# Software Requirements Specification

## for

# Customer Relationship Management System (CRM)

**Project: CRM System**

**Document: SRS**

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**Published on: 2024-03-26**

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# 1. Introduction

## 1.1 Purpose

*The purpose of this Software Requirements Specification (SRS) document is to outline the requirements and functionalities of a Customer Management System (CMS), also known as a Customer Relationship Management (CRM) system. This document aims to provide a comprehensive understanding of the scope, features, and objectives of the proposed system.*

*The CRM described herein addresses the limitations and challenges faced by traditional methods of managing customer relationships. By leveraging technology, the system aims to streamline and optimize interactions with customers and potential customers across various departments within an organization.*

## 1.2 Document Conventions

*This Software Requirements Specification (SRS) document follows the following conventions:*

- ***Priority Levels****: Each requirement statement is assigned its own priority level to indicate its importance and urgency. Priorities are denoted using a standardized scale, where higher numbers indicate higher priority. The priority levels help stakeholders and development teams prioritize tasks and allocate resources effectively.*

- ***Formatting****: The document utilizes standard formatting conventions to enhance readability and comprehension. Headings, subheadings, and bullet points are used consistently to organize information hierarchically and emphasize key points. Additionally, relevant information may be highlighted using bold text or italics to draw attention to important details.*

- ***Terminology:*** *Special attention is given to the consistent use of terminology throughout the document. Key terms and concepts are defined upfront to establish a common understanding among stakeholders and prevent confusion or misinterpretation.*

## 1.3 Intended Audience and Reading Suggestions

*The intended audience for this Software Requirements Specification (SRS) document includes:*

1. ***Developers:*** *Those responsible for designing, implementing, and testing the Customer Relationship Management System (CRM) based on the specified requirements.*
2. ***Project Managers:*** *Individuals overseeing the development process, resource allocation, and timeline management.*
3. ***Marketing Staff:*** *Those involved in promoting and positioning the CRM to potential clients or end-users.*
4. ***Users:*** *Individuals who will interact with the CRM regularly, including sales representatives, customer service agents, administrators, and managers.*
5. ***Testers:*** *Individuals responsible for verifying and validating the functionality of the CRM through various testing methods.*

6. **Documentation Writers**: Those tasked with creating user manuals, guides, and other documentation related to the CRM.

## 1.4 Project Scope

The software being specified is a Customer Relationship Management System (CRM), designed to serve as a comprehensive solution for managing and enhancing relationships with customers and potential customers across various departments within an organization.

The primary purpose of the CRM is to
- Streamline customer interactions
- Improve operational efficiency
- Drive business growth by providing a centralized platform for managing customer data, communication, and engagement.

# 2. Overall Description

## 2.1 Product Perspective

The Customer Management System (CMS) specified in this SRS is a new, self-contained product designed to address the challenges and limitations of traditional customer management methods. It is not a follow-on member of a product family nor a replacement for existing systems, but rather a standalone solution aimed at improving customer relationships, enhancing operational efficiency, and driving business growth.

The CMS serves as a central platform for managing customer interactions and relationships across various departments within an organization, including sales, marketing, customer service, administration, finance, project management, HR, and workflow automation.

## 2.2 Product Features

The Customer Relationship Management System (CRM) encompasses a range of features and functions aimed at improving customer relationships, enhancing operational efficiency, and driving business growth. The major features of the CMS include:

1. **Customer Relationship Management:**

   - Centralized customer database
   - Contact management
   - Interaction tracking
   - Customer segmentation and targeting

2. **Sales Management:**

   - Sales pipeline management
   - Quote and proposal generation
   - Sales forecasting
   - Order management
   - Sales performance analytics

### 3. Marketing Automation:

- Campaign management
- Email marketing
- Social media integration
- Lead scoring and nurturing
- Marketing analytics and reporting

### 4. Customer Service and Support:

- Ticketing system
- Helpdesk management
- Case escalation and resolution
- Knowledge base management
- Customer feedback and satisfaction surveys

### 5. Administration and Workflow Automation:

- User access control and permissions
- Task and calendar management
- Document management
- Workflow automation and routing
- Alerts and notifications

### 6. Project Management:

- Project planning and scheduling
- Task assignment and tracking
- Milestone management
- Time and expense tracking
- Collaboration tools and communication channels

### 7. Financial Management:

- Invoicing and billing
- Expense management
- Financial Reporting
- Budgeting and forecasting
- Integration with accounting systems

### 8. Human Resources (HR) Management:

- Employee database
- Attendance and leave management
- Performance evaluation
- Training and development tracking
- Compliance management

## 2.3  Operating Environment

*The Customer Relationship Management System (CRM) will operate in a diverse environment, accommodating various hardware platforms, operating systems, and software components. The specific operating environment for the CMS includes:*

1.  **Hardware Platform:**
    *   *Desktop computers*
    *   *Laptops*
    *   *Servers (on-premises or cloud-based)*
    *   *Mobile devices (smartphones, tablets)*

2.  **Operating Systems:**
    *   *Microsoft Windows: Windows 10 or later*
    *   *macOS: macOS 10.14 (Mojave) or later*
    *   *Linux distributions: Ubuntu*
    *   *Mobile operating systems: iOS, Android*

3.  **Web Browsers:**

    *   *Google Chrome*
    *   *Mozilla Firefox*
    *   *Microsoft Edge*
    *   *Safari*

4.  **Integration with External Systems:**
    *   *Email clients (e.g., Gmail, Outlook)*
    *   *Social media platforms (e.g., Facebook, Twitter)*

## 2.4  User Documentation

*The following user documentation components will be delivered along with the Customer Management System (CMS) software:*

1.  **User Manual:**
    *   *A comprehensive guide outlining the features, functionalities, and usage instructions of the CMS.*
2.  **Online Help:**
    *   *Interactive help system integrated within the CRM interface, providing context-sensitive assistance to users.*
3.  **Release Notes:**
    *   *Documentation detailing the changes, enhancements, and bug fixes introduced in each software release.*

# 3. System Features

*The system features of the Customer Management System (CMS) are organized according to the major services provided by the product. These features encompass various functionalities and capabilities aimed at facilitating effective customer relationship management, improving operational efficiency, and driving business growth. The features are categorized into different sections based on their primary focus areas.*

