



Cebu Innosoft Solutions Services, Inc.

TMS Project

(Ticketing Management System)

Software Requirements Specifications

Version 1.14

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February 2024

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Revision History

Name of the Section	Date	Reason for Changes	Version
Initial Draft	16-02-2024	Initial Draft	1.0
Database	03-02-2024	Cannot create default data, cannot Identify logged user	1.1
Default Data	03-13-2024	Create default data	1.11
Client Line	05-04-2024	Create client transaction details	1.12
License Request	05-08-2024	License request management	1.13
Trash Action	05-24-2024	Add trash action, for soft /temp remove	1.14

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INTRODUCTION

Purpose

This Software Requirements Specification (SRS) document aims to provide a comprehensive list of requirements for creating a reliable and effective Ticket Management System. The aim of this document is to provide developers, designers, testers, and project managers with a thorough understanding of the functional and non-functional specifications needed for the TMS software to be implemented successfully. With features like collaborative ticket lists, comments, and notifications, the ticket management system eases improved teamwork and communication while minimizing the potential of misinterpretation.

Product Scope

The goal of the Ticket Management System is to record every ticket that comes in from the client and provide an intuitive and practical interface for the staff members or users. The way a ticket is managed at work serves as the foundation for the system, feature-rich platform for tracking tickets, producing informative reports.

Audience

The following parties make up this document's main audience:

- **The development team**, consisting of programmers, architects, and software engineers, will oversee creating and executing the TMS system.
- The **Quality Assurance (QA)** team consists of testers and analysts who will confirm and assess the software's functioning and performance.
- **Owners of businesses, managers**, and anybody else with a say in decisions about the creation and implementation of the Task Management System are considered project stakeholders.

OVERALL DESCRIPTION

Product Perspective

- **Outdated Technology:** The existing system relies on outdated technology and architecture, leading to performance bottlenecks and compatibility issues with modern hardware and software.
- **Maintenance and Support Issues:** Continuous maintenance and support for the aging system have become increasingly challenging, leading to frequent downtime and service disruptions.

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Purpose of Replacement

The introduction of a new TMS system aims to address these deficiencies and provide a comprehensive solution that aligns with the evolving needs of the business. The replacement initiative is driven by the following aims:

- **Enhanced Functionality:** The new TMS system will offer a wide array of functionalities, including but not limited to seamless transaction processing, advanced ticket management, intuitive user interface, and robust reporting capabilities.
- **Scalability and Flexibility:** It will be designed with scalability in mind to accommodate future growth and adaptability to changing business requirements. Additionally, the system will be flexible enough to integrate with other business applications and technologies.
- **Improved User Experience:** The focus will be on creating an intuitive and user-friendly interface, reducing training time for staff, and increasing operational efficiency.
- **Reliability and Support:** The replacement system will ensure higher reliability, reduced downtime, and easier maintenance, backed by comprehensive support and regular updates.

Operating Environment

• Hardware Platform

The TMs software is designed to run on a variety of hardware configurations commonly found in BPO, small office environments. It is compatible with

- **Server** - Support for industry-standard Servers with adequate processing power and memory
- **Printers** - Ability to access multiple types of transaction reports wirelessly via Bluetooth or Wi-Fi.

2. Operating System and Versions

The TMS software is compatible with the following operating systems:

- **Windows:** Supported versions include Windows 7 - 11, and corresponding server editions (Windows Server 2008 R2 - Windows Server 2019).
- **MacOS:** Compatible with macOS Catalina (10.15) and later versions for systems using Apple hardware.

3. Additional Considerations

Network Environment: The software doesn't require a stable internet connection for certain functionalities.

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Hardware Compatibility Testing: Prior to deployment, rigorous testing will be conducted to ensure smooth operation on various hardware setups commonly used in the BPO or in small offices.

Software Updates: The system is designed to accommodate periodic software updates and patches to ensure compatibility with evolving hardware and software environments.

Technologies to be used.

1. Limiting Factors and Constraints

- **Integration with External Applications:** The TMS system must seamlessly integrate with existing applications, such as accounting software (e.g., QuickBooks), inventory management systems, and payment gateways, imposing constraints on compatible technologies and protocols.
- **Database and Technology Requirements:** Use of specific databases (e.g., MySQL, MSSQL) and technology stacks (e.g., .NET, MERN) has been mandated by the organization, needing compatibility and expertise in these technologies.
- **Security Considerations:** The system must prioritize robust security measures, including encryption protocols, secure authentication mechanisms, and adherence to industry-standard security practices to safeguard sensitive data and prevent unauthorized access.
- **Programming Standards and Design Conventions:** Adherence to the customer's organization's programming standards and design conventions is needed, ensuring maintainability and ease of future updates by the client's IT team.
- **Communication Protocols:** The software should support standard communication protocols for data exchange with peripherals (e.g., printers) and external systems (e.g., API integrations).

