Customer Relationship Management (CRM) System

Using Agile Methodology

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1. Abstract

Customer Relationship Management (CRM) is a vital system used by organizations to manage interactions with customers, improve service quality, and increase customer satisfaction. This project focuses on developing a CRM system using the **Agile Software Development Methodology**, which emphasizes flexibility, continuous improvement, and customer collaboration.

The CRM system helps businesses store customer data, track communication history, manage leads, handle customer complaints, and analyze customer behavior. Traditional development models often fail to adapt quickly to changing customer needs. Agile solves this problem by breaking the project into small, manageable iterations called **sprints**. Each sprint delivers a working module, allowing regular feedback and improvements.

The system includes features such as customer registration, contact management, sales tracking, support ticket management, and reporting. Agile methodology ensures that these features are developed in stages with continuous testing and user feedback.

Daily stand-up meetings, sprint planning, sprint reviews, and retrospectives are part of the Agile process followed in this project. This helps the development team identify issues early and improve productivity.

The CRM system improves business efficiency by organizing customer data in a structured manner. It helps sales teams track leads, support teams resolve issues faster, and management teams make data-driven decisions.

This project demonstrates how Agile methodology enhances software quality, reduces development risks, and ensures customer satisfaction. It also provides practical knowledge of real-world software development processes, teamwork, and project management.

Future enhancements can include AI-based customer analytics, chatbot integration, and cloud deployment to make the CRM system more powerful and scalable.

2. Introduction

2.1 Introduction

Customer Relationship Management (CRM) systems help organizations manage customer interactions efficiently. Agile methodology is used to develop this system in an adaptive and flexible manner.

2.2 Problem Identification

Traditional customer management systems are rigid and slow to adapt to changing customer needs.

2.3 Need of the Project

A flexible CRM system is required to improve customer satisfaction, service quality, and business growth.

2.4 Project Scheduling

Phase	Duration
Planning	2 Days
Development	7 Days
Testing	3 Days
Review Documentation	2 Days
	1 Day

2.5 Objectives

- Manage customer data efficiently
- Track customer interactions
- Improve service response time
- Use Agile methodology
- Enable continuous improvement
- Ensure customer satisfaction

3. Software Requirement Specification (SRS)

3.1 Purpose

To develop a CRM system that helps organizations manage customer relationships effectively using Agile practices.

3.2 Scope

Useful for businesses, service centers, sales teams, and customer support departments.

3.3 Hardware / Software Requirement

Hardware:

- 4GB RAM
- Intel i3 or above
- 500GB HDD

Software:

- Windows 10
- Java / Web Technologies
- MySQL
- VS Code / Eclipse

3.4 Tools

- Java / HTML / CSS / JavaScript
- MySQL Database
- Git
- Agile Tools (Jira / Trello)

3.5 Software Process Model Agile

Model

- Sprint Planning
- Daily Stand-up
- Sprint Review
- Sprint Retrospective

4. System Design

4.1 Data Dictionary

Field	**Type**	**Description**
CustomerID	int	Unique customer ID
Name	String	Customer name
Email	String	Email address

Phone	String	Contact number
Status	String	Lead / Active / Closed

4.2 ER Diagram

Customer → Interaction → Support Ticket

4.3 DFD

User → CRM System → Database → Reports

4.4 Diagrams

- Use Case Diagram
- Activity Diagram
- Flowchart

5. Implementation

5.1 Program Code

Modules developed in Agile sprints:

- Customer Management
- Lead Tracking
- Support Ticket System
- Reporting Module

5.2 Output Screens

- Login Page
- Customer Dashboard
- Ticket Management
- Reports

6. Testing

6.1 Test Data

Input	Expected Output
Invalid Email	Error Message

Empty Fields	Validation Error
Duplicate Customer	Warning

6.2 Test Result

All features work correctly after iterative testing in each sprint.

7. User Manual

7.1 How to Use

1. Login to the system
2. Add customer details
3. Track interactions
4. Manage support tickets
5. Generate reports

7.2 Screen Layout

Web-based dashboard with user-friendly design.

8. Project Applications & Limitations

Applications

- Sales Management
- Customer Support
- Marketing Analysis
- Business Growth

Limitations

- Internet required
- Limited automation
- Manual data entry

9. Conclusion & Future Enhancement

The CRM system developed using Agile methodology successfully improves customer management and service efficiency. Agile ensures flexibility, faster delivery, and continuous improvement.

Future Enhancements:

- AI-based customer insights

- Chatbot integration
- Cloud deployment
- Mobile app version

10. Bibliography & References

- Agile Manifesto □ Scrum Guide
- GeeksForGeeks
- W3Schools
- IEEE Papers