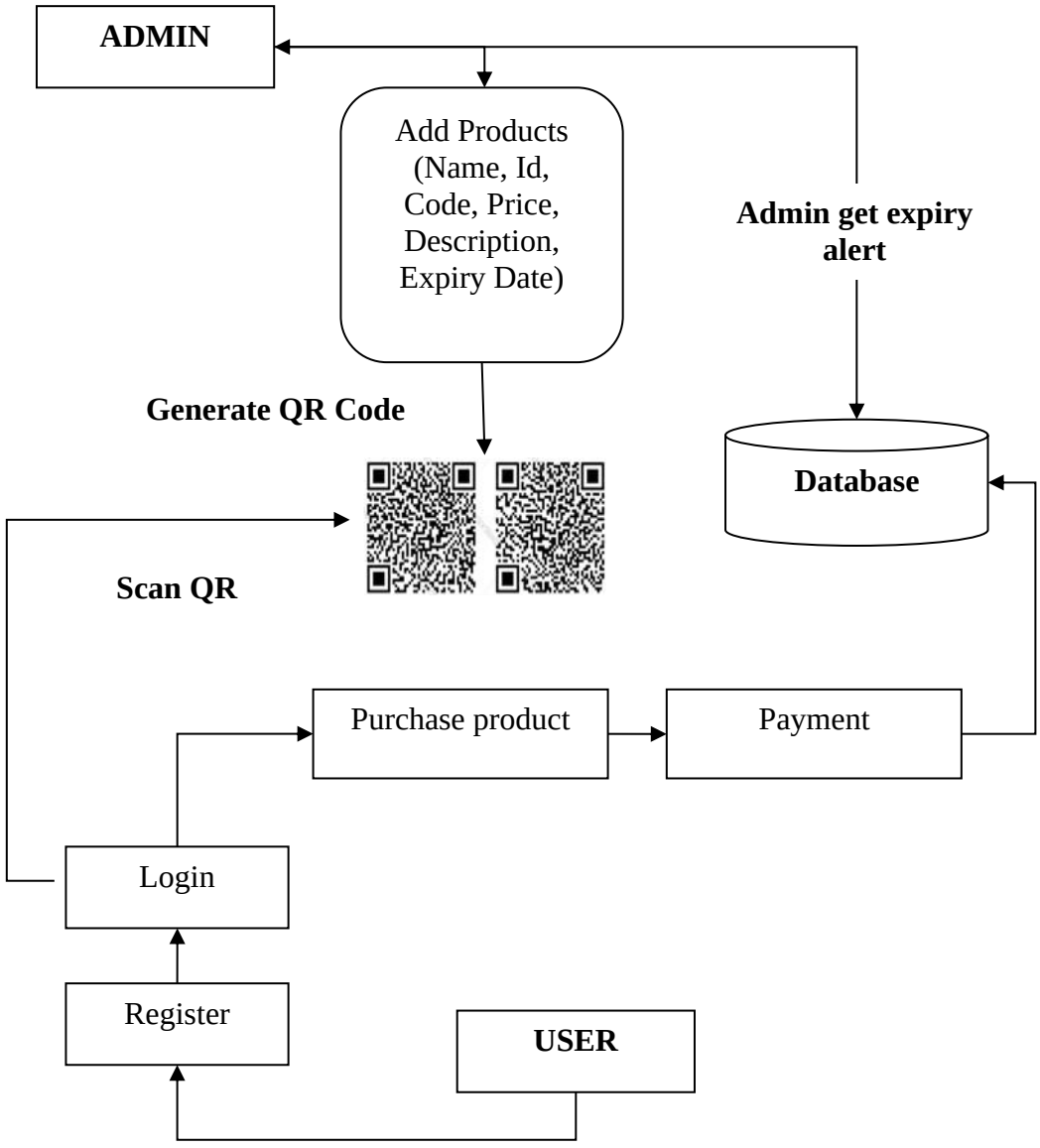
IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606

4.5 BLOCK DIAGRAM



V. IMPLEMENTATION AND RESULT ANALYSIS

- **Interface creation**

This module offered a framework for web application to the customer, to get laert without any human assistance.