## 3.1 Use Case Diagram:
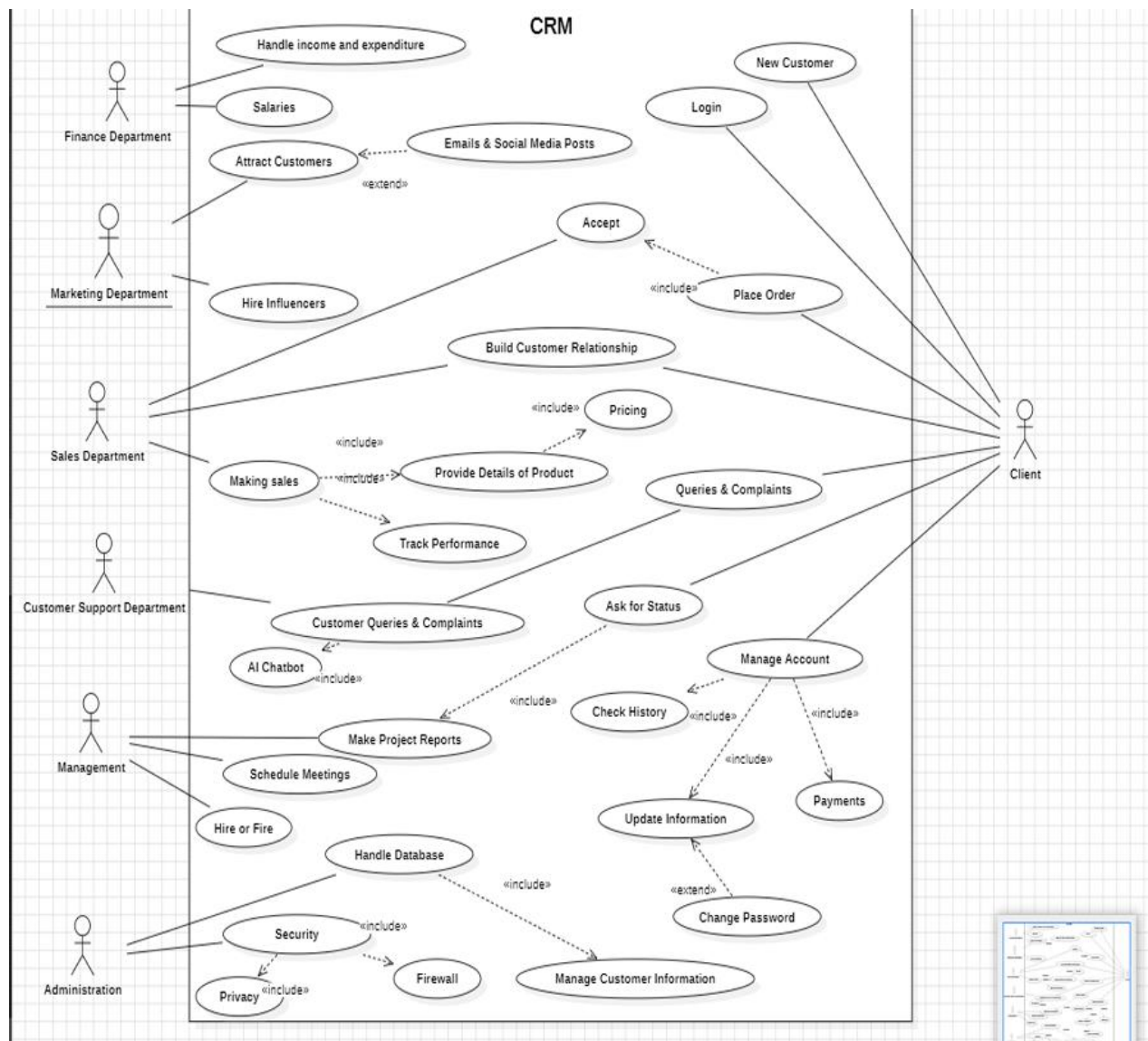
1. **Finance Department:**
   - Handle Income and Expenditure
   - Manage all company expenditures and financial transactions.
   - Salaries
   - Process and disburse employee salaries.

2. **Marketing Department:**
   - Attract Customers
   - Extend emails, social media posts, and create attractive marketing materials to attract customers.
   - Hire Influencers
   - Collaborate with influencers for marketing activities.

3. **Sales Department:**
   - Build Customer Relationship
   - Develop and maintain strong relationships with clients/customers.
   - Making Sales
   - Provide product details, pricing, and track project performance.
   - Accept Order
   - Review and accept customer orders.

4. **Customer Support Department:**
   - Customer Queries and Complaints
   - Handle customer queries and complaints, including the use of a chatbot.

5. **Management:**
   - Hiring/Firing of Employees
   - Manage employee recruitment and termination processes.
   - Schedule Meetings
   - Schedule client meetings regularly.
   - Make Project Reports
   - Generate project reports for client review.

6. **Administration:**
   - Handle Database
   - Store and manage customer information securely.
   - Security
   - Ensure data privacy, and implement firewall security measures.

7. **Client**:
   1. Login
      - Access the platform with secure credentials.
   2. New Customer
      - Register for a new account on the platform.
   3. Manage Account
      - View account history, update information, and check payments.
   4. Place Order
      - Submit orders for products or services.
   5. Build Customer Relationship
      - Engage with the company to foster trust and loyalty.
   6. Queries and Complaints
      - Communicate inquiries or register complaints.
   7. Ask for Status
      - Request project status updates and reports.

## 3.2  Class Diagram:
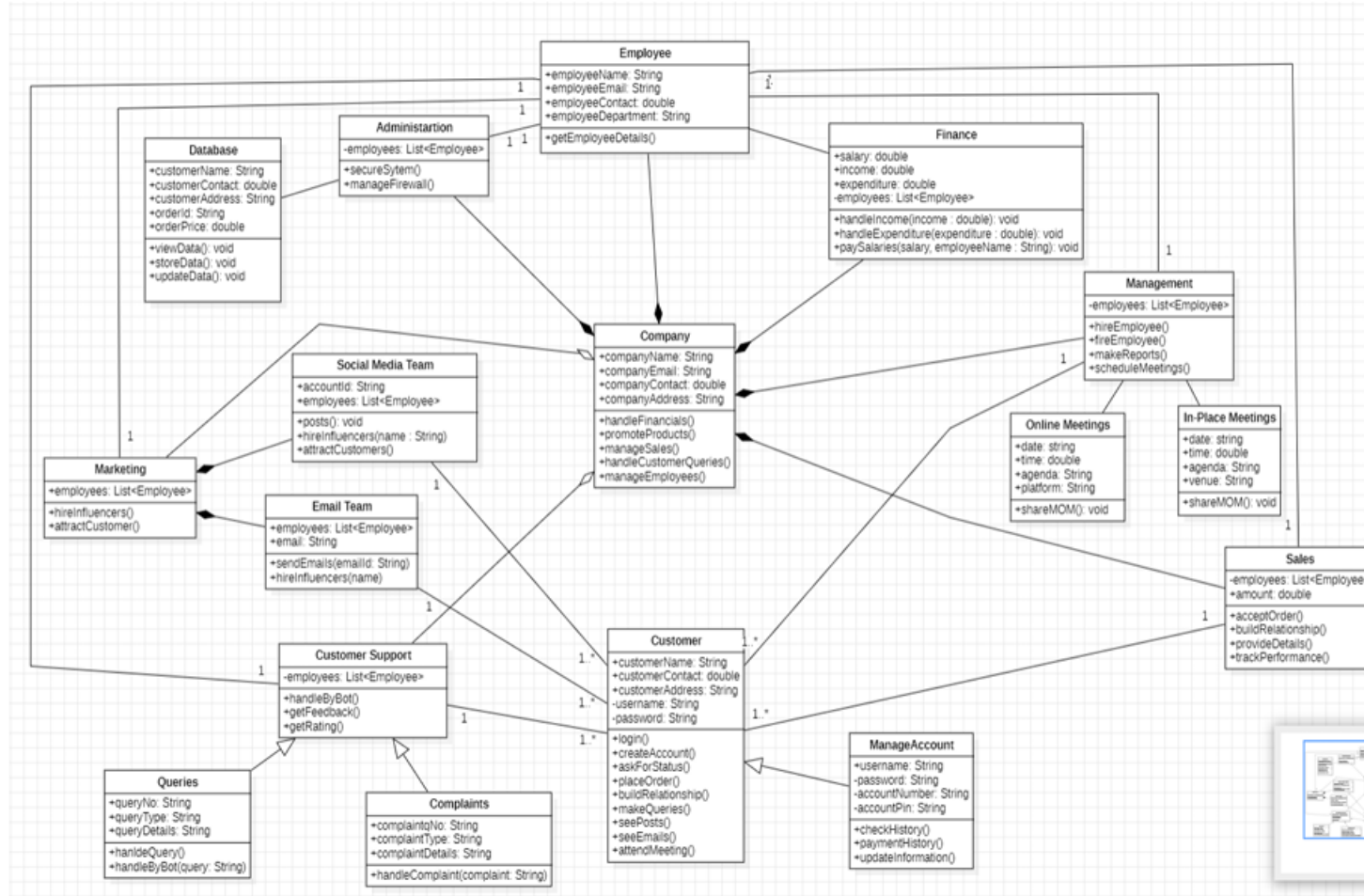


### 1. Company Class
- **Attributes:**
  - Company Name: String
  - Company Email: String
  - Company Contact: String
  - Company Address: String
- **Methods:**
  - handleFinancials()
  - promoteProducts()
  - manageSales()
  - handleCustomerQueries()
  - manageEmployees()
- **Relationships:**
  - Composition with Finance, Administration, and Management
  - Aggregation with Customer Support and Marketing