2. Parallel Operations and Language Requirements

- The system should efficiently oversee parallel operations to accommodate multiple users processing transactions simultaneously.
- Multilingual support may be necessary to cater to various languages spoken in the Philippines for user interfaces and transactional documents.

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EXTERNAL INTERFACE REQUIREMENTS

Hardware Interfaces

1. Supported Device Types

The software product works with various hardware components prevalent in retail environments, including:

- **Servers:** Compatible with industry-standard Servers.
- **Printers:** Interfaces with impact printers via USB or Ethernet/Wireless connections.

2. Data and Control Interactions

- **Data Interchange:** Uses standard data exchange formats (e.g., JSON, XML) for transmitting transactional data between the software and hardware components.
- **Control Interactions:** Employs command and control signals to start transactions, retrieve ticket information, and manage peripheral devices.

Software Interfaces

1. Integrated Software Components

The TMS system interacts with the following software components:

- **Database:** Interfaces with MSSQL version 2008 or later for data storage and retrieval of product information, transaction records, and user credentials.
- **Operating Systems:** Communicates with Windows 7 to latest and Windows Server 2019 for compatibility and system-level operations.
- **Third-Party APIs:** Integrates with automated emailing notifications.

2. Data Record and Messages

- **Incoming Data:** Receives client's information, transaction details, and user authentication requests from the database and peripherals.
- **Outgoing Data:** Sends transaction data, various reports to the database and external automated emails.

3. Communication Nature and Services

- **Data Sharing:** Uses RESTful APIs and JSON-formatted messages for seamless data exchange between the TMS software, database, and external peripherals.

Communications Interfaces

1. Communication Functions

- **Network Server Communications:** The system interacts with network servers for data

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synchronization, software updates, and remote data backup. It uses TCP/IP (Transmission Control Protocol/Internet Protocol) for network communications, ensuring dependable data transfer between the TMS and servers.

2. Communication Security and Encryption

- **Encryption Protocols:** Implements SSL/TLS (Secure Sockets Layer/Transport Layer Security) encryption for securing data transmitted over email and web interfaces, ensuring confidentiality and integrity.
- **Data Transfer Rates:** The system supports high-speed data transfer rates over secure connections to keep transaction efficiency and minimize processing delays.

3. Synchronization Mechanisms

- **Data Synchronization:** Uses synchronization protocols such as RESTful APIs or custom data synchronization mechanisms for real-time or periodic synchronization of transactional data with the central database and external servers.

SYSTEM FEATURES/FUNCTIONS

1. User Management

the set of functionalities and processes involved in the administration and control of user accounts, access rights, roles, and associated settings within the system. It encompasses tasks such as creating, changing, and removing user accounts, assigning specific roles and access rights to users based on their responsibilities and privileges, managing authentication methods (e.g., passwords, single sign-on), and configuring user-related settings such as profile information and preferences. User management ensures secure and efficient access control, easing the effective use of the TMS by authorized personnel while safeguarding sensitive data and system resources.

Functionalities/Actions:

- **Display User List:** View a list of all users registered in the system.
- **View Specific User Details:** Access detailed information about a specific user.
- **Add New Users:** Create new user accounts within the system.
- **Delete User:** Remove user accounts from the system.
- **Update User Details:** Change user account information or settings.
- **Search Users:** Search for specific users based on criteria such as name or username.
- **Filter Users:** Apply filters to the user list to narrow down results based on specific attributes or criteria.

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Constraints:

- Cannot remove default user (Administrator).
- Cannot update/remove a user with existing transactions.
- Cannot add/remove/update a user without access rights.
- Cannot edit/remove the currently logged-in user.

Other Considerations:

- **Cascade on Update/Remove:** Ensure that changes to user accounts propagate appropriately to associated data or records.
- **Logout on Change of Password:** Automatically log out users when they change their passwords to keep security.

2. Role Management

The process of defining, assigning, and managing roles that govern the access rights of users within the system. Roles are sets of privileges that dictate what actions users can perform and what data they can access or change. Role management typically involves tasks such as creating predefined roles with specific sets of access rights tailored to different user responsibilities or job functions, assigning roles to individual users or groups, changing role access rights as needed, and revoking or updating roles when user roles change, or new requirements arise. Effective role management ensures that users have access to system functionalities while keeping data security and integrity by restricting unauthorized actions.

Functionalities/Actions:

- **Display Role List:** View a list of all defined roles within the system.
- **View Specific Role Details:** Access detailed information about a specific role.
- **Add New Roles:** Create new roles with specific access rights and privileges.
- **Delete Role:** Remove roles from the system.
- **Update Role Details:** Change role definitions or access rights.
- **Search for Roles:** Search for specific roles based on criteria such as name or description.
- **Filter Roles:** Apply filters to the role list to narrow down results based on specific attributes or criteria.

