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QuickFix: Automated Ticket Management Platform

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Abstract

For the growing number of software issues and service requests reported by customers, IT companies must find a well-organized and effective way to cope. The Helpdesk Ticketing System meets this need by providing a web-based solution that is centralized and enables users to submit tickets easily and track their progress. It also auto-updates when necessary, thus bridging the gulf between clients and the company, ensuring more smoothly provided service. In the past, tickets were often opened by email, which can very easily lead to confusion and inefficiency. With the Helpdesk Ticketing System, every small worry can still be logged and dealt with quickly -- thus improving the overall efficiency of the whole process. No matter where a user or customer is, then the system can be used to access. Another advantage is that it will cut down on how many tickets are issued each day which in turn keeps down worker's income. Moreover, we can make contributions by Article Lin Ho (above). The system basically brings together issues, their solutions and ticket administration all into one, thus helping greatly reduce development as well as support expenses. With an effectiveness level comparable to that of the most advanced space technology, the system creates a virtual space for resolving issues. It also helps maintain undisturbed IT work and brings gradual improvements to support service

INTRODUCTION

In the modern digital age, the helpdesk ticketing system has become one of the most popular and widely used tools for managing customer support. Essential tools in organizations for addressing day-to-day IT-related problems. Typically, inquiries were addressed through email, which turned out to be a slow and inefficient method. Nowadays, most businesses have implemented centralized IT helpdesk ticketing systems, which greatly enhance efficiency and responsiveness. These systems, as research indicates, can lead to a 15% decrease in operational expenses and a 40% increase in user satisfaction. Productivity rises by 31%. As businesses heavily depend on it for smooth operations, technical support has become extremely crucial for

managing various technical concerns, including network issues, internet connectivity, and software or hardwareproblems.

To enhance efficiency, a three-tier architecture consisting of users, coordinators, and engineers can expedite ticket resolution, resulting in shorter turnaround times. Organizations leverage cutting-edge technologies, including machine learning and deep learning, to automate ticket triage, recommend assignees or groups, and draw upon similar tickets for problem-solving. The helpdesk ticketing system assists in resolving system issues, maintaining systems, and plays a crucial role in ensuring business continuity and operational control across enterprises of various sizes.

Objective

The primary objective of this research is to design and develop a **Help Desk Management System** that streamlines the process of reporting, managing, and resolving user issues in an organization or institution. This system aims to provide:

· A centralized platform for users to raise support tickets related to technical or service-related issues. · An automated ticket tracking system to monitor the status and progress of each issue. · A user-friendly interface for both users and administrators to ensure easy communication and faster resolution**.**

· A basic AI-based chatbot integrated into login and support pages to assist users in raising tickets and answering common queries.

· Improved response time and efficiency in handling user complaints by reducing manual intervention. · A record-keeping mechanism for analyzing past issues to help in better decision-making and preventive maintenance.

This research focuses on enhancing the support process through automation, minimizing downtime, and ensuring user satisfaction.

LITERATURE SURVEY

1. Traditional Support Mechanisms
   - · Analyzed the methods and practices of organizations in the past or present. Address questions through traditional.
   - · Interactions email, or telephone communication
   - · Emphasize the benefits: a clear and organized approach, ease of understanding Monitoring inquiries, sluggish response times, and a deficiency in account management. Unreliability:
2. Advancement of Helpdesk Solutions
   - · Highlighting the emergence of web-based helpdesk solutions as a solution to the problems.
   - · Reference well-known platforms like Zen desk, Fresh desk, and Service Now, highlighting the features that contributed to their widespread adoption, such as automation, real-time tracking, and role-based access.
3. Essential Features and Advantages
   - · Summarize findings from academic and industry research that have assessed helpdesk systems. Include metrics such as:
   - · A15–30% decrease in support expenses •
   - · A 30–40% increase in customer/user satisfaction
   - · We will not tolerate any method that does not include line Breaks
4. Helpdesk System Architectures

In a single-tier helpdesk model, all support issues, regardless of their complexity, are managed by a single group of technicians. This can lead to quicker resolutions for simple. Challenges but frequently leads to ineffective utilization. Experienced personnel and extended resolution for intricate problems. In contrast, a multi-tier helpdesk model (such as the 3-tier system) separates support into levels based on expertise, with tier 1 addressing basic inquiries, tier 2 managing more technical issues, and tier 3 handling advanced or specialized problems. This structure enhances operational efficiency by matching tasks to the appropriate skill levels, making it more suitable for larger organizations with varied support requirements.