### 2. Marketing
- **Attributes:**
  - List of Employees: List<Employee>
- **Methods:**
  - hireInfluencers()

- attractCustomers()
- **Relationships:**
    - Composition with Social Media and Email

## 3.Social Media
- **Attributes:**
    - Account Id: String
    - List of Employees: List<Employee>
- **Methods:**
    - hireInfluencers()
    - attractCustomers()
    - posts ()
- **Email**
    - **Attributes:**
        - Email Id: String
        - List of Employees: List<Employee>
    - **Methods:**
        - hireInfluencers()
        - sendEmails()

## 4. Finance
- **Attributes:**
    - Salary: double
    - Expenditure: double
    - Income: double
    - List of Employees: List<Employee>
- **Methods:**
    - handleIncome()
    - promoteExpenditures()
    - paySalaries()
- **Relationships:**
    - Composition with Company

## 5.Sales
- **Attributes:**
    - List of Employees: List<Employee>
    - Amount: double
- **Methods:**
    - acceptOrder()
    - buildRelationship()
    - provideDetails()
    - trackPerformance()
- **Relationships:**
    - Association with Customer
    - Composition with Company

## 6. Customer Support
- **Attributes:**
    - List of Employees: List<Employee>
- **Methods:**
    - getFeedback()
    - getRating()
    - handleByBot()
- **Relationships:**

- Aggregation with Company
- **Queries**
  - **Attributes:**
    - Query No: String
    - Query Type: String
    - Query Details: String
  - **Methods:**
    - handleQuery()
    - handleByBot()
- **Complaints**
  - **Attributes:**
    - Complaint No: String
    - Complaint Type: String
    - Complaint Details: String
  - **Methods:**
    - handleComplaint()

# 7. Management
- **Attributes:**
  - List of Employees: List<Employee>
- **Methods:**
  - hireEmployee()
  - fireEmployee()
  - makeReports()
  - scheduleMeetings()
- **Relationships:**
  - Composition with Company
- **Online Meetings**
  - **Attributes:**
    - date: String
    - time: String
    - agenda: String
    - platform: String
  - **Methods:**
    - shareMOM()
- **In-Place Meetings**
  - **Attributes:**
    - date: String
    - time: String
    - agenda: String
    - venue: String
  - **Methods:**
    - shareMOM()

# 8. Administration
- **Attributes:**
  - List of Employees: List<Employee>
- **Methods:**
  - secureSystem()
  - manageFirewall()
- **Relationships:**
  - Composition with Company

# 9. Database
- **Attributes:**
  - Customer Name: String

- Customer Contact: String
- Customer Address: String
- Order Id: String
- Order Price: Double
- **Methods:**
  - viewData()
  - storeData()
  - updateData()
  - deleteData()

## 10. Employee
- **Attributes:**
  - Employee Name: String
  - Employee Email: String
  - Employee Contact: String
  - Employee Department: String
- **Methods:**
  - getEmployeeDetails()
- **Relationships:**
  - Association with Departments
  - Composition with Company

## 11. Customer
- **Attributes:**
  - Customer Name: String
  - Customer Email: String
  - Customer Contact: String
  - Customer Address: String
  - Customer Username: String
  - Customer Password: String
- **Methods:**
  - login()
  - createAccount()
  - askForStatus()
  - placeOrder()
  - buildRelationship()
  - makeQueries()
  - seePosts()
  - seeEmails()
  - attendMeetings()
- **Relationships:**
  - Association with Sales, Customer Support, and Management
  - **Manage Account**
  - **Attributes:**
    - Username: String
    - Password: String
    - Account Number: String
    - Account Pin: String
  - **Methods:**
    - checkHistory()
    - paymentHistory()
    - updateInformation()

## 3.3 ActivityDiagram:
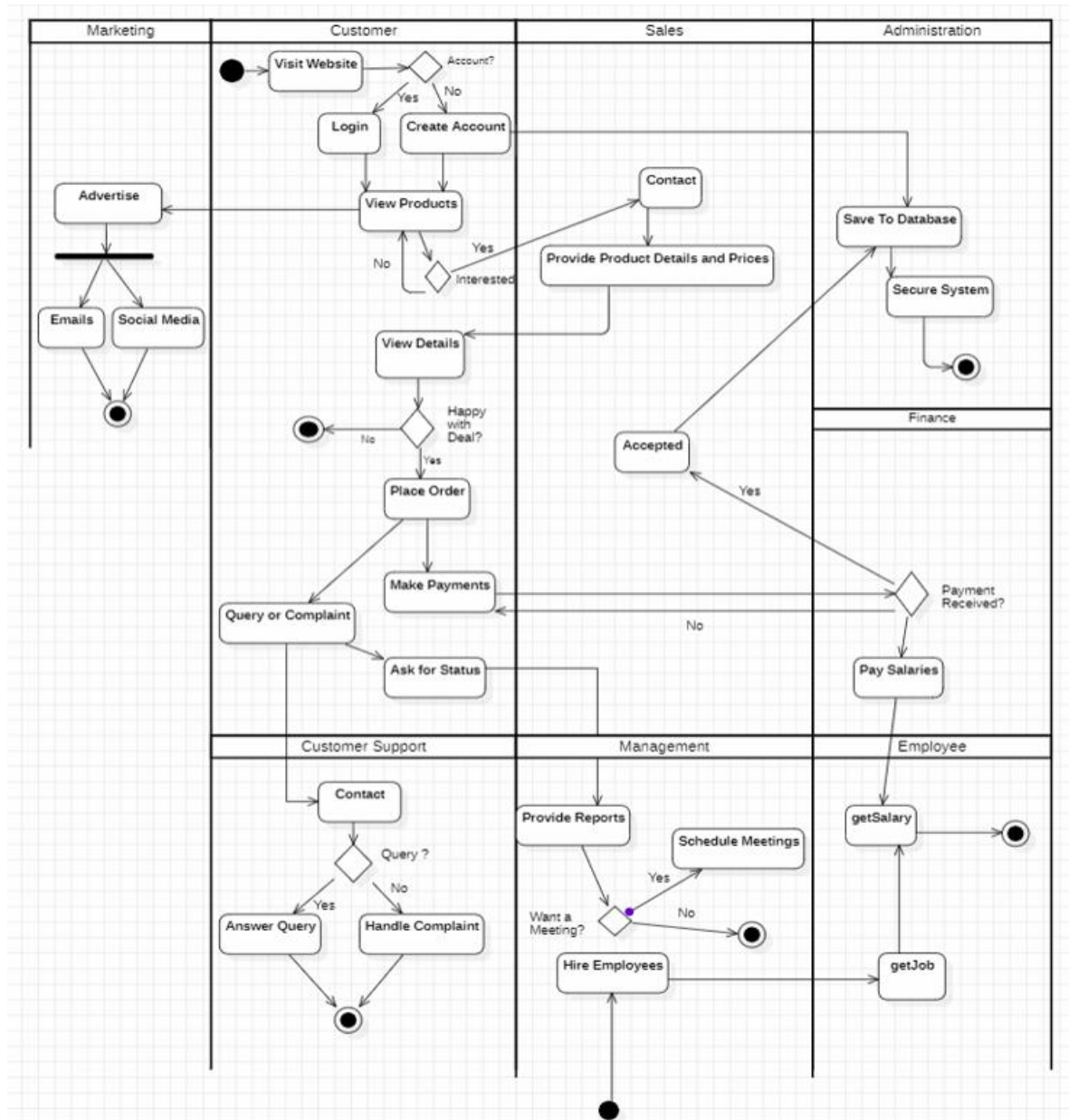
## Flow of Activities:

☐ **Marketing Initiatives:**
- The marketing team launches promotional activities via email campaigns and social media postings to inform customers about current offers and products.
- Existing customers access a dedicated section on the website to view marketing posts.
- New visitors are prompted to create an account, with their details securely stored by the administration team for future reference.

