SOFTWARE REQUIREMENTS SPECIFICATION

For

CUSTOMER RELATIONSHIP MANAGEMENT SYSTEM

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1. Introduction

1.1 Purpose

The main objective of this document is to illustrate the requirements of the project Customer Relationship Management System. The document gives the detailed description of the both functional and non-functional requirements proposed by the client .The purpose of this project is to create a strong bond between customers and the company .The ultimate goal of customer relationship management is to create long-term, mutually beneficial relationships with customers

by satisfying their needs and expectations. The main purpose of this project is to improve business relationships and helps companies stay connected to customers, streamline processes, and improve profitability. This project describes the hardware and software interface requirements using ER diagrams and UML diagrams.

1.2 Document Conventions

- Entire document should be justified.
    - Convention for Main title
    - Font face: Times New Roman
    - Font style: Bold
    - Font Size: 14
    - Convention for Subtitle
    - Font face: Times New Roman
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    - Font Size: 12
    - Convention for body
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    - Font Size: 12

1.3 Scope of Development Project

Customer Relationship Management is a term that refers to the various methods and technologies used to manage customer interactions. In recent years, CRM has become an increasingly important aspect of business, as companies seek to improve their relationships with customers and better understand their needs. The scope of CRM includes a wide range of activities, from managing customer contact information in developing personalized marketing campaigns. In order to be effective, CRM must be tailored to the specific needs of each business. As such, the scope of CRM can vary greatly from one company to the next. However, there are certain core elements that are essential for all successful CRM initiatives. These include the ability to capture and store customer data, the ability to track and analyse customer interactions, and the ability to automate customer-facing processes. By understanding the scope of CRM, businesses can be better equipped to develop strategies that will improve their relationship with customers and help them grow their businesses.

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

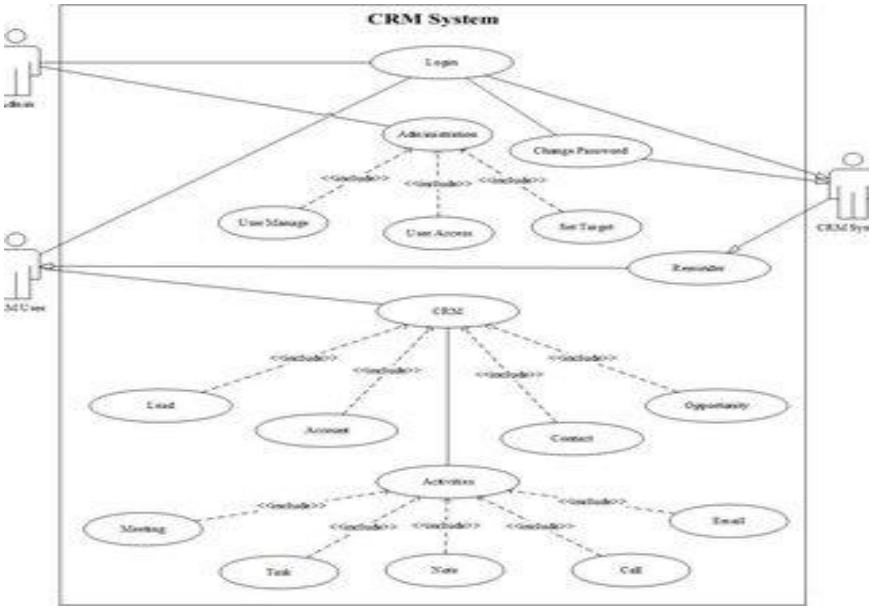
- Books
  - The Art of CRM: Proven strategies for modern customer relationship management

  - Software Requirements (Microsoft) Second EditionBy Karl E. Wiegers
  - Software Engineering: A Practitioner's Approach Fifth Edition By Roger S. Pressman
    - Websites
  - https://magenest.com/en/crm-scope/
  - https://www.salesforce.com/in/crm/what-is-crm/
    https://www.investopedia.com/terms/c/customer_relation_management.asp

2. Overall Descriptions

2.1 Product Perspective

Use Case Diagram of Customer relationship management system.