Constraints:

- Cannot remove default roles.
- Cannot update/remove roles with existing transactions.
- Cannot add/remove/update roles without access rights.

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Other Considerations:

- **Cascade on Update/Remove:** Ensure that changes to roles propagate appropriately to associated data or records.

3. Access Right Management

The process of controlling and regulating the permissions granted to users or groups of users to access and interact with the system's functionalities and data. This management encompasses defining, assigning, and managing access rights, which specify what actions users can perform and what data they can view, create, change, or remove within the TMS. Access rights are typically granular, allowing administrators to tailor permissions based on user roles, responsibilities, and organizational requirements. Access rights management involves tasks such as defining access control lists (ACLs), configuring permissions for specific modules or features, assigning permissions to individual users or groups, auditing access activities, and enforcing security policies to protect sensitive data and prevent unauthorized access or misuse.

Functionalities/Actions:

- **Display Access Rights List:** View a list of all defined access rights within the system.
- **View Specific Access Right Details:** Access detailed information about a specific access right.
- **Add New Access Rights:** Create new access rights with specific permissions and privileges.
- **Delete Access Right:** Remove access rights from the system.
- **Update Access Right Details:** Change access right definitions or permissions.
- **Search for Access Rights:** Search for specific access rights based on criteria such as name or description.
- **Filter Access Rights:** Apply filters to the access rights list to narrow down results based on specific attributes or criteria.

Constraints:

- Cannot remove default access rights.
- Cannot update/remove access rights with existing transactions.
- Cannot add/remove/update access rights without access rights.

4. Department Management

The organization and administration of user accounts, permissions, and workflows based on departmental divisions within an organization. This management entails creating and managing departmental structures within the TMS, such as customer support, IT, human resources, finance, and others, to align with

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the organizational hierarchy and operational requirements. Department management eases the assignment of specific roles, responsibilities, and permissions to users within each department, streamlining ticket routing, task allocation, and communication workflows. It also enables departmental-level reporting, analytics, and performance monitoring to assess productivity, service levels, and resources utilization.

Functionalities/Actions:

- **Display Department List:** View a list of all defined departments within the system.
- **View Specific Department Details:** Access detailed information about a specific department.
- **Add New Departments:** Create new department structures within the TMS.
- **Delete Department:** Remove departments from the system.
- **Update Department Details:** Change department definitions or settings.
- **Search for Departments:** Search for specific departments based on criteria such as name or description.

Constraints:

- Cannot remove default department.
- Cannot update/remove departments with existing transactions.
- Cannot add/remove/update departments without access rights.

5. Client Management

The process of organizing, storing, and managing client or customer information, interactions, and relationships within the system. This management encompasses tasks such as creating and keeping client profiles, recording communication history, tracking service requests or inquiries, and managing client-related documents or files. Client management in a TMS facilitates efficient communication and collaboration with clients, enabling organizations to address their needs, resolve issues, and deliver high-quality services. It also supports client segmentation, analysis, and reporting to show trends, preferences, and opportunities for improvement.

Functionalities/Actions:

- **Display Client List:** View a list of all clients or customers stored within the system.
- **View Specific Client Details:** Access detailed information about a specific client or customer.
- **Add New Clients:** Create new client profiles within the TMS.
- **Delete Client:** Remove client profiles from the system.
- **Update Client Details:** Change client information or settings.
- **Search for Clients:** Search for specific clients based on criteria such as name or contact information.

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Constraints:

- Cannot update/remove clients with existing transactions.
- Cannot add/remove/update clients without access rights.

6. Product Management

The administration and control of products or services within the system. This management includes tasks such as defining and categorizing products or services offered by the organization, setting up product hierarchies or taxonomies, and managing product-related information such as descriptions, pricing, and availability. Product management in a TMS enables organizations to efficiently track and manage tickets or requests related to specific products or services, ensuring prompt resolution and effective customer support. It also supports inventory management, order tracking, and reporting functionalities to check product performance, demand, and customer satisfaction.

Functionalities/Actions:

- **Display Product List:** View a list of all products or services stored within the system.
- **View Specific Product Details:** Access detailed information about a specific product or service.
- **Add New Products:** Create new product listings within the TMS.
- **Delete Product:** Remove product listings from the system.
- **Update Product Details:** Modify product information or settings.
- **Search for Products:** Search for specific products based on criteria such as name or category.

Constraints:

- Cannot update/remove products with existing transactions.
- Cannot add/remove/update products without access rights.

