

Design of Support System using Laravel

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Abstract: Technology is beneficial to a mankind. Internet has become one of the daily basic needs and everything is just a click away where everyone can work with much ease. Moreover, the website has become most popular platforms which can be used in businesses. It helped to increase the sales opportunities and perform numerous functions for the individual to bring more comfort and convenience in their way of living. Support System is one of its kind which can help to support every individual inside the college campus. This was mainly developed to address the problems being faced by both the staff and student related to repair and maintenance of facilities in the college campus. The population has been increasing every year with the increased intake in each programme and this has helped in making the situation worst. Though the complaints are raised and informed to the concerned person, they tend lose the track due to no systematic way to keep records. In the worst case, they forget about it and the problem remain unsolved for a longer time. This happens due to the manual process being practiced in current scenario. With the system, all the resident of the college can be able to complain or raise their issue from system thereby bypassing unnecessary procedure like in manual process. Moreover, the concerned person can see the issue through the system which can help them to keep track of issues being solved and raised. The paper presents the technical aspect involved during the design and development of the application.

Keywords: Website, Application, System, Laravel, Complaints.

I. INTRODUCTION

With the advancement of technology, use of website and web application has become essential for any organization to survive in this information age. Everything has to be automated to replace the manual process that is monotonous as well as time consuming. However, with the use of system, advantages such as systematic record keeping, auditing and more convenience for the users can be achieved. JNEC Support System is a web-based application that is developed to help to address the issues being faced by the residents of the college. It was developed with the aim to minimize the manual process of the existing system. This is because, users have to go through many procedures to actually reached their complain or issue to the concerned person. Moreover, the system can be used for record keeping and also for keeping track of issues being solved and all. This feature can be useful specially for the person working and supervisors to know the status of all the issues being raised.

A. Problem Statement

Given the increasing number of students intake every academic year, the issues of repair and maintenance of lighting, water and basic things are expected. However, the process of informing the concerning person takes time as it has route through many unnecessary procedures being a manual system. If the students have to complain about the issues they have faced, it has route through councilors and it should be further routed through management. Given this long process, issues remained unattended for more than expected completion date. Moreover, there is no systematic ways to keep records which can be used as a reference for official purposes or for auditing by the supervisors of the concerned person.

B. Proposed System

JNEC support system is web-based application that helps to support the individual raised the problem being faced at their residence or nearby. The system should provide platform for the users to raise the issues by bypassing the management procedures to minimize the time taken to really solve their issue. Users of the system can be categorized into two types, someone with issue and concerned person attending to that problem. If someone has issue, he can register and post the complaint with images with necessary. On the other hand, the concerned person will be able to view the issue being raised and work on it based on the priority. As the issues are solved, they can even change the status into complete status which can be made available for all. Moreover, the record can be maintained in a system which can be used for official purposes or auditing purposes. With this, the researchers expect to minimize the issue being queued without addressing for longer time.

II. LITERATURE REVIEW

Internet usage has increased hugely within the past few decades [1]. Websites became the one among the foremost necessary public communication portals for the companies and organizations. Correct style of website has become a crucial component to extent usability of the website and positively influence visitant retention. JNEC support system is website that is design dynamically to help every individual in the campus. The website is developed using Laravel which is free open-source PHP web framework. Laravel framework was created by Taylor Otwell with intention to assist web developers build complicated coding, quicker and better [2]. It eases some of the commonly executed tasks like authentication, routing, sessions, caching and plenty of others for better and faster development of the web application [3].

The development of complaints is often thought-about a truth of life with which organisations have to deal with one way or another. From the user's perspective, it is often argued that grievances behaviour ought to be expedited, taken seriously and eventually inspire organizations to keep company with higher resolution. This is often thought to be a standard data in complaint management system. A lot of structurally, the grievance can be place to begin for analysis, improvement or elimination of issues. More structurally, the complaint could be starting point for analysis, improvement or elimination of problems. The complaint management method involves six steps that organizations will use to influence effective service recovery: "Encourage complaints as a quality improvement tool; Establish a team of representatives to handle complaints; Resolve customer problems quickly and effectively; Develop a complaint database; Commit to identifying failure points in the service system; and Track trends and use information to improve service processes" [4].

Complaints provided by each individual is of great significance for the standard management method because as it can be often used to correct and study weaknesses in quality of the system. Individuals become discontented once service performances aren't up to their expectations. Understanding the potential sources of discontentment and individual reactions to negative things are obligatory needs in the design of effective service recovery strategies [5]. People responses to numerous issues aren't distinct. Everyone has specific expectations on how the corporate ought to manage the complaints and on what compensation should be acceptable to solve the difficulties quicker and in easier way [5]. The project aimed to determine individual satisfaction and trust through quality complaint management method.

There are also widely-used open-source support ticket system known as osTicket. It flawlessly integrates inquiries created via email, phone and web-based forms into a straightforward easy-to-use multi-user web interface. Manage, organize and archive all the support requests and responses in one place while providing customers with responsibility and responsiveness they merit. However, the system will solely be deployed in the cloud and is appropriate for small and midsize enterprise customers [6]. Hence, the project aims to provide similar platform with better features and scopes in a user-friendly way whereby every individual in the campus can easily use the system.

