REQUEST MANAGEMENT SYSTEM FOR ELECTRONIC GADGETS ANDAPPLIANCES

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Managing service requests can be challenging, particularly with the growing number of clients, customers, and associates associated with a business. Moreover, with the increasing reliance on electronic gadgets, maintaining them is becoming increasingly difficult due to frequent wear and tear. However, as these gadgets are an integral part of our daily lives, it is essential to find instant solutions to repair or service them regularly. To address this issue, we have developed an online service request management system that acts as a platform between the service center owner and the customer or mechanic. This system provides a simple and efficient way for users to request services or solutions from the service center. Additionally, the project makes it easier for service center owners to manage and address customer complaints and queries organizationally. Through this system, users can offer feedback, complaints, or compliments, which can help service centers to improve their operations. Furthermore, it provides trend, quality, and feedback information about the fulfillment of requests, contributing to overall improvement initiatives.

I. Introduction

The Request Management System for Electronic Gadgets and Appliances is designed to cater specifically to customer requests from rural areas. A request management system is a set of processes and tools used by organizations to manage their relationships with customers, employees, and vendors by addressing service requests. It enables companies to fulfill customer requests efficiently and effectively. The rapid growth of technology has led to an increase in the use of electronic gadgets and appliances in our daily lives. However, these devices are prone to malfunctioning, which can cause significant inconvenience to their users. To address this issue, a Service Request Management System has been developed to provide efficient and effective services for electronic gadgets and appliance repair. Nowadays, with the increasing number of requests and queries received from customers in different domains of industries, it is not practical to attend to every customer physically. In such scenarios, the Service Management System plays a vital role in handling these reservations. Our system will provide services in the electronic items domain, acting as a single platform for all types of requests from different users. These requests include maintenance of electronic gadgets and appliances, replacement of damaged parts, and other related services. Additionally, the system will assist in storing request data, maintaining stock records, and managing finances. Stored data can later be used for analysis, contributing to overall business improvement.