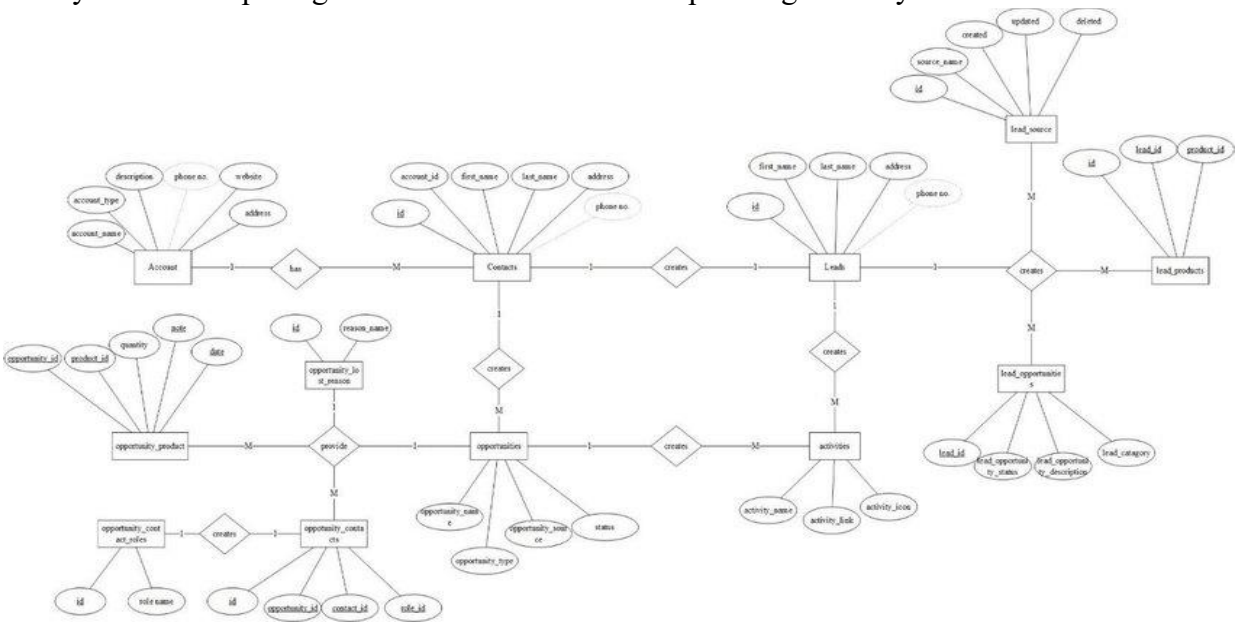


The Customer Relationship Management (CRM) system's use case diagram depicts the primary interactions and functionalities of the system. The diagram showcases key actors such as customers, sales representatives, and administrators engaging in various use cases. Customer-related interactions include account registration, profile management, and inquiry submissions. Sales representatives utilize the system for customer data analysis, lead tracking, and order processing. Administrators, on the other hand, manage user roles, system configurations, and generate reports. Additionally, the CRM system supports cross-functional use cases like communication logging, feedback management, and customer support. Through this comprehensive use case diagram, the CRM system aims to streamline and enhance the overall

customer relationship management process, ensuring effective communication, data-driven decision-making, and improved customer satisfaction.

2.2 Product Function

Entity Relationship Diagram of Customer relationship management system.



The Entity-Relationship (ER) diagram for Customer Care Relationship Management (CRM) in the Software Requirements Specification (SRS) depicts the core entities and their relationships within the system. The primary entities include "Customer," representing individuals availing the services, and "Support Ticket," denoting the customer queries or issues. These entities are interconnected through a one-to-many relationship, illustrating that a customer can have multiple support tickets. The diagram also includes an "Agent" entity representing customer support personnel, linked to the Support Ticket entity through a many-to-one relationship, indicating that an agent can handle multiple support tickets. Additional attributes like "Ticket Status" and "Customer Feedback" enrich the model, providing insights into the support process and customer satisfaction. Overall, the ER diagram comprehensively illustrates the structural foundation for effective customer care and relationship management in the CRM system.

2.3 User Classes and Characteristics

Using the Customer Relationship Management (CRM) System, we can identify several user classes along with their characteristics. User classes represent different categories of users who will interact with the system. Here are some potential user classes for the CRM system: monitor user activities, and ensure the overall integrity and security of the CRM system.