7. Ticketing

is a digital record or entry that stands for a user's request, issue, or task. It serves as a centralized way to track and manage communication, progress, and resolution of customer inquiries, technical problems, service requests, or other types of work items. Each ticket holds relevant information such as the requester's details, description of the issue or request, status, assigned personnel, priority level, timestamps, and any related correspondence or updates.

Functionalities/Actions:

- Displays of Tickets:
 - **All Tickets:** View all tickets recorded within the system.

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- **By Department Tickets:** View tickets categorized by department.
- **User Assigned Tickets:** View tickets assigned to specific users.
- **View Specific Ticket Details:** Access detailed information about a specific ticket.
- **Add New Tickets:** Create new tickets to record user requests or issues.
- **Delete Ticket:** Remove tickets from the system.
- **Update Ticket Details:** Change ticket information or status.
- **Search for Tickets:** Search for specific tickets based on criteria such as ticket ID or keywords.
- **Filter Tickets:** Apply filters to the ticket list to narrow down results based on specific attributes or criteria.
- **Print Tickets:** Generate printable versions of tickets for documentation or reference purposes.

Constraints:

- Cannot update/remove tickets that have transactions (Actions/Solutions).
- Cannot add/remove/update tickets without access rights.

Other Considerations:

- Unresolved tickets at the end of day (EOD) notify their department manager.
- Unresolved tickets on EOD display a reddish background color.
- Resolved tickets display a greenish background color.
- Newly opened tickets display a primary background color.

8. Ticket Review

The process of systematically evaluating and analyzing tickets to assess their quality, completeness, and compliance with established criteria, standards, or requirements. This review typically involves examining various aspects of the ticket, including the description of the issue or request, the accuracy of information provided, the appropriateness of categorization and prioritization, the resolution steps taken, and any associated documentation or communication. Ticket reviews may be conducted by support agents, supervisors, quality assurance teams, or other designated personnel within the organization. The primary goals of ticket reviews are to ensure consistency, accuracy, and professionalism in ticket handling, find opportunities for improvement in support processes or training, and keep high standards of service delivery and customer satisfaction.

Functionalities/Actions:

- **Reading Ticket Details:** Reviewing the details provided in the ticket, including the description of the

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issue or request, contact information, ticket status, and any earlier communication history.

- **Verification:** Verifying the accuracy and completeness of the information provided in the ticket, such as contact details, product or service details, and issue description.
- **Compliance Check:** Ensuring that ticket handling procedures, policies, and regulatory requirements are followed, such as data privacy regulations or service level agreements.
- **Closing or Reopening Tickets:** Making the decision to close the ticket if the issue is resolved satisfactorily, or reopening the ticket if further action is needed or if the issue recurs.
- **Satisfactory Rating:** A measure of the customer's satisfaction with the resolution provided for their ticket. It's typically rated on a scale (e.g., 1 to 5 stars) or as binary (e.g., satisfied, or unsatisfied). To gauge the effectiveness and quality of the support provided by evaluating the customer's perception of the resolution.

9. Notification

Are automated messages or alerts generated by the system to inform users about specific events, updates, or actions related to tickets, tasks, or other activities within the system. These notifications are designed to keep users informed and engaged by providing prompt and relevant information about changes, status updates, assignments, deadlines, or other notable events. Notifications can be delivered via various communication channels such as email, SMS, in-app notifications, or integrations with external messaging platforms.

Functionalities/Actions:

- **Mark as Unread:** Users can mark notifications as unread to revisit them later or highlight their importance.
- **Click and Redirect:** Users can click on notifications to directly navigate to the specified subject or relevant content.

Other Considerations:

- **Visual Distinction:** Notifications should have distinct background colors to differentiate between read and unread notifications, easing easier identification by users.
- **Notification Triggers:**
 - Implement triggers to automate the generation and sending of notifications based on predefined events or conditions.
- **Ticket Creation Notification:**
 - Upon ticket creation, notify the tagged or assigned user to ensure prompt attention and action.

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- **End of Day (EOD) Notifications:**

- Generate notifications for unresolved tickets at EOD, informing department heads or managers for follow-up on the next day.

- **BCS Expiry Notification:**

- Notify users a month before the expiry date of BCS-related tickets to help prompt actions or renewals.

10. Reports

Are structured presentations of data and information derived from the system's records and activities, designed to provide insights, analysis, and metrics for decision-making and performance evaluation. These reports typically include graphical representations, tables, and summaries that help users understand trends, patterns, and key performance indicators related to ticket resolution, customer satisfaction, team productivity, workload distribution, and other aspects of the system's operation.

