**SOFTWARE**

**REQUIREMENTS SPECIFICATION**

**` For**

**Customer Relationship Management (CRM) System**

**Prepared by:-**

THP Team

## Introduction

### Purpose

The main objective of (CRM) system is to enhance the interactions and relationship of customer with the application admin. The purpose of this method is to help businesses better understand their customers, increase customer satisfaction, and spur overall corporate growth. The CRM system attempts to equip users with the resources required to establish and preserve solid, mutually advantageous relationships with clients by offering a consolidated platform for customer data, communication tracking, and analytics. By providing a centralized platform for customer data, communication tracking, and analytics, the CRM system aims to empower users with the tools necessary to build and maintain strong, mutually beneficial relationships with clients.

### 1.2 Document Conventions

* Entire document should be justified.
* Convention for Main title

Font face: Times New Roman



Font style: Bold

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* Convention for Sub title

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* Convention for body

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* 1. **Scope of Development Project**

The scope of the Customer Relationship Management (CRM) system development project encompasses the digitization and optimization of customer-centric processes. The primary objective is to create an advanced CRM platform that facilitates efficient customer interaction, data management, and strategic analytics. The system will serve as a comprehensive user interface for both CRM administrators and end-users, enabling seamless management of customer relationships and interactions. Key features include robust customer information management, real-time tracking of customer interactions across multiple channels, and integration with task and calendar functionalities for effective planning and organization. The CRM system is designed to be adaptable for implementation in various business environments, providing a flexible structure to meet the specific needs of different industries and organizations. Functionally, the CRM system will prioritize secure user authentication and authorization, ensuring data integrity and confidentiality. It will seamlessly integrate with communication tools for streamlined customer correspondence and boast a responsive user interface to enhance overall user experience. Non-functional requirements encompass scalability to accommodate a growing user base, stringent security measures to protect sensitive customer data, and optimized performance for quick and efficient data retrieval. The project's scope allows for future enhancements, ensuring the system's relevance and adaptability over time.

### 1.4 Definitions, Acronyms and Abbreviations

JAVA -> platform independence

SQL-> Structured query Language

ER-> Entity Relationship

UML -> Unified Modeling Language

IDE-> Integrated Development Environment

SRS-> Software Requirement Specification

### 1.5 References

* Books

Software Requirements and Specifications: A Lexicon of Practice, Principles and



Prejudices (ACM Press) by Michael Jackson

Software Requirements (Microsoft) Second EditionBy Karl E. Wiegers



Software Engineering: A Practitioner’s Approach Fifth Edition By Roger S. Pressman

* Websites [**http://www.slideshare.net/**](http://www.slideshare.net/)



[**http://ebookily.net/doc/srs-library-management-system**](http://ebookily.net/doc/srs-library-management-system)

## 2. Overall Descriptions

### 2.1 Product Perspective

Use Case Diagram of Library Management System

Student

Staff

search\_book

verify\_member

check\_limit

check\_availability

calculate\_fine

User

View\_logs

issue\_book

>>

<<

include

return\_book

renew\_book

<<

include

>>

<<

include

>>

<<

extend

>>

*searches*

*requests*

*request\_renew*

*give\_book*

add\_book

Librarian

*monitors\_request*

*take\_book*

*monitors\_renew*

update\_record

*adds\_new\_book*

*perform\_transaction\_updation*

1

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1

1..\*

*performs*

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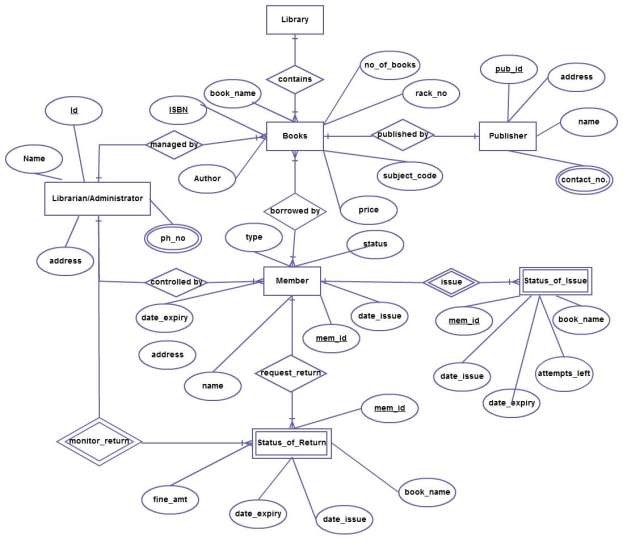
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1..\*