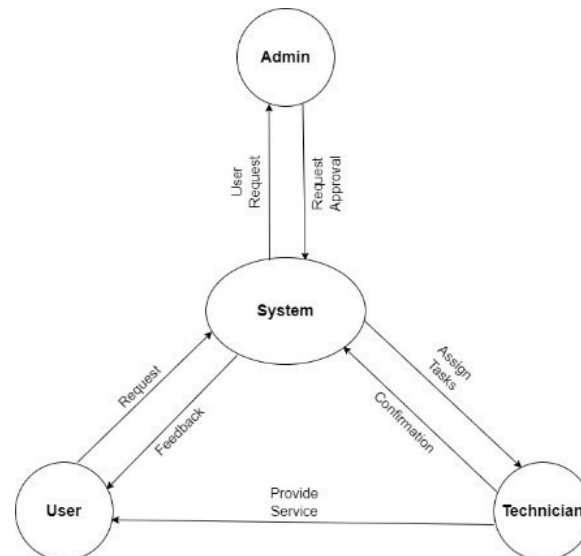## II. Methodology

A. Block Diagram -

Fig. 1   Block Diagram

The system operates through a simple block diagram that illustrates its basic functions. Users can submit their requests via the website or request management system, which are then forwarded to the admin. The admin will verify the request and assign a technician to complete the task. Upon confirmation, the admin will share the technician's contact details with the user. On the day of service, both the user and technician will undergo a two-level verification process. The technician will provide service to the user, and upon completion, the user can update the status on the website and provide feedback to the technician.
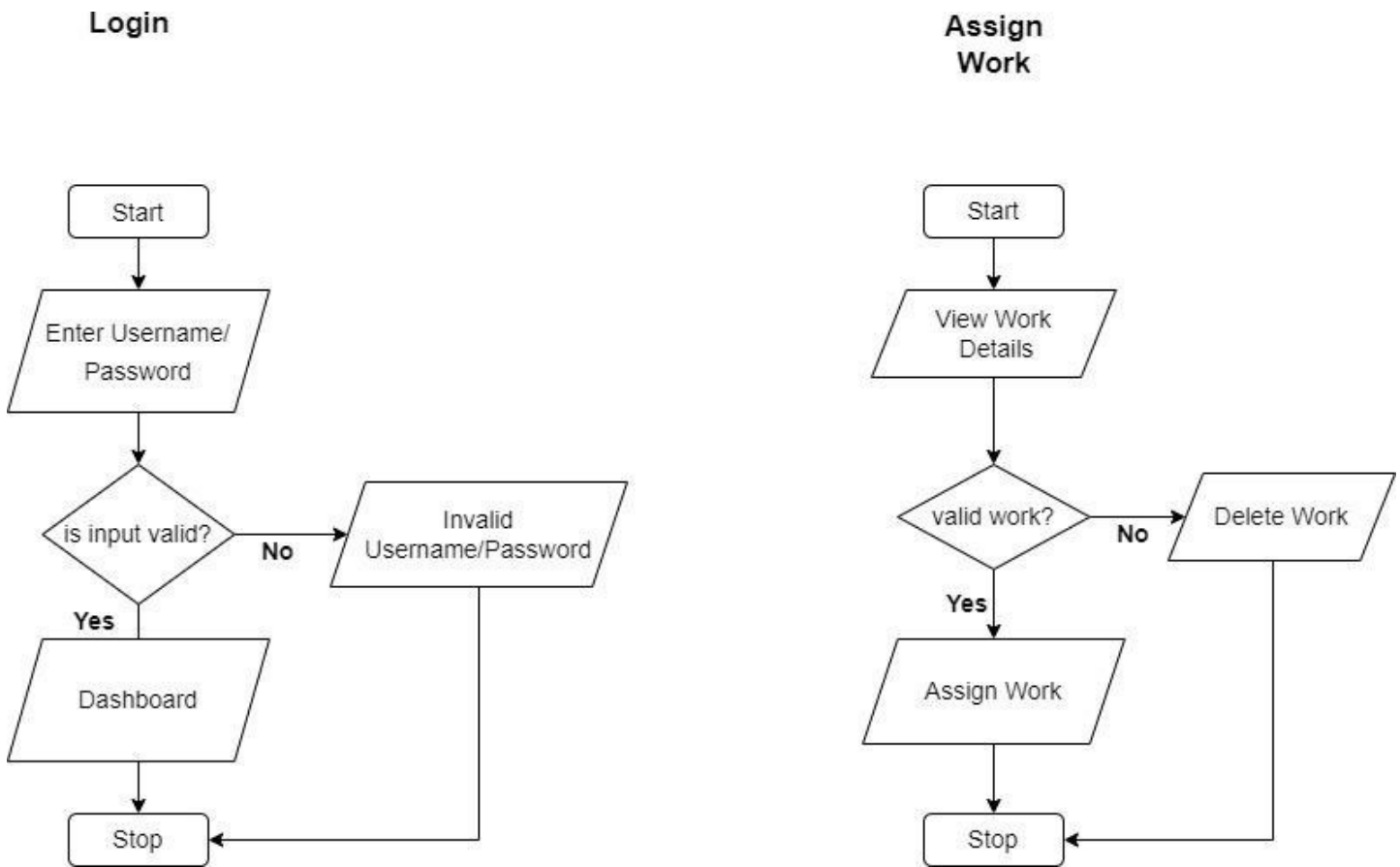
B. Flow Chart -

