



---

## Ticket Management System

*Sindhuri P, Kamalesh B, Dharun T, Boshapranesh M, Praveen Kumar K C.*

*Dhirajlal Gandhi College Of Technology, Salem.*

---

### ABSTRACT

The Ticket Management System is a comprehensive software solution designed to streamline and optimize ticketing processes for various industries and organizations. It provides a centralized platform to manage and track tickets, ensuring efficient communication, swift issue resolution, and improved customer satisfaction. This system offers several key features to enhance ticket management. Firstly, it facilitates ticket creation, enabling users to generate tickets easily, either manually or automatically through integration with different channels such as email, chatbots, or web forms. The system captures essential information like ticket category, priority, and relevant details, ensuring accurate classification and assignment. Once created, tickets are efficiently routed to the appropriate departments or personnel based on predefined rules or customizable workflows. This automated routing ensures that tickets reach the right individuals promptly, reducing response times and avoiding unnecessary delays. Assigned personnel receive notifications and reminders, enabling them to address tickets in a timely manner. The Ticket Management System provides a centralized dashboard for ticket tracking, enabling users to monitor the progress of individual tickets and gain insights into overall performance. Real-time metrics and analytics help identify bottlenecks, measure response times, and assess agent productivity, facilitating data-driven decision-making and continuous improvement. Effective communication is crucial in ticket management, and the system supports seamless collaboration among team members. It allows for internal notes, comments, and attachments on tickets, promoting knowledge sharing and facilitating effective resolution. Customers can also track their tickets, receive updates, and provide feedback through a user-friendly self-service portal, enhancing transparency and customer satisfaction. Furthermore, the system offers robust reporting capabilities, generating comprehensive reports on ticket volume, response times, resolution rates, and customer satisfaction metrics. These reports aid in performance evaluation, identifying trends, and making informed decisions for resource allocation and process optimization. In summary, the Ticket Management System optimizes ticketing processes, ensuring efficient communication, swift issue resolution, and improved customer satisfaction. By centralizing ticket management, automating workflows, and providing insightful analytics, this system empowers organizations to deliver exceptional customer service and streamline their operations.

Keywords: Ticket Management, Analytics, User friendly.

---

## 1. Introduction

Ticket Management System is a software solution designed to optimize the management of customer requests, issues, and inquiries, commonly referred to as tickets. The system provides a centralized platform for creating, tracking, assigning, and resolving tickets efficiently and effectively. Organizations across different industries use ticketing systems to manage their customer support and service operations. In the absence of such systems, managing customer tickets can be a tedious and error-prone task, leading to delays, miscommunication, and customer dissatisfaction. The Ticket Management System provides a streamlined and efficient process for managing customer tickets, ensuring that all requests are addressed promptly and accurately. With this system, organizations can automate ticket workflows, manage ticket priorities, monitor ticket status, and generate reports to gain insights into their support operations' performance. The system is designed to improve communication among support teams, promote collaboration, and enhance customer satisfaction by providing timely and accurate responses. The Ticket Management System is a valuable tool for organizations that are looking to optimize their support operations and deliver exceptional customer service. In today's fast-paced business landscape, organizations face the challenge of effectively managing an increasing volume of customer requests, service inquiries, and technical issues. A manual approach to ticket management often results in inefficiencies, such as delays in response times, ticket misplacement, and difficulties in tracking and prioritizing requests. These inefficiencies can lead to frustrated customers, reduced productivity, and negative impacts on the overall customer experience. To address these challenges, the Ticket Management System offers a comprehensive solution that revolutionizes the way organizations handle customer tickets. By leveraging technology and automation, this

system streamlines and centralizes the entire ticket management process, providing a seamless experience for both customers and support teams. Furthermore, the Ticket Management System offers robust reporting and analytics capabilities. Detailed reports can be generated to analyze ticket volumes, response times, resolution rates, and customer satisfaction metrics. These insights help organizations identify trends, assess agent performance, and make data-driven decisions to optimize their support operations and allocate resources effectively. In conclusion, the Ticket Management System is a powerful tool for organizations seeking to enhance their ticket management processes. By automating workflows, improving communication, and providing valuable analytics, this system enables businesses to deliver efficient and exceptional customer support, resulting in higher customer satisfaction, increased productivity, and improved overall operational efficiency.