☐ **Customer Engagement:**
- Interested customers approach the Sales Department for further information on showcased products/services.
- Sales representatives engage with customers, providing comprehensive details and pricing structures, and initiating the relationship-building process.

☐ **Order Placement and Payment:**
- Customers proceed with a purchase, placing an order upon satisfactory discussion.
- The Finance Department oversees the payment process, ensuring successful fund transfers into the company's bank account.

☐ **Order Confirmation and Documentation:**
- Upon payment verification, the Sales Department confirms the order and provides customers with detailed information on subsequent processes.
- Customer details and purchased products are recorded and maintained in the company's database by the administration team for efficient management and future reference.

☐ **Performance Monitoring and Reporting:**
- The sales department continuously monitors the overall sales process, analysing metrics and identifying areas for improvement.
- The management team provides comprehensive reports to clients and schedules meetings, online or in-person, to address queries or concerns.

☐ **Customer Support and Financial Management:**
- The Customer Support Department promptly assists in resolving customer inquiries or complaints, ensuring satisfaction and retention.
- The Finance Department manages all financial transactions related to product expenses and ensures timely disbursement of employee salaries, contributing to smooth business operations.

## 3.4 Sequence Diagram:
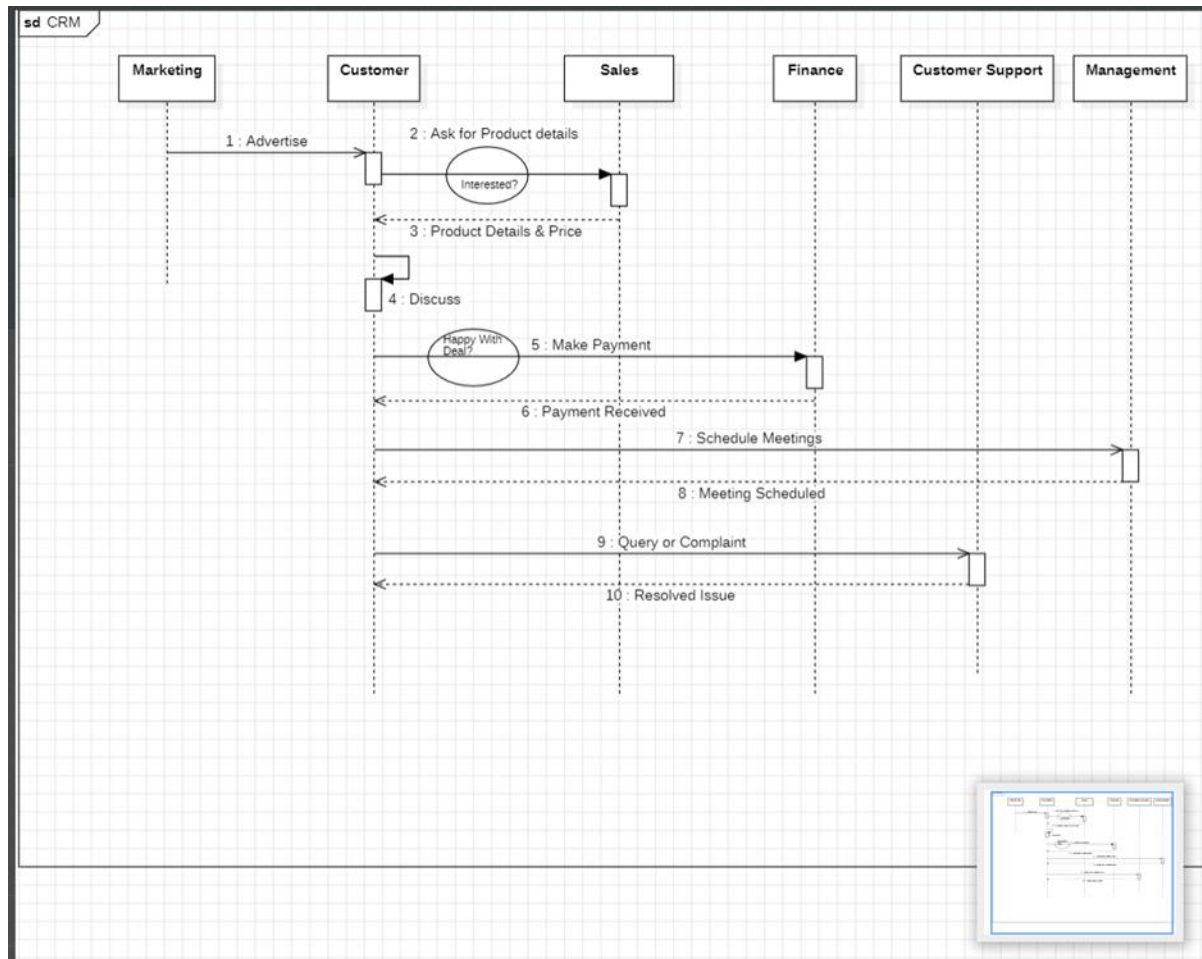
## Sequence of Activities

1. **Advertisement Campaign Initiation:**
   - The Marketing Team launches an advertisement campaign for their product, targeting potential customers.

2. **Customer Inquiry:**
   - Interested customers approach the Sales Team to inquire about product specifications, features, and pricing details.

3. **Sales Response:**
   - The Sales Team promptly responds to customer inquiries, providing comprehensive details about the product and its pricing.

4. **Customer Evaluation:**
   - Customers engage in internal discussions and deliberations to evaluate the product and decide.

5. **Payment Processing:**
   - If satisfied with the terms, the customer proceeds to make the payment for the product.

6. **Financial Analysis and Confirmation:**
   - The Finance Department analyses the company's financial transactions, including incoming payments. Upon successful payment processing, the Finance Department confirms acceptance and notifies the customer.

7. **Meeting Arrangement:**
   - If the customer wishes to arrange a meeting, they can contact the Management Team to schedule either an online or in-person meeting.