- **Ticket Summary Report:** Provides an overview of ticket volume, status distribution, and resolution times.
- **Ticket Aging Report:** Displays the duration tickets have remained unresolved, categorized by age brackets.
- **Ticket Resolution Time Report:** Analyzes the time taken to resolve tickets, including average resolution time and outliers.
- **Customer Satisfaction (CSAT) Report:** Measures customer feedback and satisfaction scores based on resolved tickets.
- **Staff Performance Report:** Evaluates individual staff productivity, responsiveness, and ticket resolution rates.
- **Team Workload Report:** Displays workload distribution among teams or departments, helping to find bottlenecks or resource imbalances.
- **Ticket Category Analysis Report:** Breaks down ticket volume and resolution metrics by category (e.g., technical issues, inquiries, requests).
- **Trend Analysis Report:** Shows patterns and trends in ticket volume, resolution times, and customer satisfaction scores over time.
- **Customer Interaction History Report:** Summarizes past interactions and communication with specific customers or organizations.

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- **User Activity Log Report:** Logs user activities within the TMS, including login/logout times, ticket updates, and system modifications.

11. Settings

Allow users and administrators to configure and customize the system to meet their specific requirements and preferences, thus optimizing its functionality and usability.

- **Audit Trail** - tracks and records all user activities and system events within the TMS. It keeps a chronological record of actions performed by users, such as ticket updates, user logins, configuration changes, and other administrative tasks.
- **Localization Settings** - allow users to customize language and regional preferences to suit their geographic location and linguistic preferences. These settings typically include options to select preferred languages, date and time formats, currency symbols, and other localization parameters.
- **Ticket Archiving Settings** - allow administrators to configure rules and policies for archiving and storing historical ticket data. These settings define criteria for automatically archiving tickets based on factors such as age, status, category, or other attributes, as well as specify storage locations and retention periods for archived data.

12. License Request Management

Allows employees/staff to request licenses for the software.

Features:

Request Submission:

- Employees can submit requests for software licenses.
- Requests must include necessary details like software name, version, justification for use, and desired license duration.

Approval Workflow:

- Requests are routed to appropriate managers or administrators for approval.
- Multi-level approval process for high-cost or critical software.
- Automated notifications sent to approvers and requestors.

License Tracking:

- Track the status of all license requests.
- Maintain a record of issued licenses including expiry dates and renewal reminders.

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Reporting and Analytics:

- Generate reports on license usage, requests, approvals, and rejections.
- Analyze trends in software usage and licensing requirements.

Other Nonfunctional Requirements

Performance

- The system should support a specified number of transactions per second.
- Response times for user interactions (e.g., generating reports) should meet defined thresholds.

Scalability

- The system should scale seamlessly to manage an increasing number of users, and transactions.

Reliability

- The system should have high availability to minimize downtime.
- It should be resilient to hardware failures and able to recover gracefully.

Security

- User authentication and authorization mechanisms should be robust.
- Audit trails should be kept for user activities.

Usability

- The user interface should be intuitive and easy to use.
- Training requirements for users should be minimal.
- Accessibility features should be in place to accommodate users with disabilities.

Maintainability

- The system should be easy to keep and update.
- Documentation for system administration and troubleshooting should be comprehensive.

Data Integrity

- Data integrity should be kept throughout the system, ensuring correct and consistent information.

Compliance:

- The system should follow relevant regulations and legal requirements.

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Reporting:

- The TMS should offer robust reporting capabilities, allowing users to generate various reports.

Backup and Recovery

- Regular backups of system data should be performed, and the system should support efficient data recovery processes.

Response Time

- The system should have acceptable response times for critical functions, ensuring a positive user experience.

Capacity Planning:

- The system should provide tools for administrators to perform capacity planning and anticipate resource requirements.

Network Requirements:

- Specify network-related requirements, including bandwidth considerations and network latency tolerances.

Regulatory Compliance:

- The TMS should adhere to relevant industry and regulatory standards.

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Appendix A: Glossary

Age – The time interval of the ticket created and the current Date Time.