The features that are available to the Customers are:-

- Access to personal account information.
- Ability to update personal details.
- View and track interactions with the company.
- Provide feedback and reviews.
- Access to personalized marketing campaigns.

The features that are available to the Sales Representative are:-

- Manage customer accounts and contacts.
- Record and update customer interactions.
- View customer history and preferences.
- Generate and track leads.
- Access to analytics for customer behavior.

The features that are available to the Marketing Professional are :-

- Create and manage personalized marketing campaigns.
- Analyze customer data for targeted marketing.
- Track the effectiveness of marketing strategies.
- Segment customers based on preferences.
- Access to customer feedback and reviews.

The features that are available to the Administrator are :-

- Manage user accounts and permissions.
- Configure and customize the CRM system.
- Monitor system performance and security.
- Generate reports on overall system usage.
- Ensure data integrity and system reliability.

The features that are available to the IT Support Staff are:-

- Provide technical support for CRM system users.
- Troubleshoot and resolve technical issues.
- Perform regular system maintenance.
- Ensure data backup and recovery procedures.
- Collaborate with administrators for system upgrades.
- Management/Executives:
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- Access high-level reports and analytics.
- Monitor overall business performance.
- Set strategic goals and objectives.
- Make informed decisions based on CRM data.
- Collaborate with other departments for business growth.

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

The assumptions are:-

- The coding should be error free
- The system should be user-friendly so that it is easy to use for the users
- The information of all users, must be stored in a database that is accessible by the website
- The system should have more storage capacity and provide fast access to the database
- The system should provide search facility and support quick transactions
- The Customer relationship management System is running 24 hours a day
- Users may access from any computer that has Internet browsing capabilities and an Internet connection
- Users must have their correct usernames and passwords to enter into their online accounts and do actions

The dependencies are:-

- The specific hardware and software due to which the product will be run
- On the basis of listing requirements and specification the project will be developed and run
- The end users (admin) should have proper understanding of the product
- The system should have the general report stored
- The information of all the users must be stored in a database that is accessible by the appropriate organization.
- Any update regarding the customer is to be recorded to the database and the data entered should be correct.

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 inputs consist of the query to the database and the output consists of the solutions for the query. The output also includes the organization users receiving the details of the accounts of customers. In this project the inputs will be the queries as fired by the users like create an account, filling their details and adding suggestions. Now the output will be visible when the user requests the server to get details of their account in the form of time, date and the deatils and the suggestions, ratings provided by the customers.

3. External Interface Requirement

3.1 GUI

The software provides good graphical interface for the user and the administrator can operate on the system, performing the required task such as create, update, viewing the details of the customers.

- The software ensures a user-friendly graphical interface for both users and administrators.
- The administrator has the capability to perform essential tasks, including creating, updating, and viewing customer details.
- The user interface must be customizable by the administrator
- All the modules provided with the software must fit into this graphical user interface and accomplish to the standard defined
- The design should be simple, and all the different interfaces should follow a standard template
- The user interface should be able to interact with the customer management module and a part of the interface must be dedicated to the login/logout module.

Login Interface: -
In case the user is not yet registered, he can enter the details and register to create his account. Once his account is created he can 'Login' which asks the user to type his username and password. If the user entered either his username or password incorrectly then an error message appears.

Categories View:-
Categories view shows the categories of customers and provides ability to the ones with access to add/edit or delete from the list.

Administrator's Control Panel:-
This control panel will allow them to add/remove users; add, edit, or remove a resource. And manage lending options.

4. System Features

The users of the system should be provided the surety that their account is secure. This is possible by providing:-

- User authentication and validation of members using their unique member ID
- Proper monitoring by the administrator which includes updating account status, showing a popup if any customer provides any suggestions or ratings on the product or service.
- Proper accountability which includes not allowing all users to access the information of the customers. Only administrator will see and manage all member accounts .

5. Other Non-functional Requirements

5.1 Performance Requirement

The proposed system that we are going to develop will be used as the Chief performance system within the different campuses of the university which interacts with the university staff and students. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the university.