8. **Meeting Confirmation:**
   - The Management Team responds by providing detailed meeting arrangements, including the venue, date, and agenda.
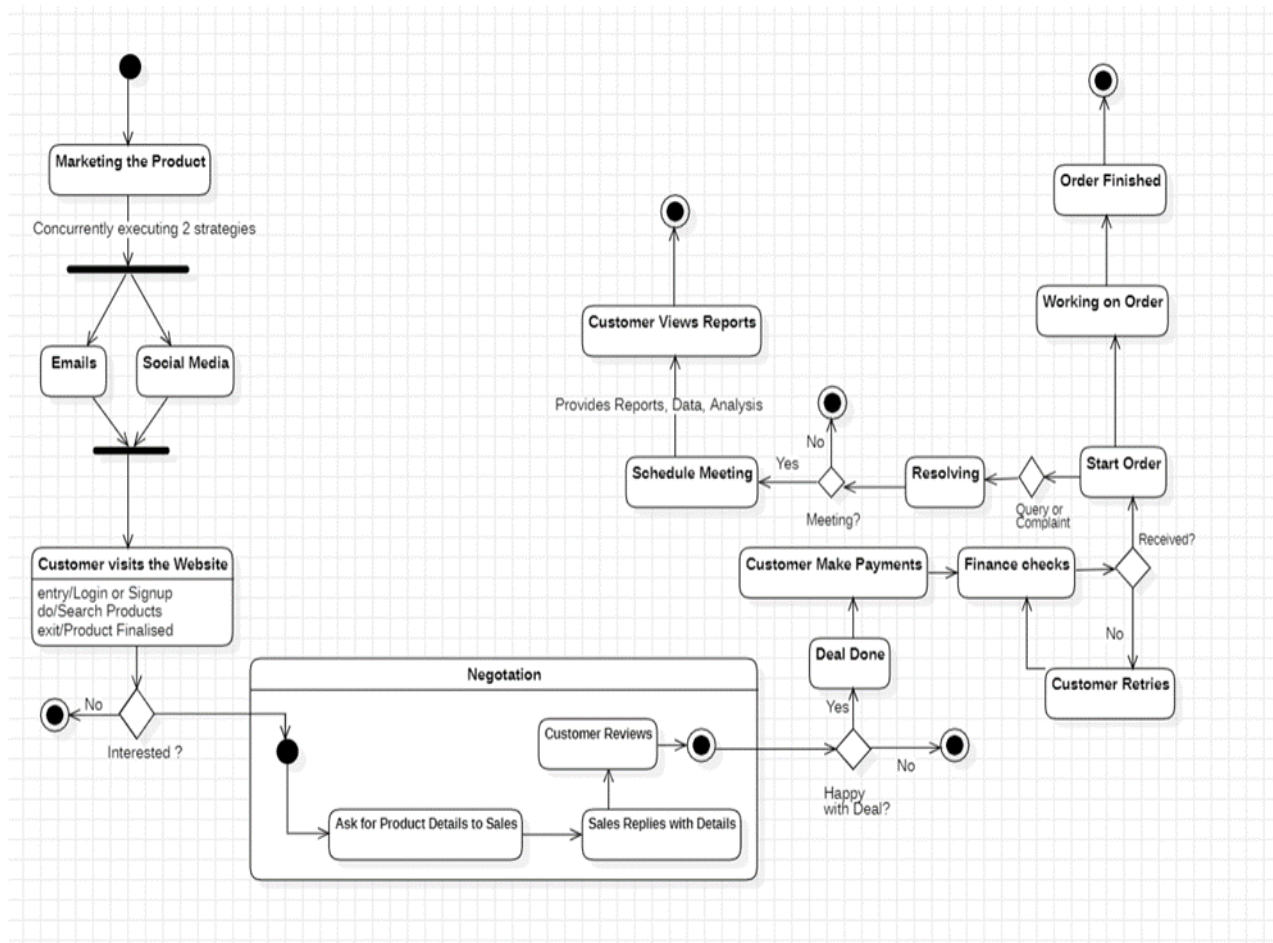
9. **Customer Support:**
   - In case of any queries or complaints, customers can reach out to the Customer Support Department for assistance.

10. **Issue Resolution:**
    - The Customer Support Department promptly addresses customer inquiries or complaints, providing suitable resolutions and ensuring customer satisfaction.

## 3.5 State Diagram:



☐ **Marketing Product (Concurrent Strategies):**
- The initial state where the product is marketed concurrently via email campaigns and social media postings.

☐ **Customer Interaction:**
- Upon viewing the marketing efforts, customers visit the website where they can either log in or sign up.
- They proceed to search for the product and exit this state upon finalizing their selection.

☐ **Decision Making:**
- If customers are not interested, they exit the system.
- If interested, they enter the negotiation phase.

☐ **Negotiation Phase:**
- Customers request product details, and the sales team provides the information.

☐ **Review and Acceptance:**
- Customers review the details and accept the deal if satisfied.

☐ **Payment Processing:**
- Customers proceed to make the payment, and the finance department checks the payment status.
- If successful, the order processing begins; otherwise, customers retry the payment.

☐ **Customer Support Interaction:**
- At any point, if customers have queries or complaints regarding the order, they contact the customer support department.
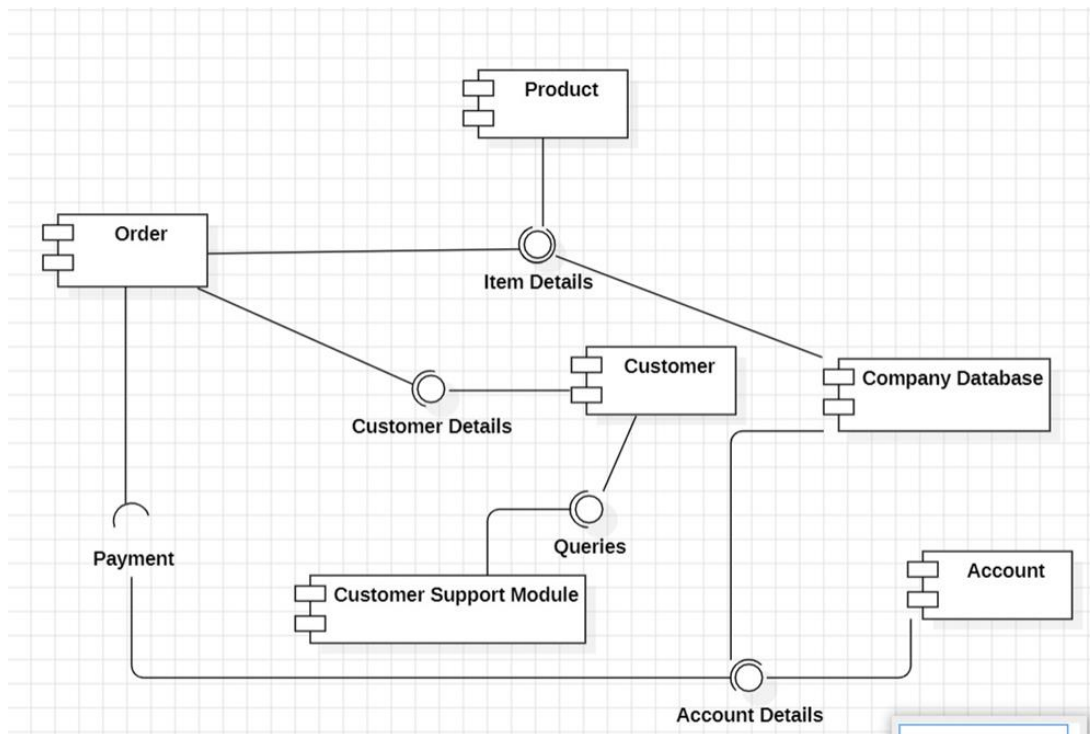
☐ **Management Intervention:**
- If issues are unresolved, the management team schedules a meeting where they provide necessary reports and documents.

☐ **Order Processing:**
- Work on the order takes place, and upon completion, the order is marked as finished.

