Project Name: I.T Support Ticketing System

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# Executive Summary

The IT Support Ticketing System is designed to facilitate seamless communication between customers and the IT support team, allowing users to submit, manage, and track IT support tickets. IT support staff will be able to handle tickets in real-time, assign them to appropriate personnel, and resolve issues efficiently. The system is built to enhance the IT support process, offering transparency, real-time updates, and role-based access for different users.

The system is designed to support scalability, security, and performance while providing a user-friendly experience for both customers and IT staff. The primary objective is to ensure that IT issues are resolved efficiently while keeping customers informed throughout the process.

# Business Objectives

## Improve IT Support Efficiency

* Provide a streamlined platform for submitting and managing IT support tickets.
* Enhance the ability of IT staff to prioritize, assign, and resolve tickets efficiently.

## Increase Customer Satisfaction

* Ensure that customers receive timely updates on the status of their tickets.
* Allow customers to communicate effectively with IT staff via the platform.

## Real-Time Interaction

* Enable real-time ticket status updates, notifications, and communication between customers and IT staff using WebSocket or Pusher technology.

## Ensure Data Security

* Implement JWT-based authentication to secure user data and maintain role-based access control.
* Store sensitive information securely and adhere to best practices for data protection.

## Scalability and Future Growth

* Design a system that can scale as the customer base grows, handling increased ticket volumes and concurrent users.

# Business Requirements

## Functional Requirements

### Customer Dashboard

* **Ticket Creation**: Customers must be able to submit support tickets with details such as issue type, description, and priority.
* **Ticket Tracking**: Customers must be able to view and track the status of their tickets (open, in-progress, resolved).
* **File Attachments**: Customers must be able to upload files (e.g., screenshots) to support their ticket submissions.
* **Real-Time Notifications**: Customers must receive notifications whenever there is a status update on their tickets.

### IT Admin Dashboard

* **View and Filter Tickets**: IT staff must be able to view, filter, and sort tickets by criteria such as status, priority, or customer.
* **Ticket Assignment**: IT staff must be able to assign tickets to specific team members.
* **Real-Time Updates**: IT staff must receive live updates when new tickets are submitted or ticket status changes.
* **Ticket Resolution**: IT staff must be able to update tickets with resolutions and close tickets once the issue is resolved.
* **Audit Log**: The system must keep a log of all actions taken on tickets for tracking and reporting purposes.

### Authentication & User Management

* **JWT-Based Authentication**: All users must authenticate via JWT, ensuring secure login sessions.
* **Role-Based Access Control**: Different user roles must be assigned to customers and IT staff, with varying levels of access based on roles.

### Real-Time Communication

* **WebSocket Integration**: The system must integrate with WebSocket or Pusher to facilitate real-time ticket updates and notifications.

## Non-Functional Requirements

### Scalability

* The system must be able to handle a growing number of users, support tickets, and real-time interactions without degradation in performance.

### Security

* User authentication must be secure and follow industry standards for token-based authentication.
* Sensitive data (e.g., passwords, ticket details) must be encrypted in transit and at rest.

### Performance

* API calls must return within a reasonable time frame (e.g., under 200ms for common queries).
* Real-time notifications must be delivered with minimal latency.

### Availability

* The system must be highly available, with minimal downtime for both customers and IT staff.

# Scope

## In Scope

* Development of the customer dashboard for submitting and managing tickets.
* Development of the IT admin dashboard for viewing, filtering, and resolving tickets.
* Integration of real-time features (ticket updates and notifications).
* Implementation of JWT-based authentication and role-based access control.
* Deployment on a cloud platform for scalability and performance.

## Out of Scope

* Development of a mobile application (to be included in future phases).
* Integration with third-party services for analytics or reporting (future enhancement).
* Live chat features (future enhancement).

# Stakeholders

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| --- | --- | --- |
| **Stakeholder** | **Role** | **Responsibilities** |
| **Mr. Thomas** | Project Owner | Define project vision, approve final deliverables |
| **IT Support Staff** | End-Users (Internal) | Manage and resolve support tickets |
| **Customers** | End-Users (External) | Submit support tickets and track resolution progress. |
| **Development Team** | Project Implementation | Design, develop, and deploy the system. |

# Timeline and Milestones

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| --- | --- |
| **Milestone** | **Estimated Completion Date** |
| **Project Planning** | Week 1 |
| **Frontend Setup** | Week 2 |
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| **API Development** | Week 3 |
| **Frontend Implementation** | Week 4 |
| **Real-Time Integration** | Week 5 |
| **Testing and QA** | Week 6 |
| **Deployment** | Week 7 |

# Assumptions

* The system will primarily be used by IT support teams and customers who are familiar with basic ticketing systems.
* Cloudways will be used for hosting, providing a reliable and scalable environment for the system.

# Constraints

* The system must adhere to best practices in security and data protection, especially regarding user authentication and sensitive data.
* Limited budget may delay certain future enhancements like mobile app development or advanced analytics.

# Risks

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| --- | --- | --- |
| **Risk** | **Impact** | **Mitigation Strategy** |
| **Delayed Real-Time Feature** | High: Affects usability | Prioritize WebSocket integration early in the project. |
| **Scalability Challenges** | Medium: Impacts performance | Design with future growth in mind, using scalable hosting |
| **Security Vulnerabilities** | High: Potential data loss | Regular security audits and JWT implementation. |

# Success Metrics

* **User Adoption**: Measured by the number of users actively using the platform.
* **Ticket Resolution Time**: Average time to resolve support tickets should decrease post-implementation.
* **System Uptime**: Maintain at least 99.9% uptime for the system.
* **Real-Time Accuracy**: Real-time notifications and updates should be delivered with minimal delay (less than 2 seconds).

# Approvals

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| --- | --- | --- |
| **Name** | **Role** | **Signature** |
| Mr. Thomas | Project Owner | [Signature] |
| IT Support Team | End-Users | [Signature] |
| Development Team | Implementation | [Signature] |

This document provides a structured plan and clearly defines the business requirements for the IT Support Ticketing System project. It serves as a guide for the development team to meet the business objectives while ensuring scalability, security, and efficiency.