- **User enrolment**

There is registration form available where new user can create their account by providing required information to the system. The registration form details are like name, email, gender, mobile number, address, and etc. These details are stored in the database. And then can getting to the username and password in the system. After the login process the admin can login the system using his/ her username and password.

- **Update stock details**

The user can upload the stock details, sales details, bill details to this application after the login process.

- **Alert through email**

In this module used to get the alert system. If the user had low stock the system will sent alert through the user mail.

IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606

VI. CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

More secure, safe, and dependable transactions are desperately needed as the demand for mobile shopping rises. Nowadays, smart phones have become an indispensable part of life, and they have minimized the amount of work involved in purchasing. The user can add an item to their cart by simply scanning the QR code of the item they like to buy using the camera capability. It has two benefits: first, there's no need to wait in line for a long period at malls to scan an item, and second, there's less opportunity for fraud when purchasing on a mobile device.

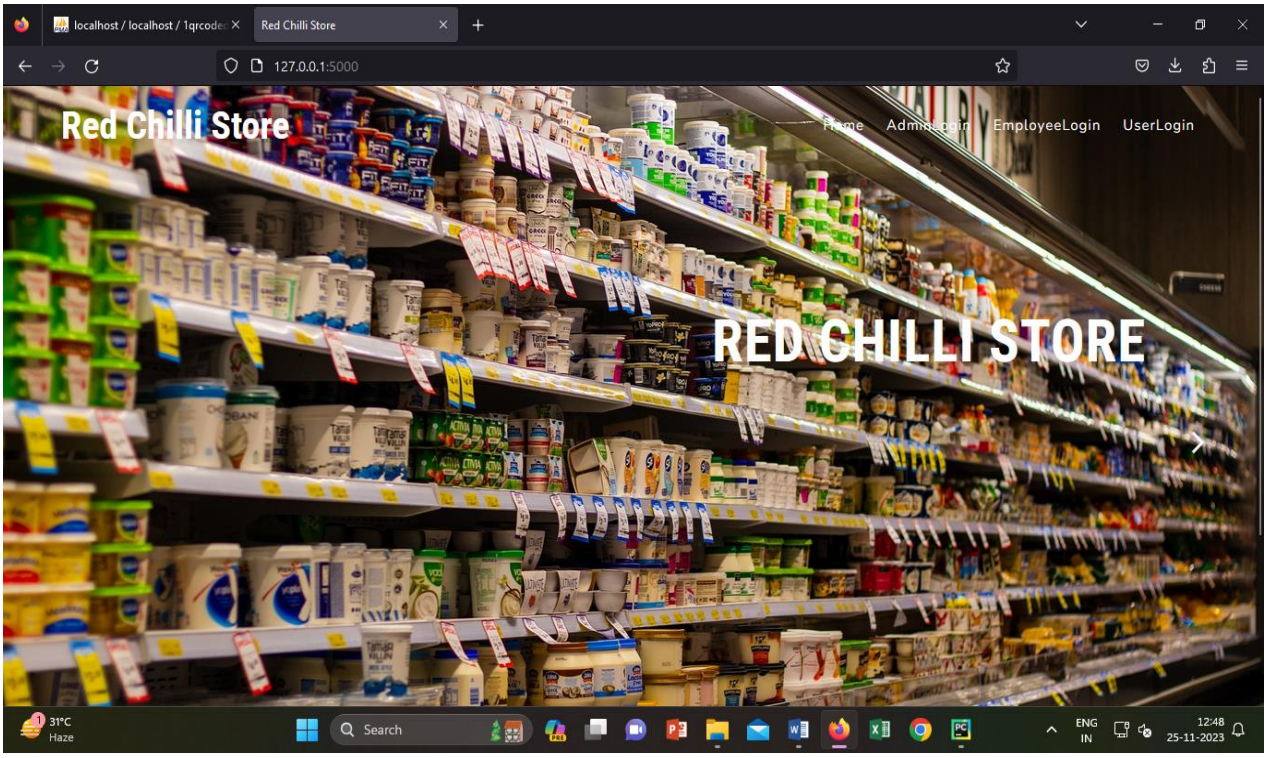
The customer's previously purchased things will be kept in the app for use in their subsequent purchases. The frequent transactions that will occur with the database of the shop will be secured. This will guarantee that neither the customer nor any other unauthorized user will be able to alter the shop's database.