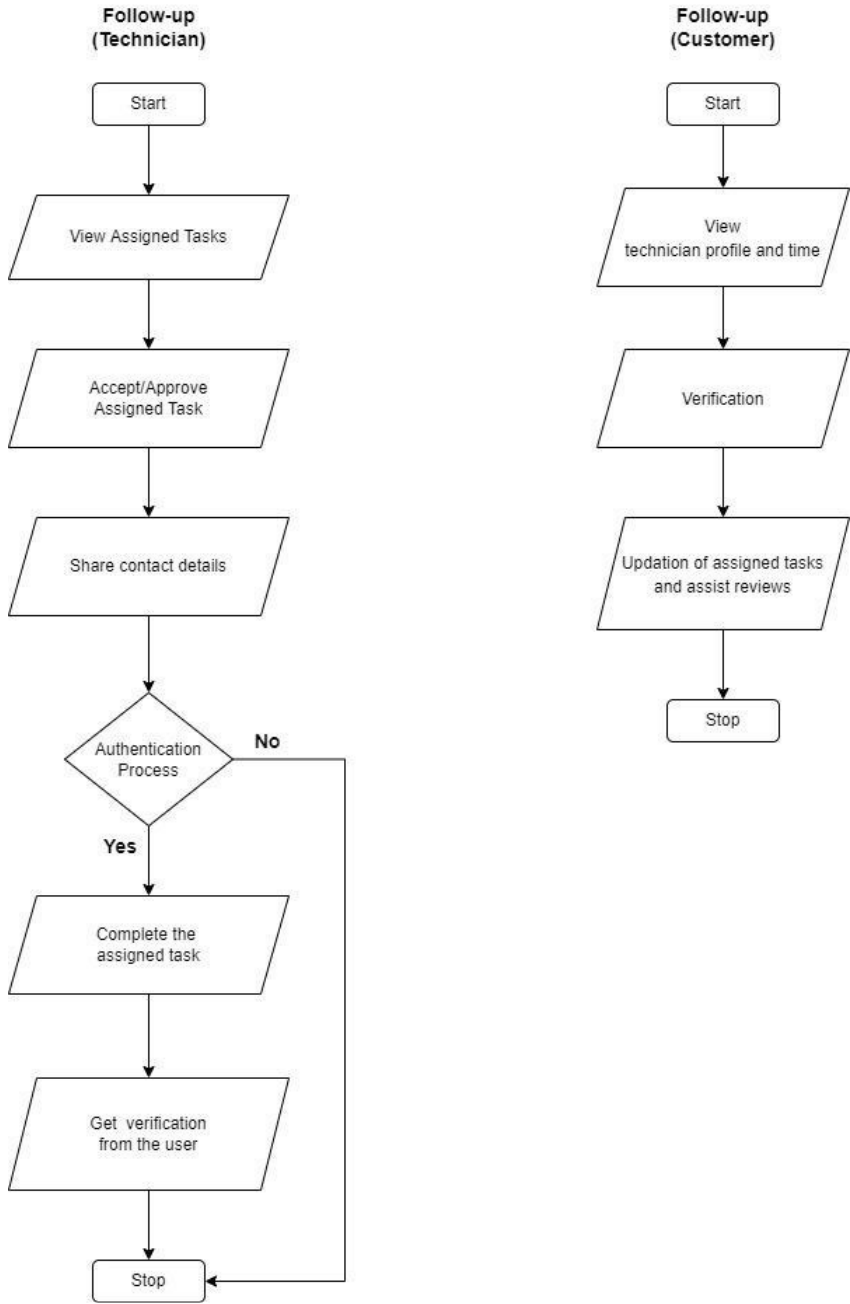

Fig. 2   Flow Chart(a)

Fig. 3   Flow Chart (b)

1) Consumer login - To access the services, consumers must create an account on the website and complete their profile with all the necessary information required for the admin to process their service request. Once the account is created, the user will log in using their correct login credentials. Upon successful login, users will be directed to their personal dashboard, where they can view all relevant information. If the user enters incorrect login credentials, they will be denied access to the portal and will not be able to access the website.

2) Assign work - The admin will have an account on the website that will enable him to view service requests from various consumers. Each consumer will be assigned a unique customer ID that will function as the primary key for their request. Upon logging in, the admin can review the service requests and assign a technician to each customer ID if the request is valid. Alternatively, if a request is invalid, the admin can delete it from the system.

3) Follow-up chart (Technician) - The site will also have accounts for all technicians, each with a profile that includes their name, age, gender, and other relevant information. Technicians can access their dashboard, which will display their assigned tasks, including users' addresses, and scheduled times and dates. If a technician is available and the task is feasible, they can accept the assignment, and their contact details will be shared with the consumer. Upon arriving at the destination, a two-way authentication will take place. Once the task is complete, the user will verify the completion of the work on the technician's profile, marking the end of the task.

4) Follow-up chart (User) - Upon approval of the request, the user will receive a notification including the allocated time, and the assigned technician's contact details will be shared. When the technician arrives at the designated location, a two-way authentication will take place. Once the work is completed to the user's satisfaction, they can update the task status on their profile to "work done." Furthermore, the user can provide feedback, and reviews, or file a complaint based on their experience with the technician.

III. Advantages and Applications

A. Advantages -

1) The use of a website helps to standardize the request process in this system.

2) The requests are centralized in nature in this system.

3) The system enhances user (consumer) and service provider satisfaction.

4) The system offers services in an efficient and user–friendly manner.

5) The system is particularly beneficial for people living in rural areas where maintenance and repair services may not be easily accessible.

6) The system provides users with a unified platform to address all their repair and maintenance needs.

B. Applications -

1) The system emphasizes connecting rural consumers with local technicians.

2) The system offers repair services for electronic gadgets such as refrigerators, televisions, and more.

3) The system tracks and generates reports on customer requests to ensure compliance with their needs.

4) The system assigns technicians based on the type of repair tasks requested by the users and the nature of the problems to be addressed.

5) Facilitates an organization of service work.