The similar platform, JNEC Helpdesk Ticketing System was implemented and integrated in the college website. However, only some staff and students make use of that system, this could be because they are not aware if this type of system is available for use. JNEC Support System is designed mainly to solve the issue by adding more features so that it can be addressed within required duration. Moreover, if the complaints are made private, students and staff will not face problems in raising their issues that they face as well the problems can be solved faster by the responsible person as their progress will be shown and updated regularly.

III. METHODOLOGY

For the system development, the researcher has used waterfall model. This is because, the phases of system development were fully completed and followed the sequential order till its completion. Some of the phases used are as follows:

A. Requirement Gathering

The researchers have collected the requirement through use of different method such as team meeting, brainstorming, interviewing the users and literature review.

B. Requirement Analysis

The collected requirement was thoroughly checked and unnecessary requirement were omitted and final requirement produced were taken as a basis for design purposes.

C. Design

In this phase, the researchers have started with data modelling which shows the overall design of database that will be implemented in a system. The researchers have also done process modelling which mainly covers the data flow within the system. Finally, the interface using mock plus were designed which can be used as a reference during the implementation.

D. Implementation or Coding

For the implementation purposes, the researchers have used PHP framework, Laravel, Bootstrap, JavaScript and CSS.

E. Testing

After the completion of implementation part, unit testing and integration testing were conducted to verify and validate the system's workability.

IV. DESIGN

A. Data Modelling

It mainly shows the design of database which can be used to store the record or data. Following figure, Fig. 1 shows the ER Diagram of the system.

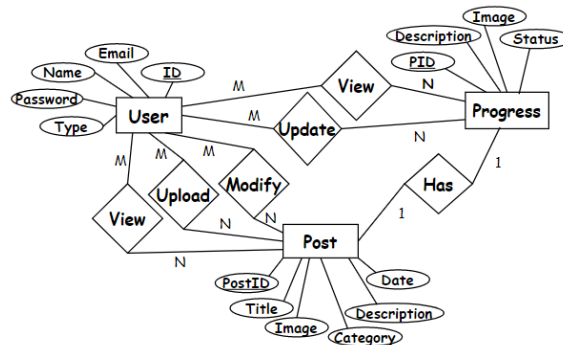


Fig. 1 ER Diagram

B. Process Modelling

The design mainly focused on the flow of data in the system. The figure, Fig. 2 shows the process model of the system.

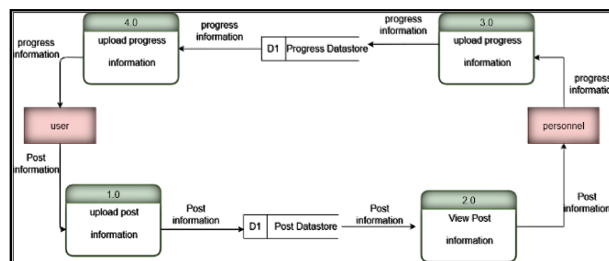


Fig. 2 Process Model

C. Backend Interface

The interface will be used by the administrator, concerned person and supervisors to view the complaint and issues raised as well as status of those issues. Following figure, Fig. 3 is the backend interface of the system.

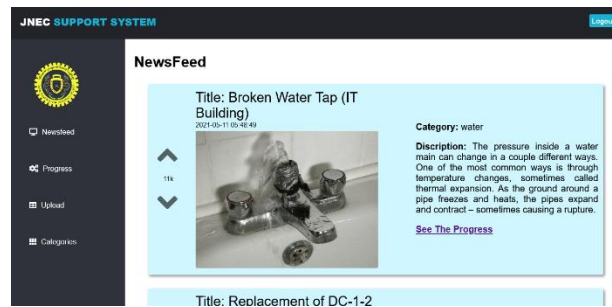


Fig. 3 Backend Interface

D. Frontend Interface

The interface will be available for use to the users such as students and staff with complaint or issues to be solved.

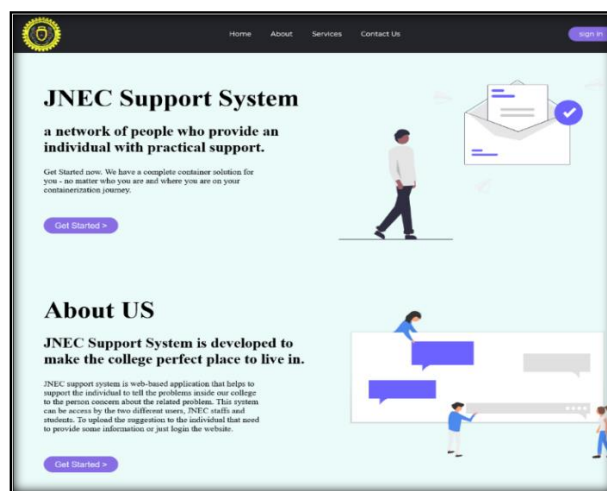


Fig. 4 Frontend Interface

V. CONCLUSION

The research project was mainly done to solve issues being faced by the residents of the college. This was motivated by the limitation of existing system. The process of lodging a complaint has to be done manually and amount of time taken to actually resolve the issues were more. This can be also because of the fact that supervisors and management are not able to track the status of issues being solved in the existing system. However, with the new system in place, those issues were expected to solve in the stipulated time. Moreover, the system can be used to maintain records which can be used either for official purposes or auditing purposes. The system was develop using PHP framework, Laravel and MySQL were used for database management purposes.

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