6.2 FUTURE ENHANCEMENT

The store will have more time to spend advising customers, and one of the main strategies to prevent prescription errors is through user counseling. We can adjust our strategy based on the requirements of shop managers, but we have a lot of ideas for the future that will streamline the procedure and be very helpful.

Some things we can rely on for the future are: a. creating a program that runs the same tiny database on Android smart phones. b. to install and update a program or device across a network. c. The Android app can be used as a remote app to control a system. d. own a barcode reader, albeit it doesn't have to be a specific one that can be accessed remotely over Bluetooth

VII. OUTPUTS

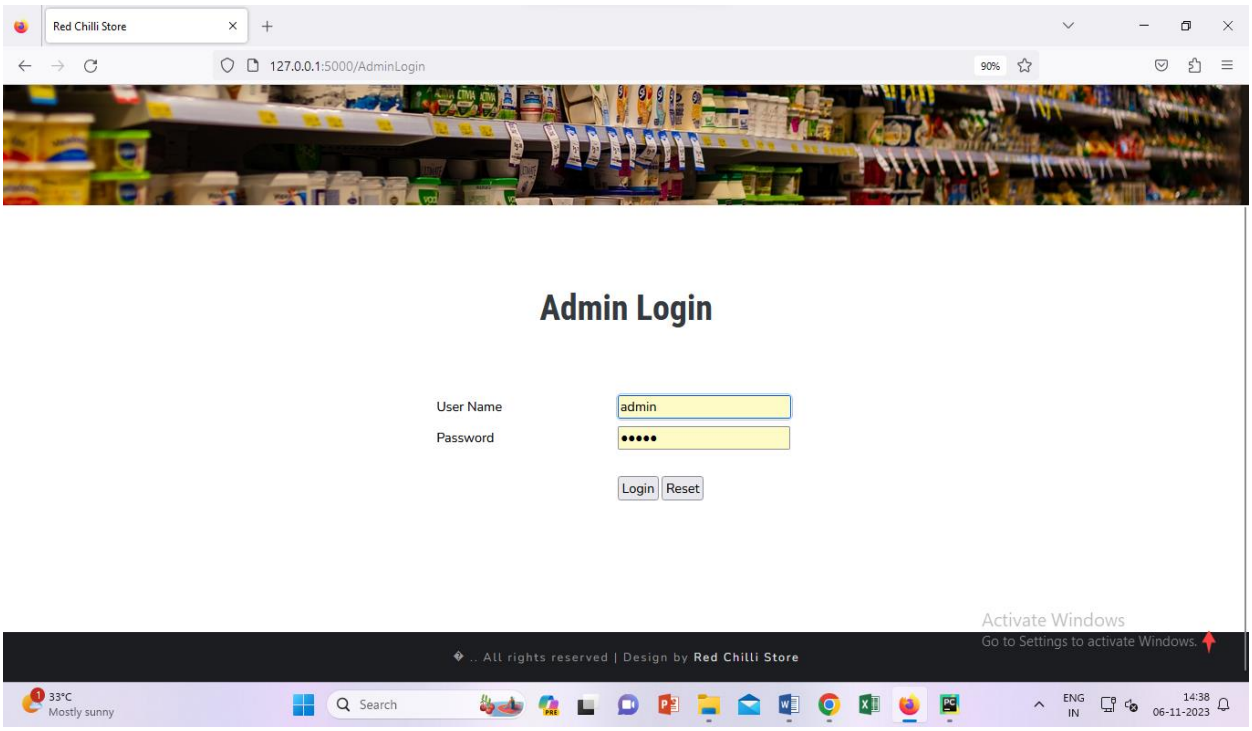


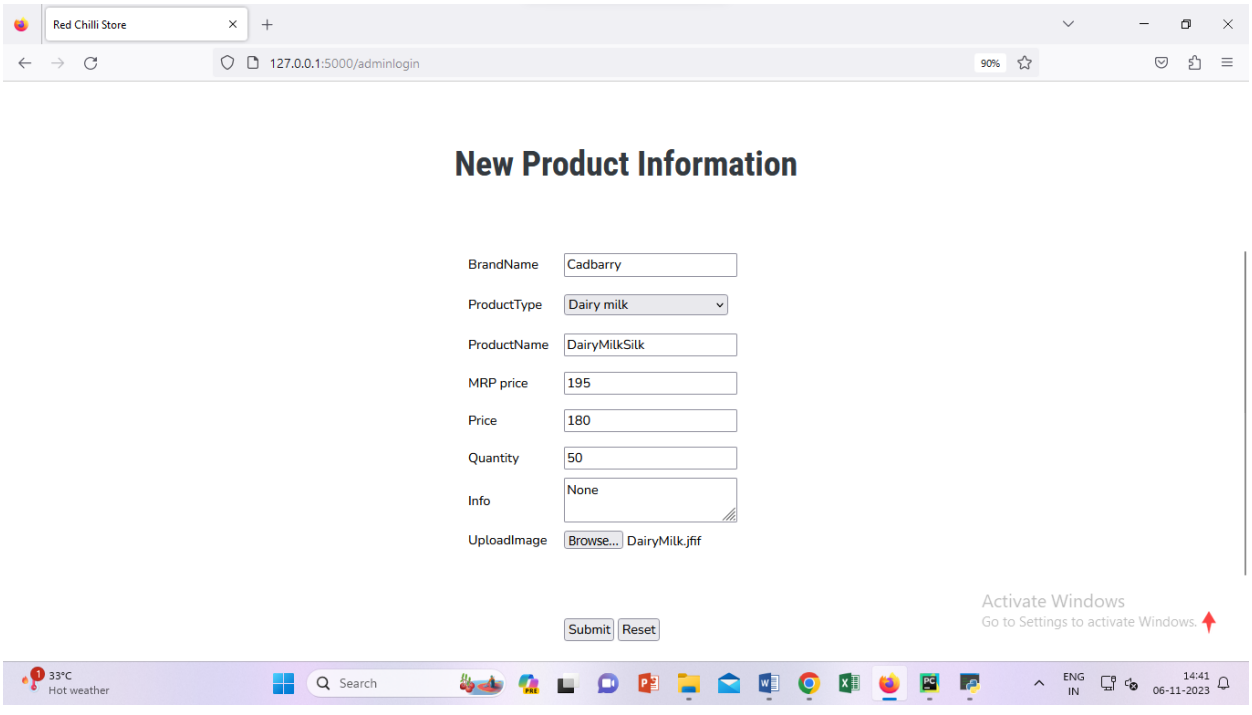
IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606