6) Clearance of customer's doubts by having a systemized conversation.

7) Enables the tracking, response, and closure of multiple service requests from both customers and employees.

IV. Result

A. Hardware -

Implemented a fingerprint authentication system for the admin to enable a seamless login experience without the need to manually enter a username and password for each login attempt. The components used are :

1) NodeMCU – ESP8266

2) R307 Fingerprint sensor Module

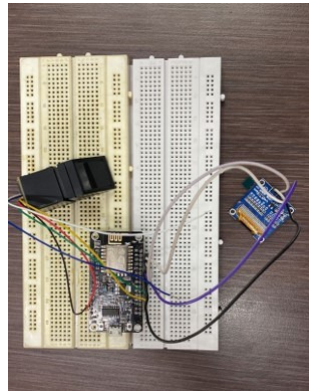3) 0.96" OLED display

4) Breadboard, jumper wires (for testing)

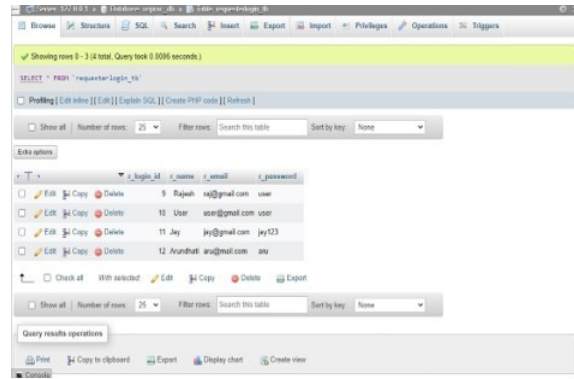**Fig. 4   Hardware Connections for Fingerprint Authentication**

Fig. 5   Data Storage in SQL Database

B. Software -

Developed a multi-page website with distinct interfaces to ensure a smooth and user-friendly experience for visitors navigating through the site.

1) Front End - HTML, CSS, JavaScript, Bootstrap

2) Back End - PHP, MySQL

3) Text Editor - Visual Studio Code

4) Web Server - Apache

Fig. 6   Home Page

Fig. 7   Consumer Login Page
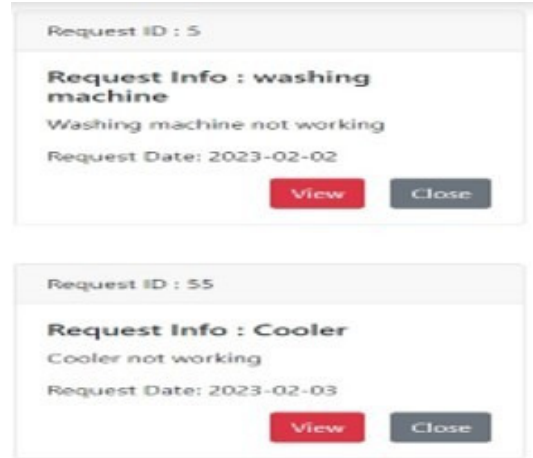

Fig. 8   Admin Login Page

Fig. 9   List of requests from consumers

V. Discussion

The service request management system for electronic gadgets and appliances is a promising solution for managing and solving customer requests in a more organized and efficient way. The system aims to provide a single platform for users to submit service requests, while also streamlining the process for service providers to address these requests. One of the major benefits of this system is its focus on connecting rural area consumers with nearby technicians. This can help bridge the gap in access to maintenance and repair services for people living in remote areas. Additionally, the system can help standardize the request process, which can lead to the improved user and service provider satisfaction. The system's ability to assign specific technicians according to the type of tasks and problems of repair requested by the users is also a significant advantage. This ensures that the right technician with the necessary skills and expertise is assigned to the task, leading to more efficient and effective service delivery. However, one potential challenge in implementing this system is ensuring the availability and reliability of technicians in rural areas. It may also be important to provide training to technicians on how to use the system effectively, to ensure that service requests are addressed promptly and accurately. Overall, the service request management system for electronic gadgets and appliances has the potential to significantly improve the process of addressing service requests, leading to greater customer satisfaction and more efficient service delivery.

VI. Conclusion

In conclusion, the service request management system project for electronic gadgets and appliances is designed to provide a user-friendly platform for consumers to submit service requests for their electronic devices. The system includes features such as user account creation, task assignment to technicians, two-way authentication, and feedback provision to improve customer satisfaction. Additionally, the inclusion of technician accounts with detailed profiles and assigned tasks helps ensure efficient and effective service delivery.

VII. References

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