---

## 2. System Design

### 2.1 Existing System:

As The existing ticket management system in place is a manual process that involves users sending emails or making phone calls to report their issues or requests. The support team then manually logs these requests into a spreadsheet or a ticket tracking system, assigns them to the relevant support staff, and communicates the status updates back to the users via email or phone. This process is time-consuming, error-prone, and lacks visibility into the status of requests for both users and support staff.

Jira:

Jira, developed by Atlassian, is a widely adopted ticket management system designed for agile project management. It offers robust features for issue tracking, task management, and project collaboration. Jira allows teams to create, prioritize, and assign tickets, track their progress through customizable workflows, and generate reports to monitor project performance. It integrates well with other Atlassian tools, making it a popular choice for software development and project management teams.

Trello:

Trello is a user-friendly ticket management system that uses a visual board-based approach to manage tasks and tickets. It utilizes boards, lists, and cards to represent tasks and their status. Trello enables teams to create tickets, assign them to team members, set due dates, add labels, and track progress through drag-and-drop functionality. It is particularly useful for smaller projects or teams that prefer a simpler and intuitive interface.

### 2.2 Proposed System:

The The proposed ticket management system is an online platform that automates the entire ticketing process, from request submission to resolution. The system will provide users with an online portal to submit their requests and track their status updates in real-time. The support staff will have a dashboard to manage and prioritize incoming requests, assign them to the relevant support staff, and communicate with users within the platform. The system will also provide advanced reporting and analytics features to track support team performance, identify bottlenecks, and optimize the ticket resolution process. The proposed system will provide a more efficient, transparent, and streamlined process for both users and support staff.

#### Advantages of proposed system:

**Automation:** The proposed system automates the entire ticketing process, from request submission to resolution, reducing the time and effort required to manage requests.

**Error-free:** The proposed system reduces the potential for human errors by automating the ticket creation, assignment, and resolution process.

**Real-time visibility:** The proposed system provides real-time visibility into the status of requests for both users and support staff, increasing transparency and reducing communication gaps.

**Advanced reporting:** The proposed system provides advanced reporting and analytics features to track support team performance, identify bottlenecks, and optimize the ticket resolution process, improving overall efficiency and effectiveness.

Overall, the proposed system offers a more efficient, transparent, and streamlined process for both users and support staff, reducing the time and effort required to manage requests and improving the overall quality of support services provided.

### 3. System Architecture

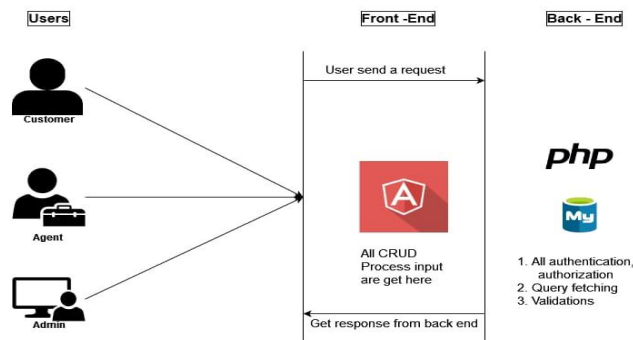


Fig. Architecture diagram of System

A ticket management system typically involves the use of various components and technologies to handle the process of creating, tracking, and resolving tickets or issues reported by users.

#### User Interface:

Web-based interface or mobile application for users to submit tickets and interact with the system. UI components for viewing ticket details, updating ticket status, and adding comments or attachments.

#### Ticket Creation and Submission:

User submits a ticket through the user interface. Input validation and data sanitization to ensure the ticket data is accurate and secure. Ticket metadata and description are stored in a database.

#### Ticket Storage:

Database management system (e.g., MySQL, PostgreSQL) to store and manage ticket data. Ticket information includes attributes like ticket ID, status, priority, assigned agent, user details, timestamps, etc.

#### Ticket Routing and Assignment:

Rules-based or automated mechanism to route tickets to the appropriate agents or teams. Assignment algorithms can consider factors such as agent availability, workload, expertise, or ticket priority.

#### Agent Interface:

Web-based or desktop application for agents to view and manage assigned tickets. Features for updating ticket status, adding comments, assigning tickets to other agents, etc.