This is a broad level diagram of the project showing a basic overview. The users can be either staff or student.. This System will provide a search functionality to facilitate the search of resources. This search will be based on various categories viz. book name or the ISBN. Further the library staff personnel can add/update the resources and the resource users from the system.The users of the system can request issue/renew/return of books for which they would have to follow certain criteria.

### 2.2 Product Function

Entity Relationship Diagram of Library Management System



The Online Library System provides online real time information about the books available in the Library and the user information. The main purpose of this project is to reduce the manual work. This software is capable of managing Book Issues, Returns, Calculating/Managing Fine, Generating various Reports for Record-Keeping according to end user requirements. The Librarian will act as the administrator to control members and manage books. The member’s status of issue/return is maintained in the library database. The member’s details can be fetched by the librarian from the database as and when required. The valid members are also allowed to view their account information.

### 2.3 User Classes and Characteristics

User Classes and Characteristics for the Customer Relationship Management (CRM) System:

The CRM system caters to different user classes, primarily divided into Admin and User roles. The Admin, functioning as the controller, possesses comprehensive privileges akin to an administrator. In the context of a CRM system, the user classes and their characteristics could be outlined as follows:

**Admin** :

- Can manage user accounts and privileges.

- Accesses a variety of features, including:

- Viewing different categories of customers.

- Managing customer information and accounts.

- Monitoring reports on customer interactions and activities.

- Editing customer details and resolving issues.

**User** :

- Engages with customer-related functionalities, such as:

- Viewing customer information and interactions.

- Updating personal details and preferences.

- Accessing reports on individual customer history and activities.

- Placing orders, making inquiries, and providing feedback.

These user classes ensure a tailored experience, with Admins having control over system-wide settings and advanced functionalities, while Users focus on their specific interactions and engagements within the CRM system.

### 2.4 Operating Environment

The product will be operating in windows environment. The Customer Relationship Management System is a website and shall operate in all famous browsers, for a model we are taking Microsoft Internet Explorer, Google Chrome, and Mozilla Firefox. Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox & Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection.

The hardware configuration include Hard Disk: 40 GB, Monitor: 15” Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

### 2.5 Assumptions and Dependencies

Assumptions:

* The coding should be error-free.
* The system is designed to be user-friendly for easy usage by all users.
* Information about customers, interactions, and transactions is stored in a secure and accessible database.
* The CRM system is built with sufficient storage capacity and ensures fast access to the database.
* The system provides a search facility and supports quick transactions for efficient user experience.
* The CRM system operates 24 hours a day to meet the needs of users.
* Users can access the system from any computer with internet browsing capabilities and an internet connection.
* User authentication requires correct usernames and passwords for accessing online accounts and performing actions.

Dependencies:

* The CRM system relies on specific hardware and software configurations for proper functionality.
* Development and operation of the project are dependent on meeting listed requirements and specifications.
* End users, particularly administrators, must have a comprehensive understanding of the CRM system.
* The system requires the availability of general reports stored within its database.
* Information about all users must be stored in a database accessible by the CRM system.
* Any updates related to customer interactions or transactions should be accurately recorded in the database.

### 2.6 Requirement

Software Configuration:-

This software package is developed using java as front end which is supported by sun micro system. Microsoft SQL Server as the back end to store the database. Operating System: Windows NT, windows 98, Windows XP

Language: Java Runtime Environment, Net beans 7.0.1 (front end)

Database: MS SQL Server (back end)

Hardware Configuration:-

Processor: Pentium(R)Dual-core CPU

Hard Disk: 40GB

RAM: 256 MB or more

### 2.7 Data Requirement

The Customer Relationship Management (CRM) system operates based on user input queries, which include actions like account creation, product or service selection, and account updates. As users interact with the system, the output is generated in response to their queries, providing solutions and furnishing detailed information about their accounts. This information encompasses the time, date, and a comprehensive overview of the currently associated products or services within their accounts. The CRM system serves as a dynamic platform where users input requests, receive timely output solutions, and gain insights into the evolving details of their customer accounts.

