

Online E-Commerce Website

Using Agile Methodology

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Semester: 8th

Subject: Software Engineering

1. Abstract

An Online E-Commerce Website is a digital platform that allows customers to browse products, place orders, make payments, and track deliveries through the internet. With the rapid growth of online shopping, businesses require flexible, scalable, and user-friendly systems to meet customer demands. This project focuses on developing an Online E-Commerce Website using the **Agile Software Development Methodology**, which emphasizes iterative development, customer feedback, and continuous improvement.

Traditional software development models are often slow and difficult to modify once development begins. Agile methodology overcomes these limitations by dividing the project into small development cycles known as **sprints**. Each sprint delivers a functional module such as user authentication, product catalog, shopping cart, or payment gateway. Feedback is collected after every sprint to improve the system.

The E-Commerce website allows users to register, search for products, add items to the cart, place orders, and make secure payments. Admin users can manage products, monitor orders, and handle customer queries. Agile practices such as sprint planning, daily stand-ups, sprint reviews, and retrospectives ensure better coordination among team members and faster issue resolution.

The platform improves customer experience by offering easy navigation, fast checkout, and real-time order tracking. It also benefits businesses by automating sales processes, reducing manual work, and increasing operational efficiency.

This project demonstrates how Agile methodology helps in developing high-quality, scalable, and user-centric software solutions. It also provides hands-on experience with teamwork, iterative development, and real-world software engineering practices.

Future enhancements may include AI-based product recommendations, mobile app integration, and cloud deployment to make the platform more advanced and accessible.

2. Introduction

2.1 Introduction

An Online E-Commerce Website enables customers to purchase products online. Agile methodology is used to ensure flexibility and faster development.

2.2 Problem Identification

Traditional shopping systems lack convenience, speed, and real-time updates.

2.3 Need of the Project

A modern platform is required for easy, secure, and fast online shopping.

2.4 Project Scheduling

Phase	Duration
Planning	2 Days
Development	8 Days
Testing	3 Days
Review	2 Days
Documentation	1 Day

2.5 Objectives

- Provide online product purchasing
- Improve user experience
- Use Agile methodology
- Ensure secure payments
- Enable order tracking
- Enhance customer satisfaction

3. Software Requirement Specification (SRS)

3.1 Purpose

To develop a flexible and user-friendly E-Commerce Website using Agile methodology.

3.2 Scope

Useful for online retailers, small businesses, and customers.

3.3 Hardware / Software Requirement

Hardware:

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

Software:

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

3.4 Tools

- HTML, CSS, JavaScript
- Java / Python
- MySQL
- 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
<i>UserID</i>	int	Unique user ID
<i>ProductID</i>	int	Product ID
<i>ProductName</i>	String	Product name
<i>Price</i>	double	Product price
<i>OrderStatus</i>	String	Pending / Delivered

4.2 ER Diagram

User → Order → Product

4.3 DFD

User → Website → Database → Confirmation

4.4 Diagrams

- Use Case Diagram
- Activity Diagram
- Flowchart

5. Implementation

5.1 Program Code

Modules developed in sprints:

- User Registration & Login
- Product Catalog
- Shopping Cart
- Payment Gateway
- Admin Panel

5.2 Output Screens

- Home Page
- Product Listing
- Cart Page
- Payment Page
- Order History

6. Testing

6.1 Test Data

Input	Expected Output
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Invalid Card	Payment Failed
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Empty Fields	Validation Error
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Out of Stock	Warning
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6.2 Test Result

All features worked correctly after sprint-based testing.

7. User Manual

7.1 How to Use

1. Register/Login
2. Browse products
3. Add to cart
4. Make payment
5. Track order

7.2 Screen Layout

Web-based interface with easy navigation.

8. Project Applications & Limitations

Applications

- Online Shopping
- Retail Businesses
- Product Sales
- Digital Marketplaces

Limitations

- Internet dependency
- Limited offline support
- Manual inventory updates

9. Conclusion & Future Enhancement

The Online E-Commerce Website developed using Agile methodology provides a flexible and efficient solution for digital shopping. Agile ensures faster delivery, better quality, and continuous improvement.

Future Enhancements:

- AI product recommendations
- Mobile app version
- Cloud hosting
- Chatbot support

10. Bibliography & References

- Agile Manifesto
- Scrum Guide
- E-Commerce Websites
- GeeksForGeeks
- IEEE Journals