## 3.6 Component Diagram:



### Components of the CRM System

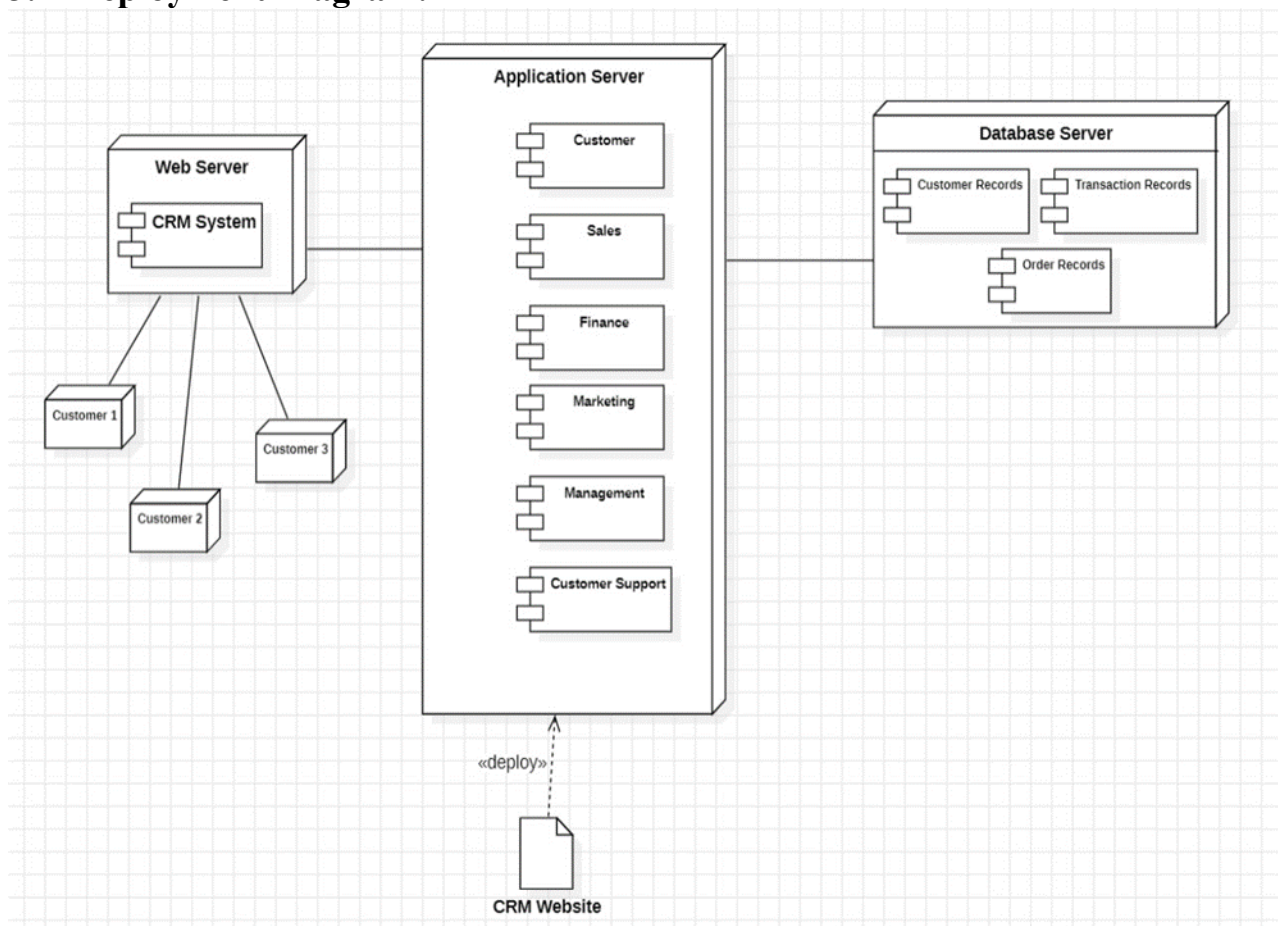1. **Customer Component:**
   - **Responsibilities:**
     - Provides queries and complaints through the provider interface required by the Customer Support Module.
     - Provides customer details required for the Order Component.

2. **Order Component:**
   - **Responsibilities:**

- Requires a payment interface for processing payments made by customers.
- Requires product details selected by customers for order processing.

3. **Product Component:**
   - **Responsibilities:**
     - Provide item details such as item code, price, and information about products.

4. **Account Component:**
   - **Responsibilities:**
     - Provides account details of customers through the provider interface.

5. **Company Database:**
   - **Responsibilities:**
     - Requires and stores all data related to customers and the products they purchase.

6. **Customer Support Module:**
   - **Responsibilities:**
     - Requires queries and complaints submitted by customers for assistance and resolution.

## 3.7 Deployment Diagram:

The deployment diagram illustrates the distribution of components across different nodes within the CRM system. There are three important nodes:

1. **Web Server:**
   - **Description:**
     - This node hosts the CRM System Component.
     - Customers interact with this Web Server to access the CRM system.
2. **Application Server:**
   - **Description:**
     - This node hosts all the actors involved in the CRM system processes, including sales, marketing, customer support, management, and customers themselves.
     - The deployed artifact on this server is the CRM Website, which serves as the primary interface for users to interact with the system.
3. **Database Server:**
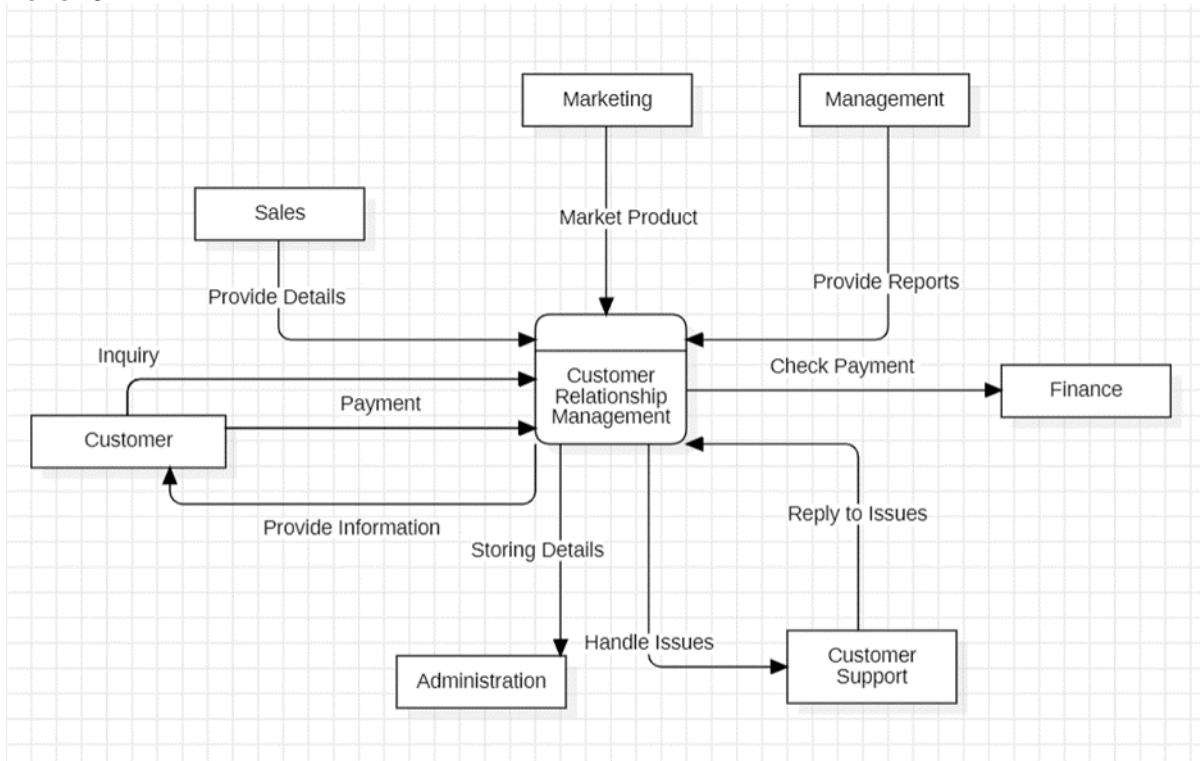   - **Description:**
     - This node hosts the database server, which stores three types of records crucial for the CRM system:
       - Customer Records
       - Transaction Records
       - Order Records
     - These records are integral parts of the deployment system, providing essential data for various functionalities within the CRM system.