## 3. External Interface Requirement

### 3.1 GUI

The system ensures a visually appealing graphical interface for both users and administrators, enabling seamless operation. Administrators can perform necessary tasks such as creating, updating, and viewing customer details.

* It allows users to generate prompt reports detailing customer interactions, purchases, or relevant metrics within specific timeframes. These reports serve as valuable tools for effective customer relationship management.
* It provides a robust stock verification feature in the CRM system, enabling users to search for customer information based on various criteria. This ensures efficient management and quick access to relevant customer data.
* It ensures a flexible user interface that administrators can customize according to their preferences within the CRM system. This adaptability enhances user experience and aligns the system with organizational needs.
* It guarantees that all modules seamlessly integrate into the graphical user interface of the CRM system and meet predefined standards. This ensures a cohesive user experience across different functionalities.
* It ensures that all interfaces adhere to standardized templates. This approach promotes consistency and ease of use across diverse functionalities.
* It establishes seamless interaction between the user interface of the CRM system and the user management module.

Login Interface:

Users can register by entering their details. Once registered, they can log in using a username and password. Incorrect entries trigger error messages.

Search Functionality:

Members or CRM users can search for specific customer information by entering relevant details such as customer type or name.

Categories View:

The interface provides a categorized view of customer information, allowing administrators to add, edit, or delete categories as needed.

Administrator Control Panel:

This control panel empowers administrators to manage users, add, edit, or remove customer resources, and oversee lending options. The GUI prioritizes efficiency and ease of use for effective customer relationship management.

## 4. System Features

The users of the system should be provided the surety that their account is secure. This is

possible by providing:

* Users undergo a robust authentication and validation process, utilizing unique customer IDs for verification within the CRM system.
* Administrators enjoy comprehensive monitoring capabilities, allowing real-time updates on account statuses. The system issues pop-up notifications when users attempt actions exceeding predefined limits, such as surpassing interaction quotas. Additionally, administrators can assign fines to users who fail to adhere to specified deadlines.
* Accountability is maintained by restricting member access solely to their individual accounts. Members lack the ability to view or manage other members' accounts, a privilege reserved exclusively for administrators, who oversee and manage all member accounts within the CRM system.

## 5. Other Non-functional Requirements

### 5.1 Performance Requirement

### Our proposed CRM system is designed to serve as the primary performance tool across various university campuses, facilitating interactions between university staff and students. The database is built to meet all specifications outlined by the university, ensuring seamless functionality. Key considerations for the CRM system include:

* Performance: The system prioritizes speed and accuracy, ensuring efficient operations for staff and students alike.
* Error Management: The CRM is equipped to handle both expected and unexpected errors, employing robust error-testing mechanisms. This prevents data loss and minimizes downtime, including measures to identify invalid login credentials swiftly.
* Scalability: Able to manage large volumes of data, the CRM effortlessly accommodates a vast array of user information and interactions without compromising performance or integrity.

### 5.2 Safety Requirement

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

### 5.3 Security Requirement

* A secured database will be employed to ensure the future integrity and protection of data in the CRM system.
* Normal users will have read-only access, preventing them from editing or modifying information, excluding personal details.
* Varied user types with distinct access constraints will be implemented for controlled future access within the CRM system.
* Robust user authentication mechanisms will be in place to securely authenticate user identities.
* Advanced security measures will be employed to prevent any unauthorized attempts to compromise future user passwords.
* Separate accounts for administrators and members will be established, ensuring that only administrators will have the future rights to update the CRM database, safeguarding against unauthorized access.

### 5.4 Requirement attributes

* There may be multiple admins creating the project, all of them will have the right to create changes to the system. But the members or other users cannot do changes
* The project should be open source
* The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database
* The user be able to easily download and install the system

### 5.5 Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data.This includes the rules and regulations that the System users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither admin nor member should cross the rules and regulations.

### 5.6 User Requirement

The system users consist of members and administrators, with members possessing basic computer and internet browsing knowledge. Administrators, acting as system maintainers, require a deeper understanding of system internals for troubleshooting and problem resolution. User education is facilitated through proper user interfaces, comprehensive user manuals, online help, and installation guides to ensure seamless system usage.