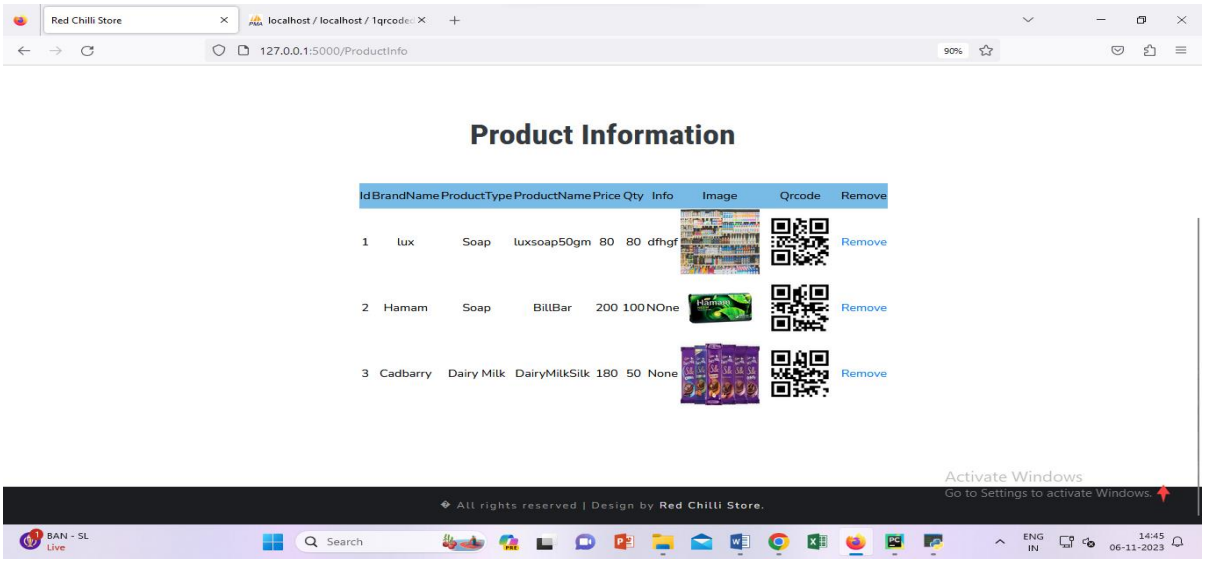


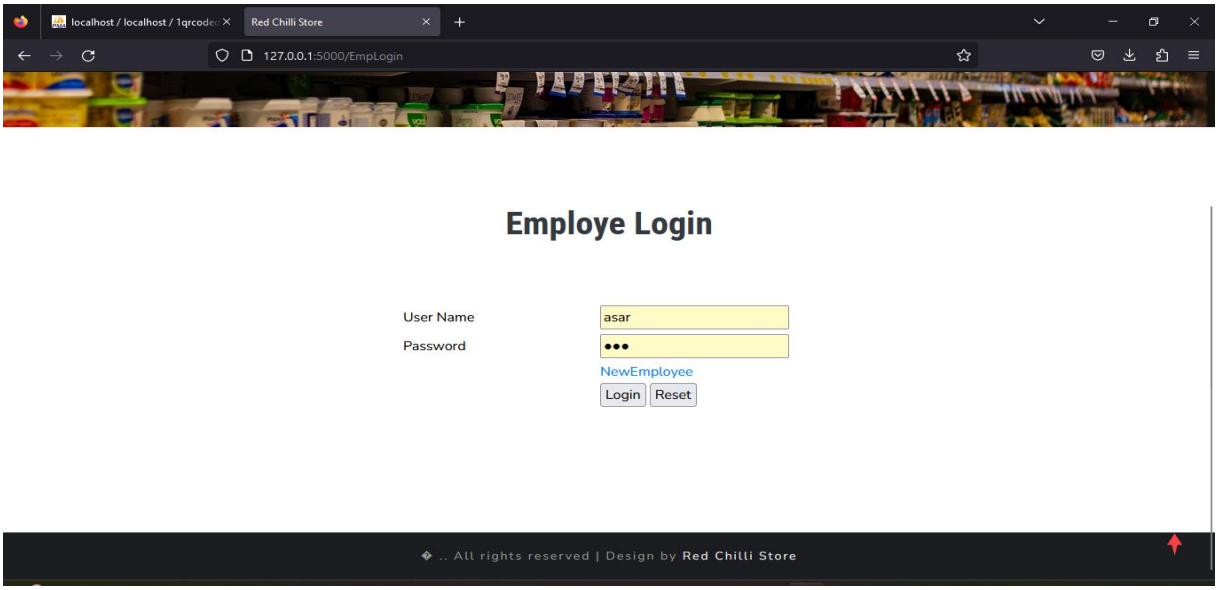
IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