## 3.8 Data Flow Diagram:

**Level 0:**

## Level 0 Overview: Customer Relationship Management

At Level 0 of the system architecture, the basic overview of the CRM system is presented. There is only one main process identified, which is Customer Relationship Management.
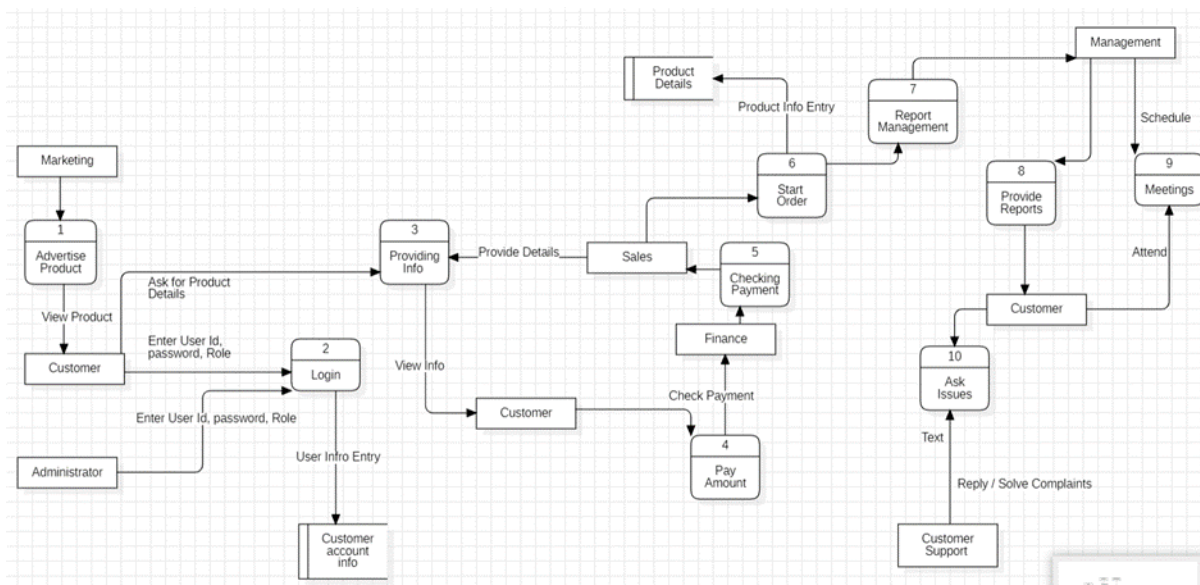- Process:
  - **Customer Relationship Management:**
    - o This process encompasses all interactions and functionalities related to managing relationships with customers.
- Entities Interaction:
  - o All entities within the system interact with the Customer Relationship Management process.

- Entities:
  The entities involved in the CRM system include:
    - ➢ Customers
    - ➢ Sales Department
    - ➢ Marketing Department
    - ➢ Customer Support Department
    - ➢ Management
    - ➢ Finance Department
    - ➢ Administration Department
    - ➢ Projects
    - ➢ Products
    - ➢ Database

This Level 0 overview provides a high-level understanding of the primary process and entities involved in the CRM system without delving into specific details. It sets the foundation for further elaboration in subsequent levels of the system architecture.

**Level 1:**

## Level 1 Overview: Complete System Overview

At Level 1 of the system architecture, a comprehensive overview of the CRM system is displayed. This level elaborates on all processes and entities involved in the system.

**Processes:**
1. **Customer Relationship Management:**
   - Encompasses all interactions and functionalities related to managing relationships with customers.
2. **Sales Process:**
   - Involves activities related to selling products or services to customers, including inquiries, negotiations, and order processing.
3. **Marketing Process:**
   - Includes activities aimed at promoting products or services to attract and retain customers, such as advertising campaigns and market research.
4. **Customer Support Process:**
   - Deals with addressing customer inquiries, complaints, and providing assistance to ensure customer satisfaction.
5. **Management Process:**
   - Encompasses activities related to overseeing and directing various aspects of the CRM system, including strategic planning and decision-making.
6. **Finance Process:**
   - Involves managing financial transactions, including income, expenses, and employee salaries, to ensure the financial health of the organization.
7. **Administration Process:**
   - Includes administrative tasks such as database management, security, and ensuring smooth operations of the CRM system.

**Entities:**
1. **Customers:**
   - Individuals or organizations who interact with the CRM system to purchase products or services and seek assistance.
2. **Sales Department:**
   - Responsible for handling sales-related activities, including customer inquiries, negotiations, and order processing.
3. **Marketing Department:**
   - Engaged in promoting products or services through various marketing channels to attract and retain customers.
4. **Customer Support Department:**
   - Tasked with addressing customer inquiries, complaints, and providing assistance to ensure customer satisfaction.
5. **Management:**
   - Oversees and directs various aspects of the CRM system, including strategic planning and decision-making.
6. **Finance Department:**
   - Manages financial transactions, including income, expenses, and employee salaries, to ensure the financial health of the organization.
7. **Administration Department:**
   - Handles administrative tasks such as database management, security, and ensuring smooth operations of the CRM system.
8. **Projects:**
   - Refers to specific initiatives or tasks undertaken within the CRM system, such as marketing campaigns or product development.

9. **Products:**
    - Items or services offered by the organization for sale to customers.
10. **Database:**
    - Stores and manages data related to customers, transactions, orders, and other relevant information within the CRM system.

This Level 1 overview provides a detailed depiction of all processes and entities involved in the CRM system, offering a comprehensive understanding of its structure and functionalities.

**Level 2:**
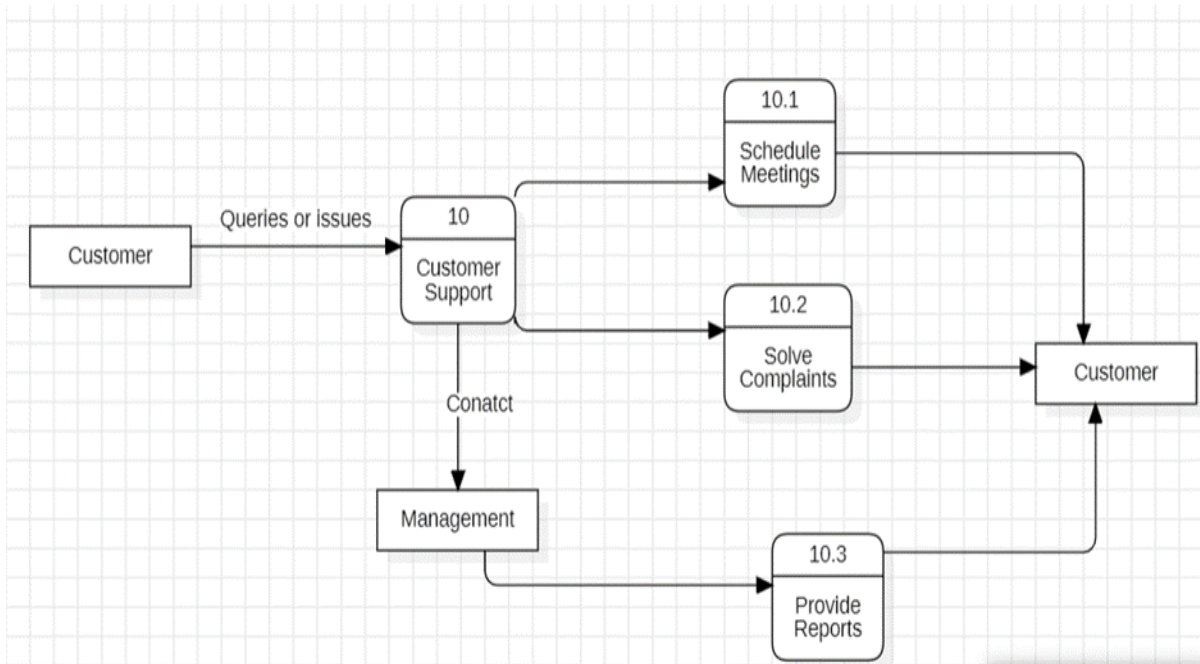


## Level 2: Detailed Process - Customer Support

At Level 2 of the system architecture, a detailed explanation of the Customer Support process is provided. This level delves into the specific activities and interactions involved in handling customer inquiries, complaints, and aiding.

**Customer Support Process:**
1. **Handle Customer Inquiries:**
    - Customer support representatives receive inquiries from customers through various channels such as phone calls, emails, or chat support.
    - Representatives gather relevant information about the inquiry and provide timely and accurate responses to address customer queries.