Administrators provide user facilities, including:

* Backup and Recovery Forgot Password
* Data migration i.e. whenever user registers for the first time then the data is stored in the server
* Data replication i.e. if the data is lost in one branch, it is still stored with the server
* Auto Recovery i.e. frequently auto saving the information
* Maintaining files i.e. File Organization
* The server must be maintained regularly and it has to be updated from time to time

## 6. Other Requirements

### 6.1 Data and Category Requirement

A Customer Relationship Management (CRM) system necessitates comprehensive data and category requirements to effectively manage customer interactions. Essential data includes customer information such as names, contact details, and purchase history. To categorize customers, segmentation criteria like demographics, industry, or buying behavior are crucial. Additionally, tracking communication history, including emails, calls, and meetings, is vital for a holistic view. Categories for activities, such as leads, opportunities, and support tickets, enable efficient workflow management. Integration with marketing and sales data ensures a unified approach across the customer lifecycle. Security measures should safeguard sensitive information, emphasizing the importance of access controls. In essence, a robust CRM system demands a well-organized and structured dataset aligned with the specific needs of the business to enhance customer engagement and satisfaction.

### 6.2 Appendix

In the context of a Customer Relationship Management (CRM) System, an appendix could be structured as follows:

A: Admin, API, Attributes; B: Business Processes, Backups; C: Contacts, Communication Logs, Customization; D: Dashboard, Data Encryption, Dependencies; E: Email Integration, Events Tracking; F: Feedback Mechanism, Forms; G: Goals and Targets, GUI Customization; I: Integration Points, Interface Design; K: Key Performance Indicators (KPIs); L: Lead Management, Logging; M: Marketing Campaigns, Mobile Compatibility; N: Notifications, Navigational Structure; P: Permissions, Performance Metrics; Q: Queries, Quick Search; R: Reports, Role-Based Access; S: Security Measures, Surveys; T: Task Management, Training Materials; U: User Roles, User Interface; V: Views, Validation Rules; W: Workflow Automation; X: (e)Xport Capabilities; Y: Yearly Review Metrics; Z: Zoom (for in-depth analysis). This structured appendix provides a quick reference to essential components and considerations for the CRM system.

### 6.3 Glossary

Glossary for the Customer Relationship Management (CRM) System:

- **Administrator** : A user with privileges for user administration in the CRM software.

- **User** : A general login ID assigned to most users accessing the CRM system.

- **Client** : The intended users of the CRM software, often referring to businesses or individuals utilizing the system.

- **SQL** : Structured Query Language; employed to retrieve information from a database.

- **SQL Server** : A server dedicated to storing data in an organized format within the CRM system.

- **Layer** : Represents a distinct section of the CRM project, often categorized as User Interface Layer, Application Logic Layer, and Data Storage Layer.

- **User Interface Layer** : The segment of the CRM system that users interact with directly.

- **Application Logic Layer** : The part of the CRM system responsible for computations and processing, often on the Web Server.

- **Data Storage Layer** : The section of the CRM system where all data is recorded and stored.

- **Use Case** : A high-level diagram providing a basic overview of the project, illustrating interactions and functionalities.

- **Class Diagram** : A static structure diagram describing the system's structure, including classes, their attributes, and relationships.

- **Interface** : A tool or mechanism facilitating communication across different components or systems in the CRM software.

- **Unique Key** : A database element used to differentiate entries and ensure uniqueness within the CRM system.

### 6.4 Class Diagram

A class is an abstract, user-defined description of a type of data. It identifies the attributes of the data and the operations that can be performed on instances (i.e. objects) of the data. A class of data has a name, a set of attributes that describes its characteristics, and a set of operations that can be performed on the objects of that class. The classes’ structure and their relationships to each other frozen in time represent the static model. In this project there are certain main classes which are related to other classes required for their working. There are different kinds of relationships between the classes as shown in the diagram like normal association, aggregation, and generalization. The relationships are depicted using a role name and multiplicities. Here ‘Librarian’, ‘Member’ and ‘Books’ are the most important classes which are related to other classes.