- The performance of the system should be fast and accurate
- Library Management System shall handle expected and non-expected errors in ways that prevent loss in information and long downtime period. Thus it should have inbuilt error testing to identify invalid username/password
- The system should be able to handle large amount of data. Thus it should accommodate high number of books and users without any fault

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

- System will use secured database
- Normal users can just access only information but they cannot edit or modify anything except their personal and some other information.
- System will have different types of users and every user has access constraints
- Proper user authentication should be provided ➢ No one should be able to hack users' password
- There should be separate accounts for admin and members such that no member can access the database and only admin has the rights to update the database.

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, decide, 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 users of the system are members and Librarian of the university who act as administrator to maintain the system. The members are assumed to have basic knowledge of the computers and internet browsing. The administrators of the system should have more knowledge of the internals of the system and is able to rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to maintain the system. The proper user interface, user manual, online help and the guide to install and maintain the system must be sufficient to educate the users on how to use the system without any problems.

The admin provides certain facilities to the users in the form of:-

- 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 must be updated from time to time

6. Other Requirements

6.1 Data and Category Requirement

There are different categories of users namely teaching sales representatives, sales managers, marketing professionals, customer support and service teams, IT administrators, etc. Depending upon the category of user the access rights are decided.It means if the user is an administrator then he can be able to modify the data,delete, append etc. All other users only have the rights to retrieve the information about database. Similarly there will be different categories of customers. According to the categories of customers their relevant data should be displayed. The categories and the data related to each category should be coded in the particular format.

6.2 Appendix

A: Admin, Abbreviation, Acronym, Assumptions; B: Books, Business rules; C: Class, Client, Conventions; D: Data requirement, Dependencies; G: GUI; K: Key; L: Library, Librarian; M: Member; N: Non-functional Requirement; O: Operating environment; P: Performance,Perspective,Purpose; R: Requirement, Requirement attributes; S: Safety, Scope, Security, System features; U: User, User class and characteristics, User requirement;