5. Integration with Contemporary Technologies

Showcasing the utilization of machine learning (ml) and deep learning (dl) in support systems for:

· recommending solutions based on previous similar inquiries
· prioritizing tickets based on their content and urgency
· include references to enterprise systems utilizing AI/ML for improved performance, such as IBM Watson and Microsoft dynamics 365

6. Shortcomings in Current System

· Highlight the lack of personalized ticket routing or specialization mapping in some existing systems. · We will not tolerate any unresolved inquiries, regardless of the method used.

This emphasizes the importance of your proposed system, which utilizes role-based coordination and specialization to expedite the resolution process.

METHODOLOGY

1. System Design Approach

The system is created using the agile approach, with different stages such as gathering requirements, designing the system, developing it, testing it, and finally deploying it.

2. System Architecture

The proposed three-tier architecture:

· **User Tier:** End users raise tickets.
· **IT Coordinator Tier:** Reviews and assigns tickets to relevant engineers.
· **Engineer Tier:** Resolves the ticket within a given timeline or escalates it.

3. Modules of the System

Functional modules:

· **User Module:** Login, raise ticket, view status.
· **IT Coordinator Module:** View all tickets, assign to appropriate engineer.
· **Engineer Module:** View assigned tickets, resolve them, update status.
· **Admin Module:** Manage users, permissions, and system settings.

4. Tools and Technologies Used

Programming languages, platforms, and frameworks:

· **Frontend**: HTML, CSS, JavaScript
· **Backend:** Python (Django), jet_Django
· **Database:** SQLite
· **Hosting**: Local server

5. Security and Access Control

User roles and login-based access: This section is not currently implemented in our project as it is an early version, but it will be developed in the future. Role-based access control is put in place to guarantee that users, coordinators, and engineers can only access the authorized components of the system. Additionally, individuals who are not
authorized to access the system cannot do so without proper permissions or subscriptions.

RESULTS & FINDINGS

The developed Help Desk Management System was successfully implemented and tested in a simulated environment. The following results and findings were observed:

· **Efficient Ticket Management:** Users were able to raise tickets smoothly through a simplified interface. Each ticket was assigned a unique ID, and its status could be tracked in real-time.

· **Chatbot Integration Improved User Interaction:** The chatbot on the login and raise ticket pages effectively guided users in basic tasks, reducing the need for manual help for common issues. · **Reduced Response Time:** The automated ticket routing and notification system ensured that issues were assigned to relevant departments quickly, leading to a noticeable reduction in average response and resolution time.

· **Data Tracking and Reporting:** The admin panel provided insightful data on the number of tickets raised, resolved, and pending. This helped in identifying frequently occurring problems and bottlenecks in the process.

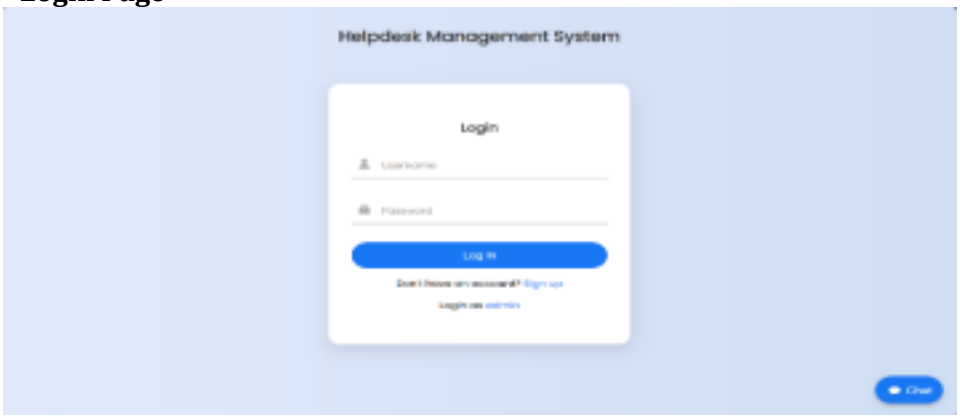
· **Secure User Authentication:** The login and registration system was tested and validated to ensure secure access for both users and admins.