BCS – Business Continuity Services

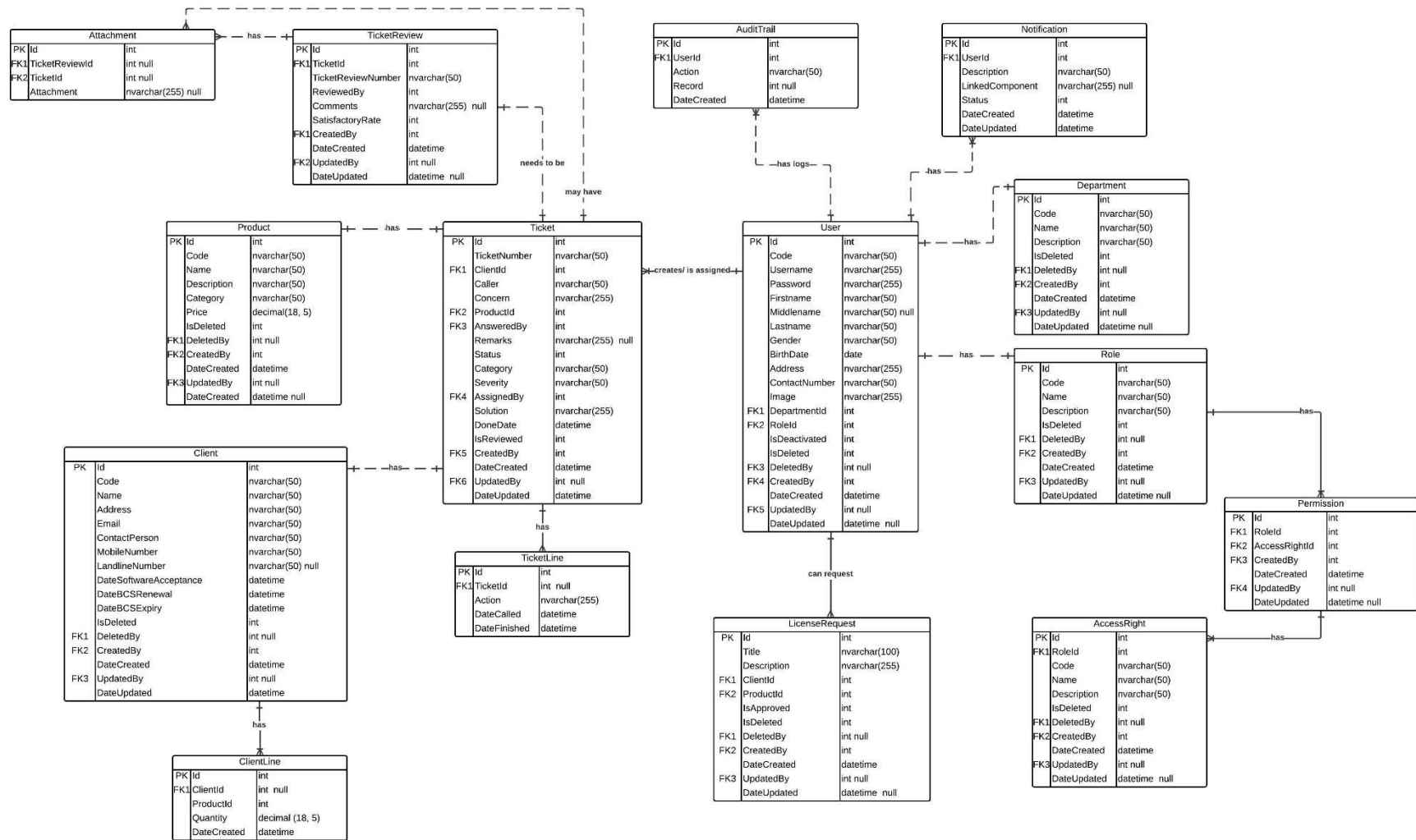
EOD – End of the Day

Gossip – On call of the client the issue has been log then later upon call to verify the issue, but the issue has been resolved without support.

Severity – The duration of resolving the ticket.

Appendix B: Database Design

Entity Relationship Diagram



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Data Dictionary

Table 1. User Table				
Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	
Code	nvarchar (50)	NO	Automated 6-digit user code (e.g., 000245)	
Username	nvarchar (255)	NO	User's username for the account	
Password	nvarchar (255)	NO	User's password for the account	
Firstname	nvarchar (50)	NO	User's first name	
Middlename	nvarchar (50)	YES	User's middle name	
Lastname	nvarchar (50)	NO	User's last name	
Gender	nvarchar (50)	NO	User's gender identity	
BirthDate	datetime	NO	User's date of birth	
Address	nvarchar (255)	NO	User's permanent address	
ContactNumber	nvarchar (50)	NO	User's contact number, could be mobile or landline	

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Image	nvarchar (255)	NO	User's account image or profile image	
DepartmentId	int	YES	User's designated department	Department
RoleId	int	YES	User's position in the organization/corporation	Role
IsDeactivated	Int	NO	User's account deactivation	
IsLogin	Bit	NO	Log user distinction	
IsDeleted	Int	NO	Trash the record, remove the record temporarily	
DeletedBy	Int	YES	The User deleted the record	User
CreatedBy	int	NO	Creation log, log the user who created the new user	User
DateCreated	datetime	NO	Creation log, time and date of the creation of the new user	
UpdatedBy	Int	YES	Updating log, log the user who edit a user's details	User
DateUpdated	datetime	YES	Updating log, time and date of the updating of a user'	