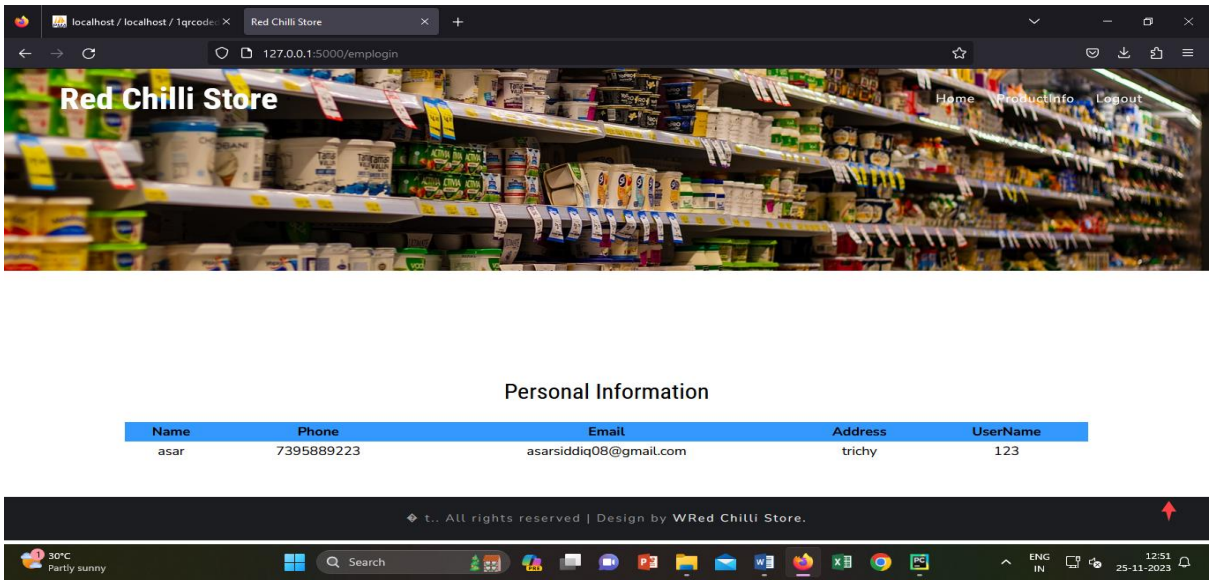
International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606