· **User-Friendly UI:** Feedback from test users indicated that the interface was intuitive and responsive across devices, improving the overall user experience.

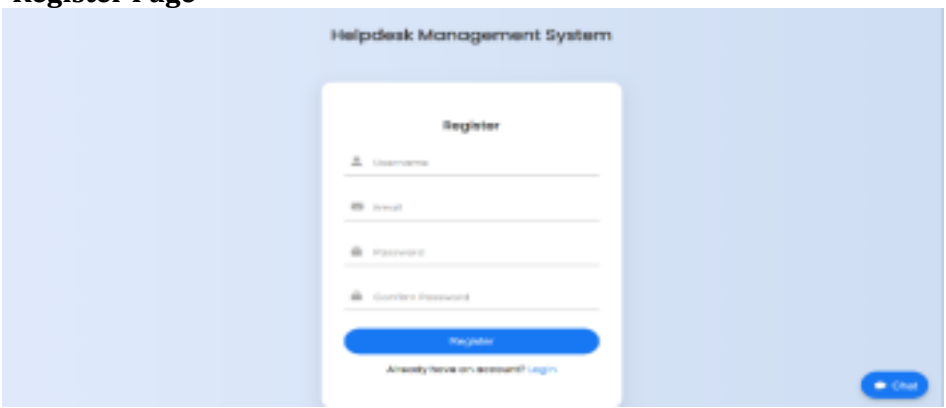
· **System Scalability and Customization:** The system was designed in a modular way, allowing

easy future enhancements such as assigning priority levels, email alerts, or adding a knowledge base.