Table 2. Role Table				
Field Name	Data Type	Null	Description.	Foreign Key

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Id	int	NO	Primary Key, Unique Identification Number	
Code	nvarchar (50)	NO	Automated 6-digit role code (e.g., 000245)	
Name	nvarchar (50)	NO	Name of the role (e.g., Administrator, Manager, Staff)	
Description	nvarchar (50)	NO	Description of the role	
IsDeleted	Int	NO	Trash the record, remove the record temporarily	
DeletedBy	Int	YES	The User deleted the record	User
CreatedBy	int	NO	Creation log, log the user who created the new user	User
DateCreated	datetime	NO	Creation log, time and date of the creation of the new user	
UpdatedBy	Int	YES	Updating log, log the user who edit a user's details	User
DateUpdated	datetime	YES	Updating log, time and date of the updating of a user'	

Table 3. Access Right Table				
Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	

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RoleId	int	NO	Foreign Key, Access rights of the role	Role
Code	nvarchar (50)	NO	Automated 6-digit access right code (e.g., 000245)	
Name	nvarchar (50)	NO	Name of the access right (e.g., Add Client)	
Description	nvarchar (50)	NO	Description of the access right (e.g., To add new clients)	
IsDeleted	Int	NO	Trash the record, remove the record temporarily	
DeletedBy	Int	YES	The User deleted the record	User
CreatedBy	int	NO	Creation log, log the user who created the new user	User
DateCreated	datetime	NO	Creation log, time and date of the creation of the new user	
UpdatedBy	Int	YES	Updating log, log the user who edit a user's details	User
DateUpdated	datetime	YES	Updating log, time and date of the updating of a user'	

Table 4. Department Table				
Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	

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Code	nvarchar (50)	NO	Automated 6-digit department code (e.g., 000245)	
Name	nvarchar (50)	NO	Name of the department (e.g., Technical)	
Description	nvarchar (50)	NO	Description of the department	
IsDeleted	Int	NO	Trash the record, remove the record temporarily	
DeletedBy	Int	YES	The User deleted the record	User
CreatedBy	int	NO	Creation log, log the user who created the new user	User
DateCreated	datetime	NO	Creation log, time and date of the creation of the new user	
UpdatedBy	Int	YES	Updating log, log the user who edit a user's details	User
DateUpdated	datetime	YES	Updating log, time and date of the updating of a user'	

Table 5. Client Table				
Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	
Code	nvarchar (50)	NO	Automated 6-digit client code (e.g., 000245)	

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Name	nvarchar (50)	NO	Name of the client (e.g., Innosoft Solutions Seviles)	
Address	nvarchar (255)	NO	Address/location of the client's company	
ContactPerson	nvarchar (50)	NO	Point of person to contact	
MobileNumber	nvarchar (50)	NO	Mobile number of the client	
LandlineNumber	nvarchar (50)	YES	Landline number of the client	
DateSoftwareAcceptance	datetime	NO	Date of the software acceptance of the client	
DateBCSRenewal	datetime	NO	Renewal date of the BCS	
DateBCSEpiry	datetime	NO	Expiry date of the BCS	
IsDeleted	Int	NO	Trash the record, remove the record temporarily	
DeletedBy	Int	YES	The User deleted the record	User
CreatedBy	int	NO	Creation log, log the user who created the new client	User
DateCreated	datetime	NO	Creation log, time and date of the creation	
UpdatedBy	Int	YES	Updating log, log the user who edit a user's details	User
DateUpdated	datetime	YES	Updating log, time and date of the updating of a user'	

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Table 6. Client Line Table

Field Name	Data Type	Null	Description.	Foreign Key
Id	Int	NO	Primary Key, Unique Identification Number	
ClientId	Int	YES	Client's transaction	Client
ProductId	Int	NO	The product/service bought of the client	Product
Quantity	Decimal (18, 5)	NO	Number of product or services bought	
DateCreated	DateTime	NO	Creation log, time and date of the creation of the transaction	

Table 7. Product Table

Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	
Code	nvarchar (50)	NO	Automated 6-digit product code (e.g., 000245)	
Name	nvarchar (50)	NO	Name of the product or service (e.g., POS Re-installation)	
Description	nvarchar (50)	NO	Description of the product	

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Price	decimal (18, 5)	NO	Price of the product or service	
IsDeleted	Int	NO	Trash the record, remove the record temporarily	
DeletedBy	Int	YES	The User deleted the record	User
CreatedBy	int	NO	Creation log, log the user who created the new user	User
DateCreated	datetime	NO	Creation log, time and date of the creation of the new user	
UpdatedBy	Int	YES	Updating log, log the user who edit a user's details	User
DateUpdated	datetime	YES	Updating log, time and date of the updating of a user'	