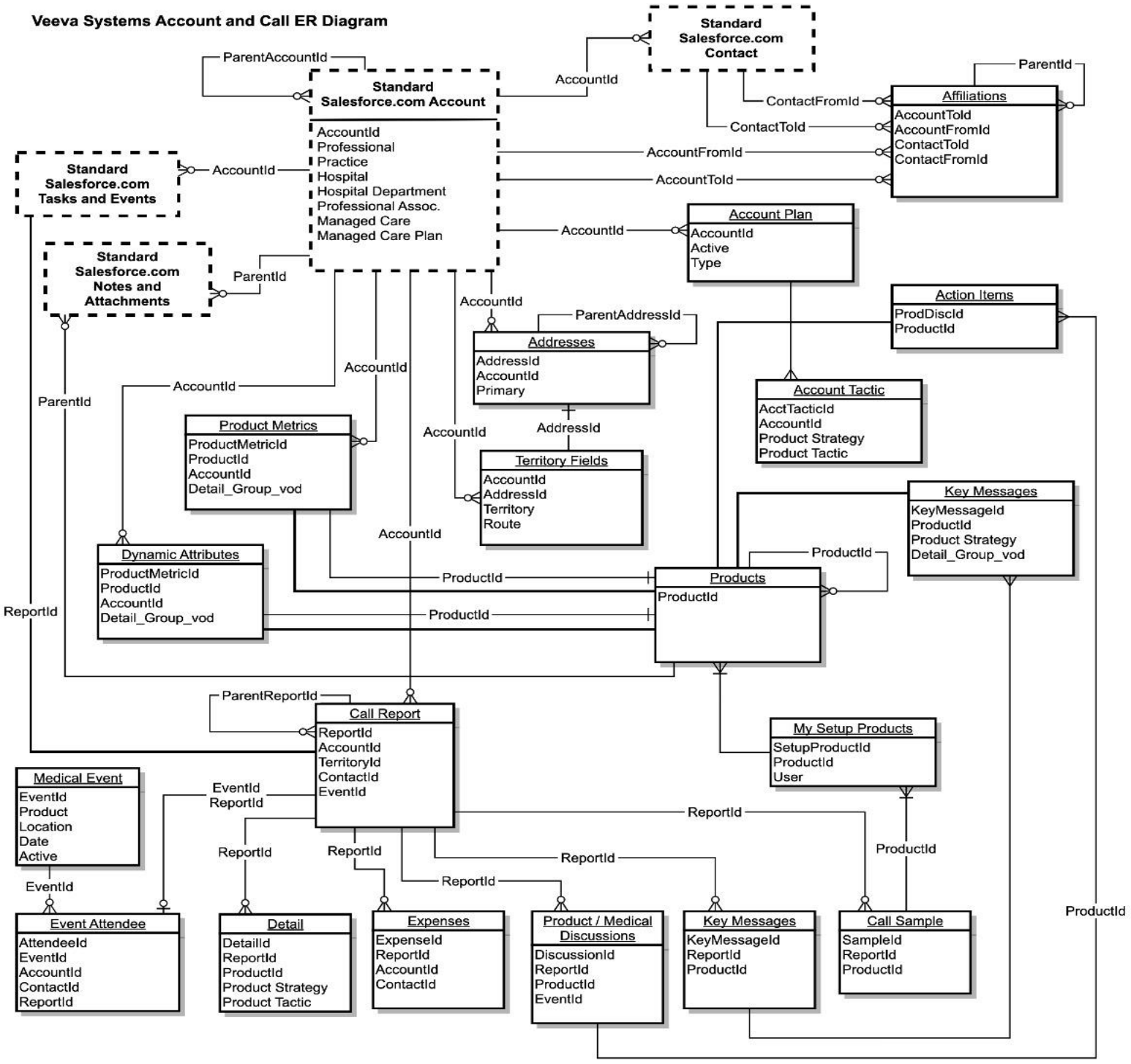
6.3 Glossary

The following are the list of conventions and acronyms used in this document and the project as well:

- Administrator: A login id representing a user with user administration privileges to the software
- User: A general login id assigned to most users
- Client: Intended users for the software
- SQL: Structured Query Language; used to retrieve information from a database
- SQL Server: A server used to store data in an organized format
- Layer: Represents a section of the project
- User Interface Layer: The section of the assignment referring to what the user interacts with directly
- Application Logic Layer: The section of the assignment referring to the Web Server. This is where all computations are completed
- Data Storage Layer: The section of the assignment referring to where all data is recorded
- Use Case: A broad level diagram of the project showing a basic overview
- Class diagram: It is a type of static structure diagram that describes the structure of a system by showing the system's cases, their attributes, and the relationships between the classes
- Interface: Something used to communicate across different mediums
- Unique Key: Used to differentiate entries in a database

6.4 Class Diagram

The class diagram for a Customer Relationship Management (CRM) system provides a comprehensive representation of the system's structure and interactions between key entities. At its core, the diagram includes essential classes such as Customer, Sales, Support, Marketing, User, Product, Activity Log, and Invoice. The Customer class encapsulates details about clients, including personal information and interactions. The Sales class manages sales transactions, linking to products and generating invoices. Support class handles customer tickets, tracking their lifecycle from creation to resolution. Marketing class orchestrates campaigns, associating responses with individual customers. The User class encompasses system users with various roles, while the Product class details offerings and their inventory. The Activity Log class records user interactions and system activities for monitoring and reporting. Finally, the Invoice class captures financial transactions associated with sales. Relationships between these classes, expressed through associations, showcase the dependencies and connections that form the backbone of a CRM system, enabling efficient customer management, sales tracking, and strategic decision-making.


Veeva Systems Account and Call ER Diagram
Standard Salesforce.com Contact
Standard Salesforce.com Account
AccountId
Professional
Practice
Hospital
Hospital Department
Professional Assoc.
Managed Care
Managed Care Plan
ParentAccountId
Standard Salesforce.com Tasks and Events
Standard Salesforce.com Notes and Attachments
Affiliations
AccountToId
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ContactFromId
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AccountId
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ParentAddressId
Account Tactic
AcctTacticId
AccountId
Product Strategy
Product Tactic
Product Metrics
ProductMetricId
ProductId
AccountId
Detail_Group_vod
Territory Fields
AccountId
AddressId
Territory
Route
Key Messages
KeyMessageId
ProductId
Product Strategy
Detail_Group_vod
Dynamic Attributes
ProductMetricId
ProductId
AccountId
Detail_Group_vod
Products
ProductId
Call Report
ReportId
AccountId
TerritoryId
ContactId
EventId
ParentReportId
My Setup Products
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ProductId
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Product
Location
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Event Attendee
AttendeeId
EventId
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ReportId
Detail
DetailId
ReportId
ProductId
Product Strategy
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Expenses
ExpenseId
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