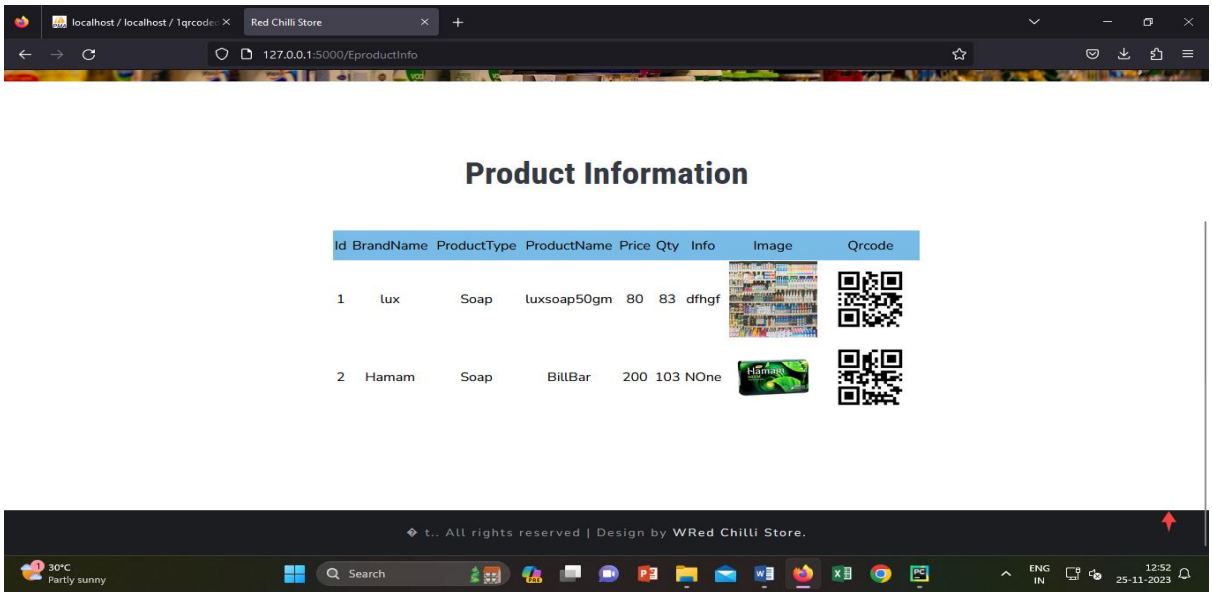


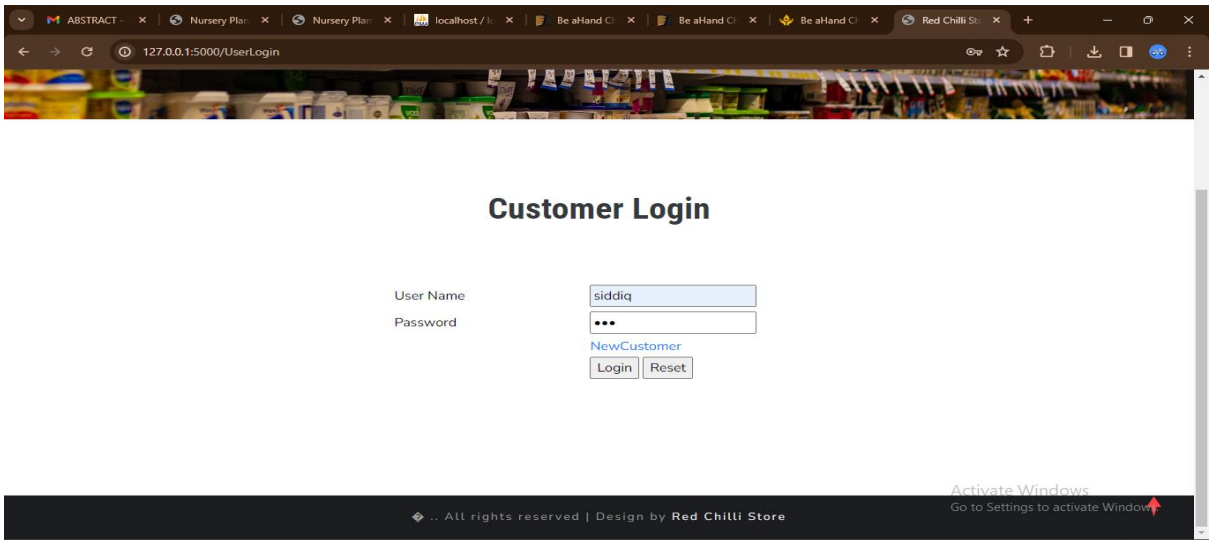
IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