#### Ticket Tracking and Updates:

Mechanism to track ticket progress and send notifications to users and agents. Users receive updates on ticket status changes, comments, or resolutions via email, notifications, or the user interface. Agents receive notifications for new tickets, assignments, and updates.

#### Ticket Escalation and SLA Management:

Service Level Agreement (SLA) monitoring to ensure tickets are resolved within defined timeframes. Escalation rules to escalate tickets to higher-level support or management if SLAs are not met.

#### Reporting and Analytics:

Data analysis and reporting capabilities to generate insights about ticket trends, agent performance, resolution times, etc. Dashboards or reports for managers to monitor system metrics and identify areas for improvement.

### 4. System Study

#### 4.1 User Registration And Authentication:

This module will handle user registration, login, and authentication processes. It should include features such as user account creation, password management, and user role assignment. Users should be able to securely authenticate themselves and access the system based on their assigned roles.

#### 4.2 Database Module:

The database module is a crucial component of a ticket management system, responsible for storing and managing data related to tickets, users, agents, and system configurations. This report focuses on the design and implementation of the database module within the ticket management system.

#### 4.3 Ticket Creation And Management:

The purpose of the ticket creation and management module is to provide users with a streamlined process to report issues, requests, or

inquiries. It facilitates efficient ticket handling, assigns tickets to appropriate agents, tracks their progress, and ensures timely resolution and customer satisfaction.

#### 4.4 Reporting And Analytics:

This module will provide comprehensive reporting and analytics features to monitor and evaluate the ticket management system's performance. It should include functionalities such as generating reports on ticket status, average resolution time, agent performance, and ticket category analysis. The module can also incorporate data visualization tools to present the information in a clear and understandable format.

---

### Acknowledgements

We would like to express our deep and sincere gratitude to professor Ms.P.SindhuriM.E., for giving the opportunity and guidance throughout this research.

---

### Conclusion

Implementing a ticket management system involves careful consideration of various components such as requirements gathering, database design, user interface, ticket lifecycle management, authentication, notifications, search and reporting, integration, performance and scalability, security, testing, deployment, and maintenance. By addressing these aspects, you can develop a robust and efficient ticket management system that enhances the overall efficiency and effectiveness of handling customer or internal support requests. The development of a ticket management system is crucial for organizations that handle a large volume of customer inquiries and IT service requests. Such a system enables organizations to efficiently manage and prioritize support requests, improve response times, and enhance customer satisfaction. Through the literature survey, we have identified various approaches and technologies that can be used to design and implement a ticket management system, depending on the organization's specific needs.

### References

- 
- [1] "Ticket Management System for IT Help Desk," by R. Vetrivel and S. Malarvizhi, in the International Journal of Advanced Research in Computer Science and Software Engineering, Vol. 6, Issue 6, June 2016.
  - [2] "A Review of Ticket Management Systems," by N. M. Abu Ali and A. S. Al Sharif, in the Journal of Information Systems Engineering & Management, Vol. 3, Issue 1, 2018.
  - [3] "Design and Development of Web-Based Ticket Management System for Academic Institutes," by N. P. Patil and V. D. Baviskar, in the International Journal of Scientific & Engineering Research, Vol. 8, Issue 6, June 2017.
  - [4] "Design and Implementation of an Online Ticket Management System," by F. A. Olajide and O. A. Oyelade, in the International Journal of Advanced Computer Science and Applications, Vol. 8, No. 2, 2017.
  - [5] "Design and Development of a Ticket Management System for a Small Business," by B. C. Akpan and I. E. Umoren, in the Journal of Emerging Trends in Computing and Information Sciences, Vol. 4, No. 5, 2013.
  - [6] "An Agile Approach to Ticket Management Systems" by R. Kaur and A. Kumar
  - [7] "A Comparative Study of Ticket Management Systems" by S. Singh, et al.
  - [8] "Design and Implementation of a Ticket Management System for a Help Desk" by M. Sabir and R. Muhammad
  - [9] "An Intelligent Ticket Management System for Service Desk Operations" by M. Z. Islam and M. A. Bhuiyan
  - [10] "A Ticket Management System for Incident Management in IT Service Management" by A. Iqbal and S. S. Ahmed