

1. Introduction:

E-commerce has revolutionized the way businesses operate and how consumers shop. With the increasing prevalence of online shopping, there is a growing demand for efficient and user-friendly e-commerce platforms. This project aims to address this need by developing an online e-commerce website software that provides a seamless shopping experience for users.

2. Background Study:

The rise of e-commerce has been fueled by advancements in technology and changes in consumer behavior. Traditional brick-and-mortar stores are increasingly moving their operations online to reach a wider audience and capitalize on the growing trend of online shopping. As such, there is a pressing need for robust and reliable e-commerce solutions that can cater to the diverse needs of businesses and consumers alike.

3. Objectives:

- Develop a comprehensive e-commerce website software with essential features such as product catalog, shopping cart, user authentication, and payment gateway integration.
- Create an intuitive and user-friendly interface to enhance the shopping experience for users.
- Ensure the security and privacy of user data through robust authentication and encryption mechanisms.
- Implement efficient inventory management and order processing functionalities to streamline business operations.

4. Features:

- Product catalog with detailed product listings and descriptions.
- Shopping cart functionality for users to add and manage items before checkout.

- User authentication and registration system to secure user accounts and personal information.
- Payment gateway integration to facilitate secure online transactions.
- Order management system for administrators to track and process orders efficiently.

5. Requirements:

Functional Requirements:

- Product catalog: Display products with images, descriptions, and prices.
- Shopping cart: Allow users to add, remove, and update items in their cart.
- User authentication: Secure login and registration process for users.
- Payment gateway integration: Support for various payment methods such as credit/debit cards, digital wallets, and net banking.
- Order management: Enable administrators to view, process, and fulfill orders.

Non-functional Requirements:

- Performance: Ensure fast loading times and responsiveness.
- Scalability: Ability to handle a large number of concurrent users and products.
- Security: Implement measures to protect user data and prevent unauthorized access.
- Usability: Intuitive user interface with easy navigation and accessibility features.
- Compatibility: Support for different web browsers and devices.

6. Contribution:

This project contributes to the field of e-commerce by providing a robust and user-friendly online shopping platform that meets the needs of both businesses and consumers. It demonstrates the application of software development methodologies and technologies to address real-world challenges in the e-commerce domain.

7. Methodology:

- Requirement Analysis: Identify and document functional and non-functional requirements through stakeholder interviews and market research.
- System Design: Design the system architecture, database schema, user interface, and backend functionalities using industry best practices.
- Implementation: Develop the e-commerce website software using technologies such as HTML, CSS, JavaScript, PHP, Laravel, and MySQL.
- Testing: Conduct thorough testing, including unit testing, integration testing, and user acceptance testing, to ensure the quality and reliability of the software.
- Deployment: Deploy the e-commerce website software on a web server and make it accessible to users.

