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COMPUTER SYSTEMS COMPLAINT TRACKING SYSTEM – WEB APPLICATION

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Abstract - *The Computer Systems Complaint Tracking System – Web Application is intended to enhance and automate the management of complaints within organizations. Conventional methods of handling complaints, including manual entries via phone calls, emails, or paper records, frequently lead to inefficiencies, delays, and challenges in monitoring the progress of repair requests. This initiative seeks to automate workflows, minimize manual involvement, and establish a centralized platform for the effective management of IT-related complaints.*

The suggested system enables users to submit complaints, monitor their status in real-time, and receive automated updates regarding their progress. It includes functionalities such as automatic ticket assignment, priority-driven complaint management, and analytical reporting tools for performance evaluation. Furthermore, it improves communication between users and IT staff, facilitating quicker resolution of issues and greater transparency. By incorporating data analytics and reporting features, the system offers essential insights into persistent system problems, assisting organizations in making informed choices to enhance the reliability of their IT infrastructure.

This online application greatly decreases response times, enhances user satisfaction, and streamlines the allocation of IT resources. It is designed to be scalable and flexible, catering to organizations of various sizes while providing a secure and organized method for tracking complaints. Potential future upgrades may involve AI-powered predictive maintenance and support for mobile applications, which would further boost efficiency and accessibility.

Keywords: *Complaint Tracking System, real-time monitoring, Centralized Platform, Workflow automation*

1.INTRODUCTION

In numerous organizations, handling complaints regarding computer systems has remained a continual challenge. Historically, complaints were recorded manually via phone calls, emails, or paper-based logs, resulting in inefficiencies, delays, and challenges in monitoring the resolution process. The growing reliance on technology for everyday functions has created a need for an effective complaint tracking system. To tackle these issues, the Computer Systems Complaint Tracking System – Web Application has been proposed, offering a streamlined, automated, and user-friendly solution for managing complaints.

The Test and Repair Centre (TRC) plays a crucial role in managing and maintaining computer systems within the institution. Ensuring that hardware, software, and peripheral components function optimally is essential for seamless institutional operations. However, the current system for tracking complaints and repairs relies on manual processes, such as paperwork and basic spreadsheets, which are prone to inefficiencies and errors. This lack of automation hinders productivity, delays issue resolution, and reduces transparency in the repair workflow

2. NEED FOR THE PROJECT WORK:

The primary objective of this project is to develop an efficient and automated complaint tracking system that optimizes the workflow of the TRC department. The system will facilitate seamless request submission by allowing faculty, staff, and students to log repair issues via a user-friendly web portal. It
will implement a structured ticketing mechanism that assigns unique tracking numbers to repair requests, ensuring that all issues are monitored and resolved within a timely manner. The system will also establish role-based access, enabling administrators to assign tasks, technicians to update repair statuses, and requesters to track their submissions.

Additionally, automated notifications will provide real-time status updates, ensuring transparency throughout the repair process. The system will enhance reporting and analytics by automating data collection on maintenance trends, technician performance, and spare parts usage. By integrating an inventory management system, it will streamline the tracking of spare parts, ensuring proper documentation of replacements and stock levels. Overall, this project aims to transform the existing manual system into an intelligent, data-driven platform that minimizes downtime, improves accountability, and enhances user experience for all stakeholders involved in the repair and maintenance process.

The main goal of this project is to automate TRC's processes to overcome these obstacles. The suggested solution will function as a centralized platform for scheduling maintenance, expediting system testing, and handling repair requests. It will produce thorough reports for improved decision-making and accountability, as well as real-time visibility into the department's activities.

3. LITERATURE SURVEY

Julia Meik et al., 2014 - "Complaining Customers as Innovation Contributors" examines a distinct and little-studied facet of customer integration in service innovation. It looks at how businesses might use information gleaned from client complaints to spur service innovation. By combining ideas from two important fields—customer complaint management and service innovation management—the study emphasizes how complaints may be used as useful input for creating and enhancing services, in addition to being a form of feedback. This method offers a fresh viewpoint on leveraging consumer discontent as a tactical advantage for innovation. [7]

Yooncheong Cho et al., 2002 - "An Analysis of Online Customer Complaints: Implications for Web Complaint Management" emphasizes how important it is to manage customer complaints in online settings. In order to deliver outstanding online customer service, it investigates the combination of web-based customer complaint management and electronic customer relationship management, or e-CRM. The study provides actionable lessons for organizations in the digital age by highlighting the significance of swiftly addressing customer complaints in order to develop long-term customer relationships, increase satisfaction, and foster trust.[11]

Osman Nasar & Enayat Alkhider, 2015 - "Online Complaint Management System" presents a system intended to simplify the handling of consumer complaints. The system's goal is to increase the efficiency of complaint submission, coordination, tracking, and monitoring. It also gives businesses a strong tool to track reoccurring problems, pinpoint trouble spots, and improve overall complaint handling. By emphasizing these elements, the method assists businesses in raising customer happiness and service quality. [2]