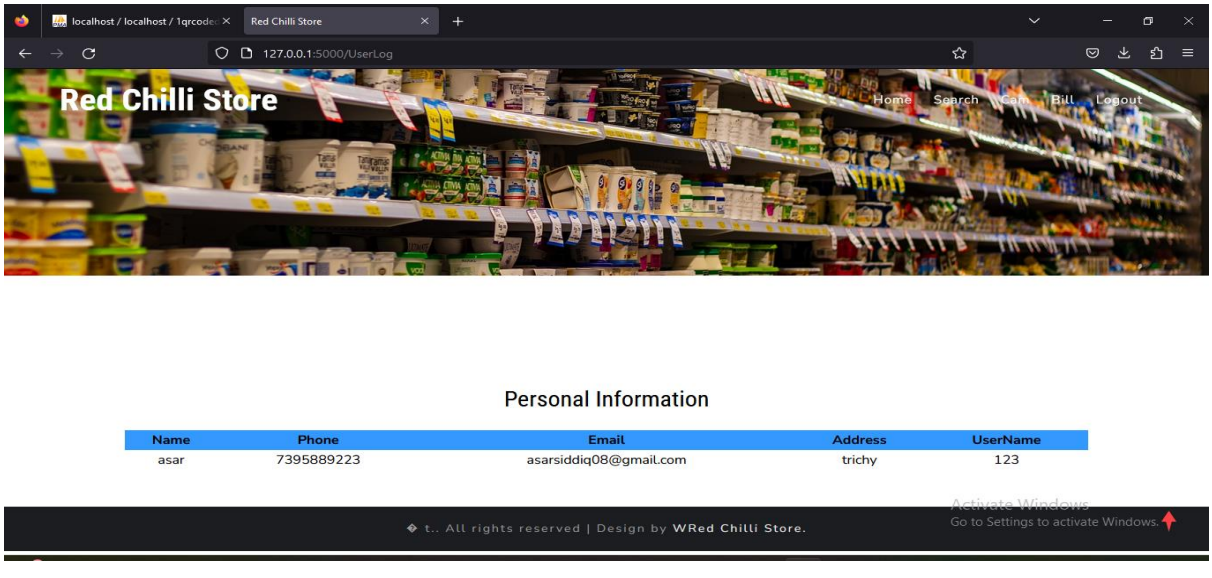
International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606