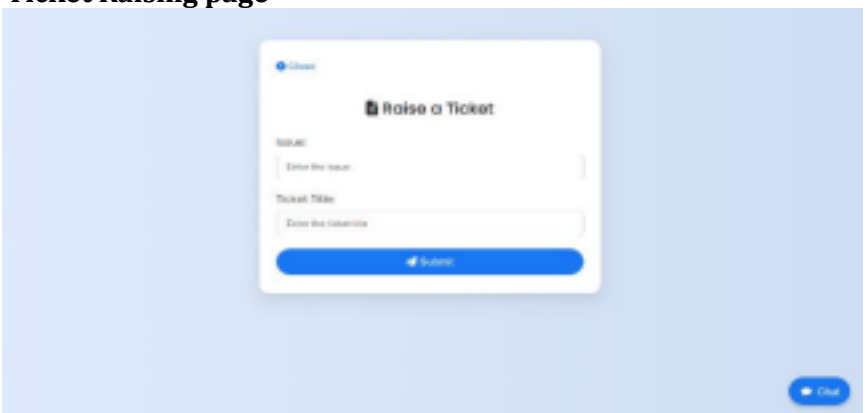
Login Page



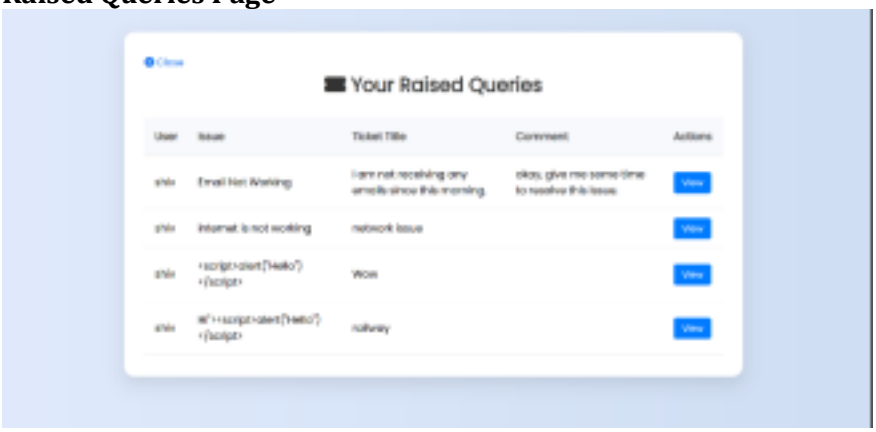
Register Page



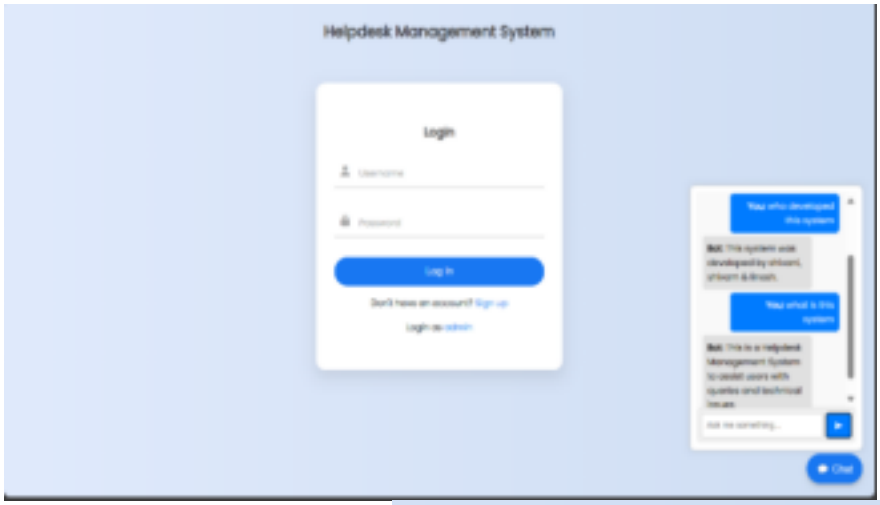
Ticket Raising page



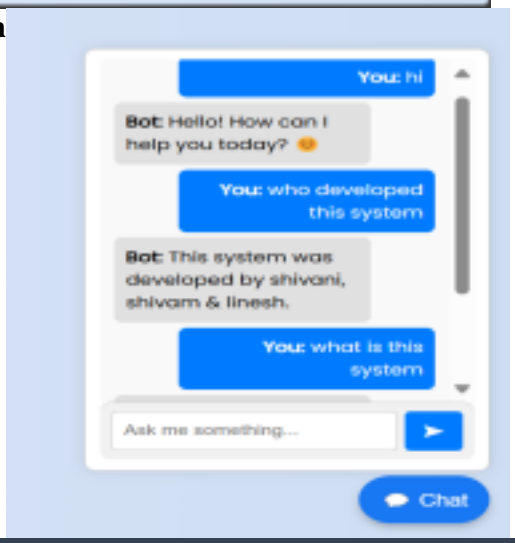
Raised Queries Page

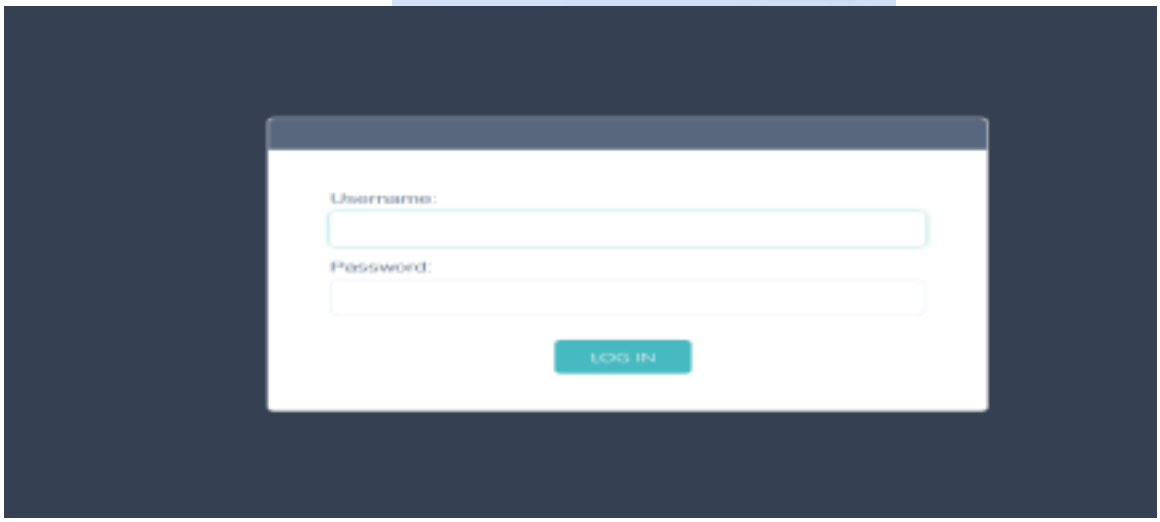


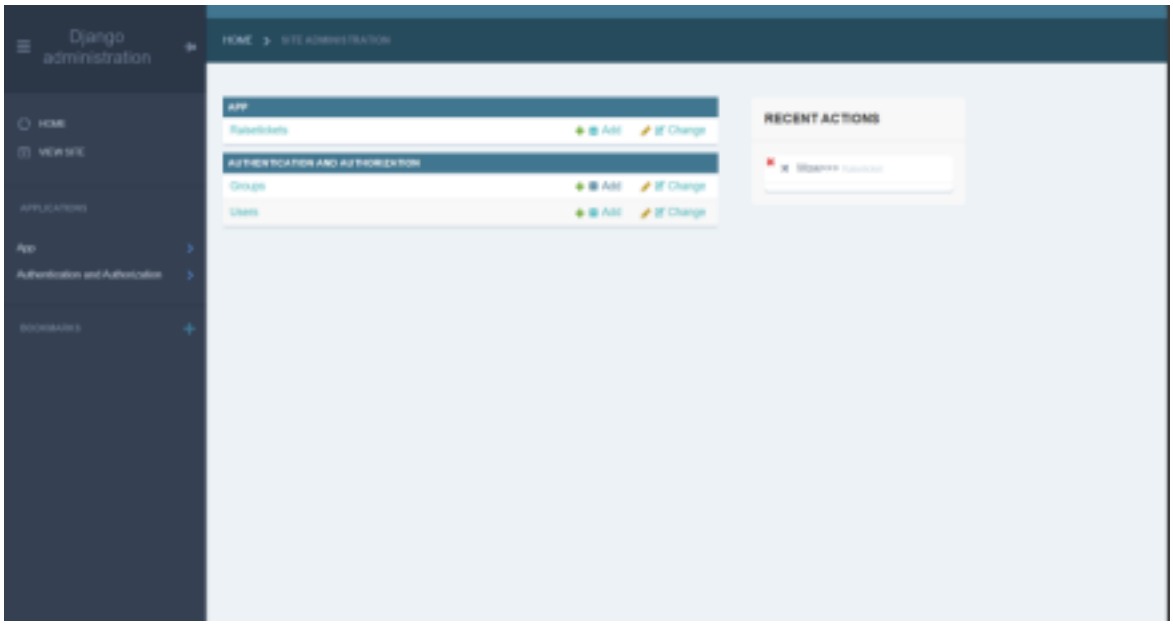
Chatbot Page



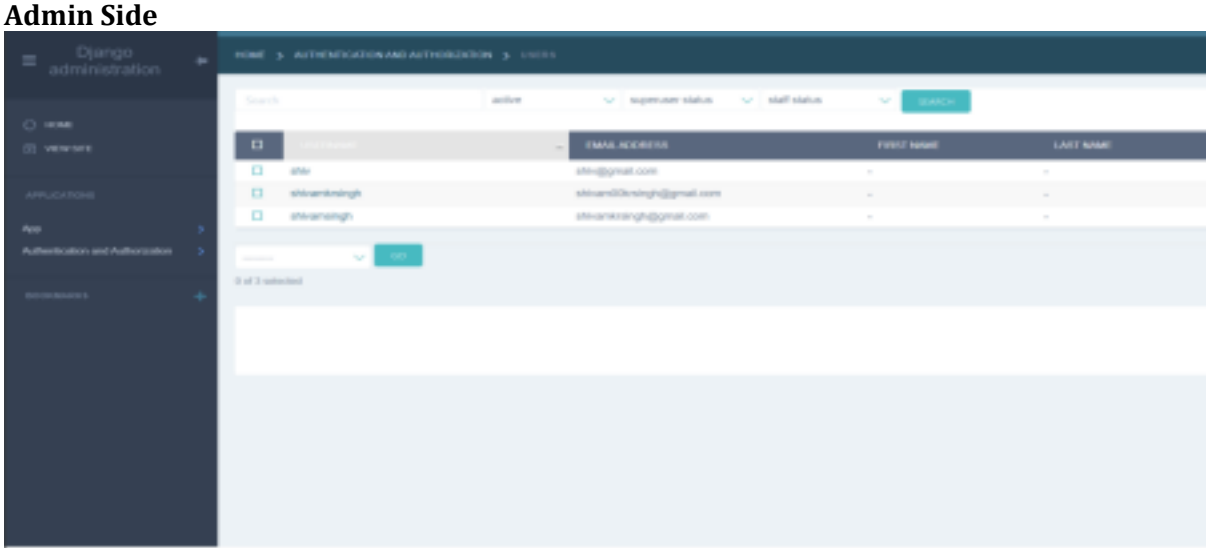
Chatbot Messages Admin Panel Side :-

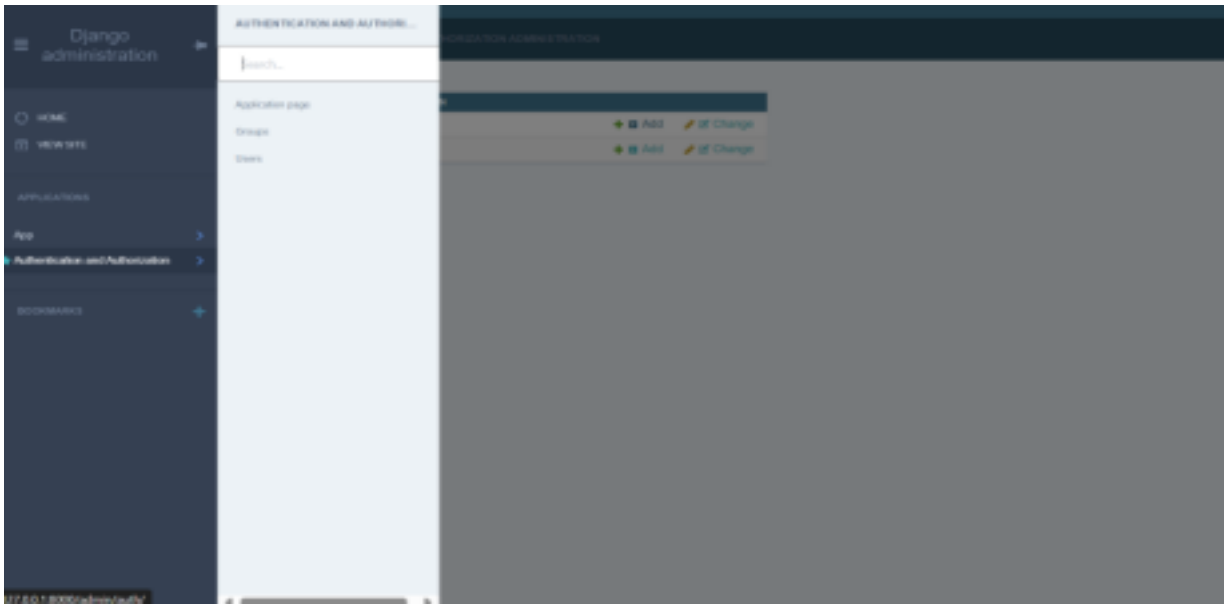





Django administration
HOME
RECENT ACTIONS

Admin Side


Django administration



CONCLUSION

A well-functioning helpdesk ticketing system is crucial for boosting user satisfaction, enhancing productivity, and improving overall organizational efficiency. According to a Microsoft survey (1018), a staggering 95% of customers consider support services as a crucial factor in building brand loyalty, emphasizing the importance of efficient support. By implementing a modern, web-based ticket management system with a three-tier architecture (user → ticket coordinator → engineer), the proposed system enables quicker and more accurate ticket processing. The incorporation of cutting-edge technologies like graph-based machine learning and chat BOT functionalities further improves the system by identifying and preemptively resolving intricate tickets. These advancements not only reduce

resolution times but also assist support engineers in managing their workload more efficiently. The successful implementation of this system establishes a centralized and user-friendly platform where users can submit inquiries, track their progress, and receive timely resolutions, regardless of their physical location or work arrangement. To formally wrap up the project, it is crucial to obtain sign-offs from all stakeholders and ensure that all agreements are fulfilled. Gathering feedback and recording lessons learned will contribute to the ongoing enhancement of future endeavors. With the increasing demand for intelligent and responsive IT support, this helpdesk system provides a scalable and efficient solution. That satisfies the needs of contemporary enterprises.

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