Jin-Lan Liu et al., 2019 - "The Study of Customer Complaints Management Based on System Dynamics: Modelling and Simulation" investigates the dynamics of customer complaint management. The study looks at how important variables including customer happiness, loyalty, repeat business, complaint voicing rates, and a company's capacity to manage complaints are related to one another. The study offers insights into how enhancing complaint management might improve customer retention and overall business performance by examining these links. [9]

4.OBJECTIVES AND METHODOLOGY

The primary objective of this project is to develop an efficient and automated Computer system complaint-tracking system that optimizes the workflow of the TRC department. The system will facilitate seamless request submission by allowing faculty, staff and students to log repair issues via a user-friendly web portal. It will implement a structured ticketing mechanism that assigns unique tracking numbers to repair requests, ensuring that all issues are monitored and resolved within a timely manner. The system will also establish role-based access, enabling administrators to assign tasks, technicians to update repair statuses, and requesters to track their submissions. Additionally, automated notifications will provide real-time status updates, ensuring transparency throughout the repair process.

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One of the key goals of this project is to automate the complaint submission and tracking process. Faculty, students, and staff should be able to log repair issues easily through a web portal, providing all necessary details such as system type, problem description, urgency level, and contact information. This will eliminate the need for paper-based records and spreadsheet tracking, reducing the risk of errors and misplaced requests. Additionally,

each complaint will be assigned a unique ticket number, ensuring structured tracking from submission to completion.

5.PROPOSED WORK MODULES

The User Management Module in the Computer Systems Complaint Tracking system is designed to handle user authentication, authorization, and role-based access control efficiently. The system includes three roles: Admin, User, and Technician, each with distinct responsibilities. The Admin oversees system operations, assigns tickets, approves spare part requests, and generates reports. The User (faculty, student, or staff) can create complaint tickets, track their progress, and communicate with technicians.

The Technician is responsible for viewing assigned tickets, updating repair status, requesting spare parts, and closing completed tickets. To ensure secure access, authentication is implemented using JWT (JSON Web Token), which is generated upon successful login and sent to the client-side for subsequent authentication requests. The token is stored on the client-side and included in the authorization header for each API request, ensuring that only authenticated users can interact with the system.

RESULTS AND DISCUSSIONS

One of the most notable results is the reduction in ticket resolution time. With the automated ticketing system, users can raise complaints quickly, and the admin can efficiently assign them to available technicians. The system's ability to track the ticket status in real-time allows users to stay informed, reducing frustration and uncertainty. The technician approval process ensures that only valid complaints are worked on, and technicians can log their worked hours and actions taken, providing a transparent resolution process. The feedback mechanism introduced in the system has also enhanced service quality, allowing users to rate the resolution process and provide insights into technician performance

REFERENCES

[1] H. Ro and J. Wong, "Customer opportunistic complaints management: A critical incident approach" Int. J. Hosp. Manag., vol. 31, no. 2, pp. 419–427, 2012, doi: 10.1016/j.ijhm.2011.06.017.

[2] A. Filip, "Complaint Management: A Customer Satisfaction Learning Process" Procedia - Soc. Behav. Sci., vol. 93, pp. 271– 275, 2013, doi: 10.1016/j.sbspro.2013.09.188.

[3] R. Razali, K. N. Abd Halim and K. Jusoff, "Quality Improvement of Services in Universiti Teknologi Mara Pahang from a Management Perspective." Management Science & Engineering Vol.5, No.1, 2011, pp. 71-80.

[4] M. A. Manuhutu and L. J. Uktolseja, "Design and Implementation of Online Students Complaint (Case Study of English Study Program at Victory University, Sorong)," Int. J. Comput. Sci. Eng., vol. 6, no. 1, pp. 228–232, 2018, doi: 10.26438/ijcse/v6i1.228232.

[5] K. Coussement and D. Van den Poel, "Improving customer complaint management by automatic email classification using linguistic style features as predictors" Decis. Support Syst., vol. 44, no. 4, pp. 870–882, 2008, doi: 10.1016/j.dss.2007.10.010.

[6] E. A. E. A. Abd El-Sadek Afify, A. E. F. A. Hegazy, and M. A. K. El-Sayed, "A model for Customer Complaint Management System using SOA," Recent Res. Comput. Sci. - Proc. 15th WSEAS Int. Conf. Comput. Part 15th WSEAS CSCC Multiconference, no. March, pp. 291–296, 2011.

[7] S. C. Henneberg, T. Gruber, A. Reppel, B. Ashnai, and P. Naudé,
"Complaint management expectations: An online laddering analysis of small versus large firms," Ind. Mark. Manag., vol. 38, no. 6, pp. 584–598, 2009, doi: 10.1016/j.indmarman.2009.05.008.