Table 8. Ticket Table				
Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	
TicketNumber	nvarchar (50)	NO	Combination of Automated 6-digit ticket code and current date (e.g., 20240217-000245)	
ClientId	int	NO	The client who has concerns or something	Client

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Caller	nvarchar (50)	NO	Name of the person who called	
Concern	nvarchar (255)	NO	A request, issue and whatsoever of the client	
ProductId	int	NO	The product or service the client wants	Product
AnsweredBy	int	NO	The staff who answered the call of the client	User
Remarks	nvarchar (255)	YES	Could be a notes or comments of the staff	
Category	nvarchar (50)	NO	Category of the ticket (e.g., Software Bug)	
Severity	nvarchar (50)	NO	The duration of resolving the ticket.	
AssignedBy	int	NO	The staff who is assigned of this ticket	User
Solution	nvarchar (255)	NO	The solution to solve the issue or concern of the client	
DoneDate	datetime	NO	The time and date of the ticket is resolved	
IsReviewed	int	NO	Indication if the ticket is already reviewed	
CreatedBy	int	NO	Creation log, log the user who created the new user	User
DateCreated	datetime	NO	Creation log, time and date of the creation of the new user	
UpdatedBy	Int	YES	Updating log, log the user who edit a user's details	User

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DateUpdated	datetime	YES	Updating log, time and date of the updating of a user'	
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Table 9. TicketLine Table				
Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	
TicketId	int	NO	The linked ticket	Ticket
Action	nvarchar (255)	YES	Action taken to resolve the concern	
DateCalled	datetime	YES	Date and time the support called to resolve the concern	
DateFinished	Datetime	YES	Date and time the support finished the action to resolve the concern	

Table 10. TicketReview Table				
Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	

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TicketId	int	NO	FK, the ticket to review	Ticket
TicketReviewNumber	nvarchar (50)	NO	The combination of automated 6-digit number and the current date (e.g., 20240217-000586)	
ReviewedBy	int	NO	The staff who review the ticket	User
Comments	nvarchar (255)	YES	The feedback, notes, comments of the reviewer to the ticket	
SatisfactoryRate	Int	NO	The client satisfactory rate	
CreatedBy	int	NO	Creation log, log the user who created the new user	User
DateCreated	datetime	NO	Creation log, time and date of the creation of the new user	
UpdatedBy	Int	YES	Updating log, log the user who update the ticket review	User
DateUpdated	DateTime	YES	Updating log, log the user who edit a user's details	

Table 11. Attachment Table				
Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	

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TicketId	int	YES	FK, the attachment linked to what Ticket	Ticket
TicketReviewId	int	YES	FK, the attachment linked to what TicketReview	TicketReview
LicenseRequestId	Int	YES	FK, the attachment linked to the LicenseRequest	LicenseRequest
Attachment	nvarchar (255)	YES	The encrypted file name of the file	

Table 12. Notification Table				
Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	
UserId	int	NO	FK, the notification linked to user	User
Description	int	NO	Description of the notification	
LinkedComponent	nvarchar (255)	YES	The URL or linked component of the notification	
Status	int	NO	Status of the notification	
DateCreated	int	NO	Date and time of the creation of the notification	

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Table 13. AuditTrail Table

Field Name	Data Type	Null	Description.	Foreign Key
Id	int	NO	Primary Key, Unique Identification Number	
UserId	int	NO	FK, the notification linked to user	User
Action	nvarchar (50)	NO	Action taken (e.g., Add Client)	
Record	int	YES	Id of the record of a certain table	
DateCreated	int	NO	Date and time of the creation of the audit trail	

Table 14. License Request

Field Name	Data Type	Null	Description.	Foreign Key
Id	Int	NO	Primary Key, Unique Identification Number	
Title	Nvarchar (100)	NO	Request's title	
Description	Nvarchar (255)	NO	Request note/comment/remark/description	
ClientId	Int	NO	The client requested the license	Client

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ProductId	Int	NO	The product/services request by the client	Product
IsDeleted	Int	NO	Trash the request to the temp garbage	
DeletedBy	Int	YES	Log the user trash the request	User
CreatedBy	Int	NO	Creation log, log the user who created the request	User
DateCreated	DateTime	NO	Creation log, time and date of the creation of the request	
UpdatedBy	Int	YES	Updating log, log the user who edit a user's details	User
DateUpdated	DateTime	YES	Creation log, time and date of the updating of the request	

Table 15. Permission				
Field Name	Data Type	Null	Description.	Foreign Key
Id	Int	NO	Primary Key, Unique Identification Number	
RoleId	Int	NO	FK, the Role link this permission is to	Role
AccessRightId	Int	NO	FK, the action permitted to do	Access Right
CreatedBy	Int	NO	Log the user who give the permission	User
DateCreated	DateTime	NO	Date and time of the creation of the Permission	

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