2. **Address Customer Complaints:**
    - When customers raise complaints about products, services, or experiences, customer support representatives promptly acknowledge and document the complaints.
    - Complaints are thoroughly investigated to understand the root cause, and appropriate actions are taken to resolve the issues in a satisfactory manner.

3. **Provide Assistance:**
   - Customer support representatives aid customers in various aspects, including product usage guidance, troubleshooting, and resolution of issues.
   - They provide step-by-step instructions, explanations, and solutions to help customers overcome challenges and achieve their desired outcomes.

4. **Ensure Customer Satisfaction:**
   - Throughout the interaction, customer support representatives prioritize customer satisfaction by actively listening to their concerns, empathizing with their situations, and demonstrating a willingness to help.
   - They strive to exceed customer expectations by going above and beyond to resolve issues promptly and effectively.

5. **Document and Follow-Up:**
   - All customer interactions, inquiries, and complaints are meticulously documented in the CRM system for future reference and analysis.
   - Follow-up actions are taken to ensure that customer inquiries and complaints are addressed comprehensively and that customers are satisfied with the resolutions provided.

6. **Continuous Improvement:**
   - Customer support processes are regularly reviewed and evaluated to identify areas for improvement.
   - Feedback from customers is collected and analysed to identify recurring issues and implement corrective actions to enhance customer support services.

7. **Integration with Other Departments:**
   - Customer support collaborates closely with other departments such as sales, marketing, and product development to relay customer feedback, address common issues, and ensure a seamless customer experience across all touchpoints.

**Interactions:**
- Customer Support interacts with customers directly through various communication channels such as phone calls, emails, live chat, and social media platforms.
- It also interacts with other departments within the organization to coordinate efforts in resolving customer issues and improving overall customer satisfaction.

This Level 2 detailed explanation provides a comprehensive understanding of the Customer Support process, outlining its activities, interactions, and goals within the CRM system.

# 4. External Interface Requirements

## 4.1 User Interfaces

*The user interfaces within the Customer Relationship Management System (CRM) are designed to facilitate intuitive interaction between users and the software product. Below are the logical characteristics of each interface:*

1. **Dashboard Interface:**

   - *Provides users with an overview of key metrics and insights related to sales, marketing campaigns, customer support tickets, and financial performance.*
   - *Features customizable widgets and charts for personalized data visualization.*
   - *Allows users to access quick actions and navigate to different modules within the CRM.*

2. **Customer Interface:**

   - *Enables users to view and manage customer information, including contact details, purchase history, and communication logs.*
   - *Supports functionalities such as adding new customers, updating existing records, and categorizing customers based on demographics or preferences.*
   - *Provides a search and filter mechanism for easy retrieval of customer records.*

3. **Sales Interface:**

   - *Allows sales representatives to manage sales leads, opportunities, and deals.*
   - *Includes features for tracking sales activities, managing pipelines, and forecasting revenue.*
   - *Provides tools for generating quotes, sending proposals, and closing deals efficiently.*

4. **Marketing Interface:**

   - *Facilitates the creation, execution, and analysis of marketing campaigns across various channels.*
   - *Offers features for designing email templates, scheduling social media posts, and tracking campaign performance.*

5. **Customer Support Interface:**

   - *Enables customer support agents to receive, process, and resolve customer inquiries and complaints.*
   - *Supports functionalities such as ticket management, escalation workflows, and knowledge base access.*
   - *Provides real-time communication channels such as live chat, email integration.*

6. **Management Interface:**

   - *Provides executives and managers with comprehensive insights and reports for decision-making.*
   - *Offers features for generating financial reports, analyzing sales performance, and monitoring team productivity.*

- *Includes customizable dashboards and drill-down capabilities for deeper analysis.*

7. **Administration Interface:**

- *Allows administrators to configure system settings, manage user roles and permissions, and perform database maintenance tasks.*
- *Supports functionalities such as user authentication, data backup and recovery, and system monitoring.*
- *Provides a centralized hub for system configuration and customization.*

# 5. Other Nonfunctional Requirements

## 5.1 Performance Requirements

*The performance requirements for the Customer Relationship Management System (CRM) are as follows:*

1. **Response Time:**

   - *The system should respond to user interactions within a maximum of 2 seconds under normal load conditions.*
   - *This ensures that users experience minimal delays when navigating through the system and performing actions.*

2. **Data Processing Speed:**

   - *The system should be capable of processing large volumes of customer data efficiently.*
   - *Data processing tasks, such as generating reports or conducting customer segmentation, should be completed within a reasonable timeframe, typically less than 5 seconds.*

3. **Scalability:**

   - *The CMS should be scalable to accommodate increasing numbers of users and growing data volumes.*
   - *The system architecture should support horizontal scaling by adding more servers or nodes to the infrastructure as needed.*

4. **Concurrency Handling:**

   - *The system should handle concurrent user sessions effectively to prevent performance degradation.*
   - *Concurrent transactions, such as simultaneous updates to customer records or concurrent access to resources, should be managed efficiently to avoid conflicts and ensure data integrity.*

## 5.2 Safety Requirements

*The safety requirements for the Customer Relationship Management System (CRM) are as follows:*

1. **Data Security:**
   - *The system must ensure the security and confidentiality of customer data, including personal information, financial records, and transaction details.*
   - *Safeguards such as encryption, access controls, and regular security audits must be implemented to prevent unauthorized access, data breaches, or data leakage.*

2. **User Authentication and Authorization:**

   - *The system must enforce robust user authentication mechanisms to verify the identity of users accessing the system.*
   - *Strong password policies, multi-factor authentication, and session management controls must be employed to prevent unauthorized access to sensitive data and system functionalities.*

3. **Backup and Recovery:**

   - *The system should implement regular data backup procedures to protect against data loss due to system failures, hardware malfunctions, or other unforeseen events.*
   - *Automated backup schedules, offsite storage solutions, and disaster recovery plans should be in place to ensure data integrity and business continuity.*

## 5.3 Software Quality Attributes

*The software quality attributes for the Customer Relationship Management System (CRM) are as follows:*

1. **Usability:**

   - *The system should have an intuitive and user-friendly interface that allows users to navigate the application easily and perform tasks efficiently.*
   - *Usability metrics, such as task completion time and user satisfaction scores, should be measured and continuously improved through user feedback and usability testing.*

2. **Reliability:**

   - *The system should be reliable and available whenever users need to access it, with minimal downtime or disruptions.*
   - *Reliability metrics, such as mean time between failures (MTBF) and mean time to repair (MTTR), should be monitored and optimized to ensure high system availability.*

3. **Scalability:**

   - *The system should be scalable to accommodate an increasing number of users, transactions, and data volumes without degradation in performance.*
   - *Scalability metrics, such as response time under varying loads and resource utilization levels, should be evaluated to ensure the system can scale horizontally or vertically as needed.*

4. ***Maintainability:***

- *The system should be designed and implemented in a modular and well-structured manner, allowing for easy maintenance, updates, and enhancements.*
- *Maintainability metrics, such as code complexity, code churn, and defect density, should be monitored to assess the ease of maintaining and evolving the system over time.*

5. ***Security:***

- *The system should prioritize security measures to protect against unauthorized access, data breaches, and cyber threats.*
- *Security metrics, such as vulnerability assessment findings and compliance with security standards, should be tracked to ensure the system's security posture remains robust and resilient.*

6. ***Performance:***

- *The system should deliver responsive performance, with fast response times and minimal latency, even under peak load conditions.*
- *Performance metrics, such as response time for critical transactions and throughput rates, should be benchmarked and optimized to meet performance objectives.*

# Appendix A: Glossary

- ***CRM:*** *Customer Relationship Management*
- ***SRS:*** *Software Requirements Specification*
- ***GUI:*** *Graphical User Interface*
- ***RDBMS:*** *Relational Database Management System*
- ***API:*** *Application Programming Interface*