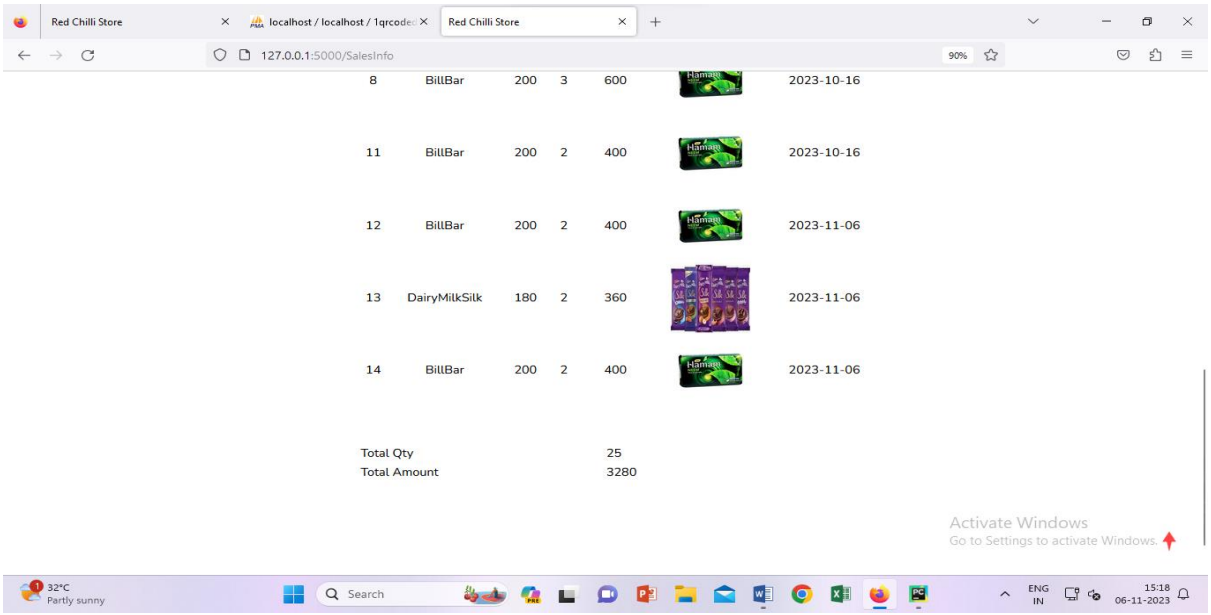


IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.066 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 11, Issue 6, June 2024

DOI: 10.17148/IARJSET.2024.11606



REFERENCES

BOOK REFERENCES

[1]. Heinold, Brian. "A practical introduction to Python programming." (2021).
[2]. Kneusel, Ronald T. Practical deep learning: A Python-based introduction. No Starch Press, 2021.
[3]. Dhruv, Akshit J., Reema Patel, and Nishant Doshi. "Python: the most advanced programming language for computer science applications." Science and Technology Publications, Lda (2021): 292-299.
[4]. Sundnes, Joakim. Introduction to scientific programming with Python. Springer Nature, 2020.
[5]. Hill, Christian. Learning scientific programming with Python. Cambridge University Press, 2020.

WEBSITE REFERENCES

[1]. https://medium.com/javarevisited/10-free-python-tutorials-and-courses-from-google-microsoft-and-coursera-for-beginners-96b9ad20b4e6
[2]. https://www.bestcolleges.com/bootcamps/guides/learn-python-free/
[3]. https://www.programiz.com/python-programming
[4]. https://realpython.com/
[5]. https://www.codecademy.com/learn/learn-python