8. SRS:

9. Design diagram:

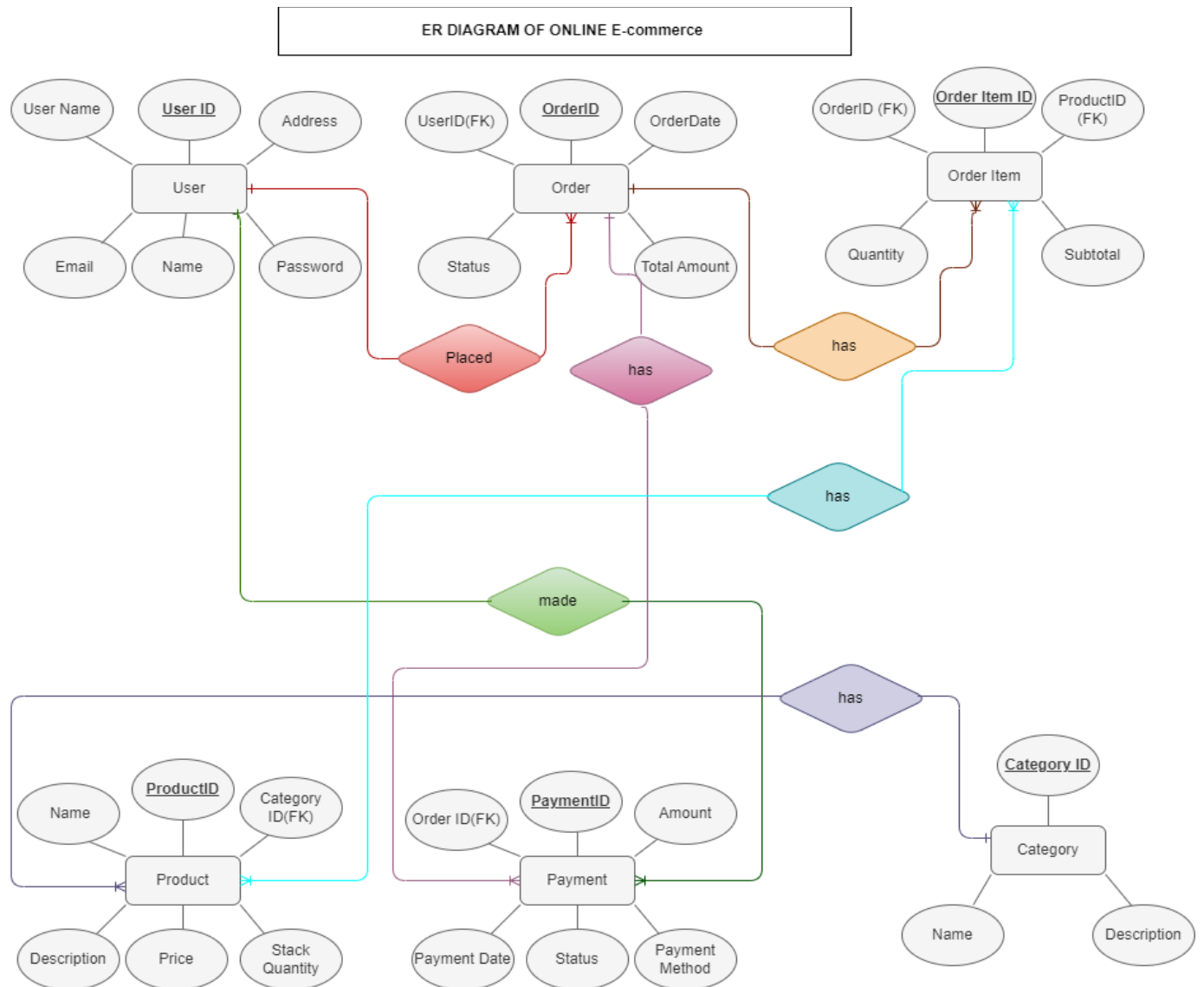


Figure 01: ER Diagram

localhost:8080/phpmyadmin/index.php?route=/table/structure&db=online_ecommerce&table=user

Server: 127.0.0.1 Database: online_ecommerce Table: user

Table structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 User ID	int(10)			No	None			Change Drop More
<input type="checkbox"/>	2 User Name	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	3 Name	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	4 Password	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	5 Email	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	6 Address	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More

☐ Check all
 With selected:

1 column(s) after Address

Figure 02: Database

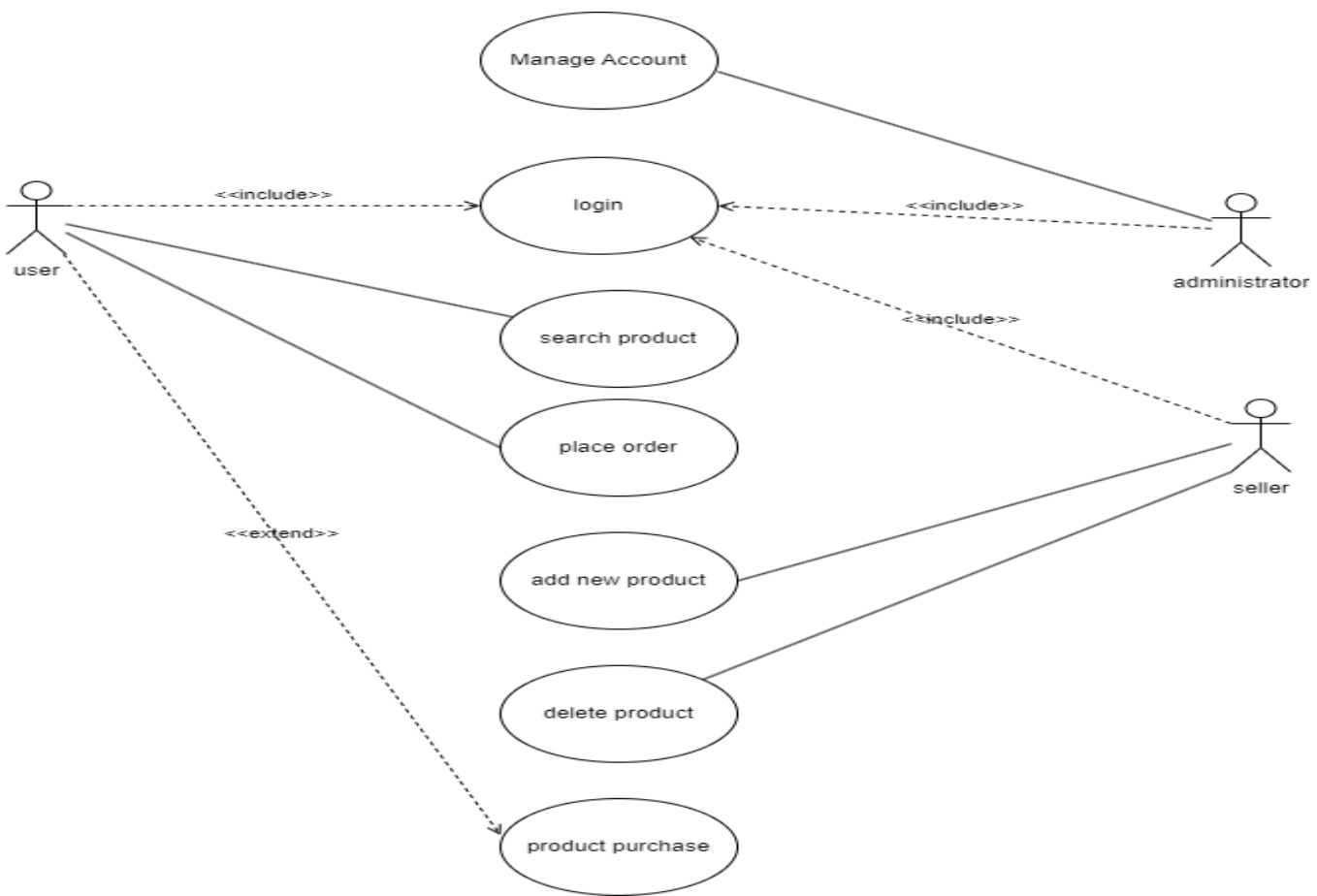


Figure 03: use case diagram

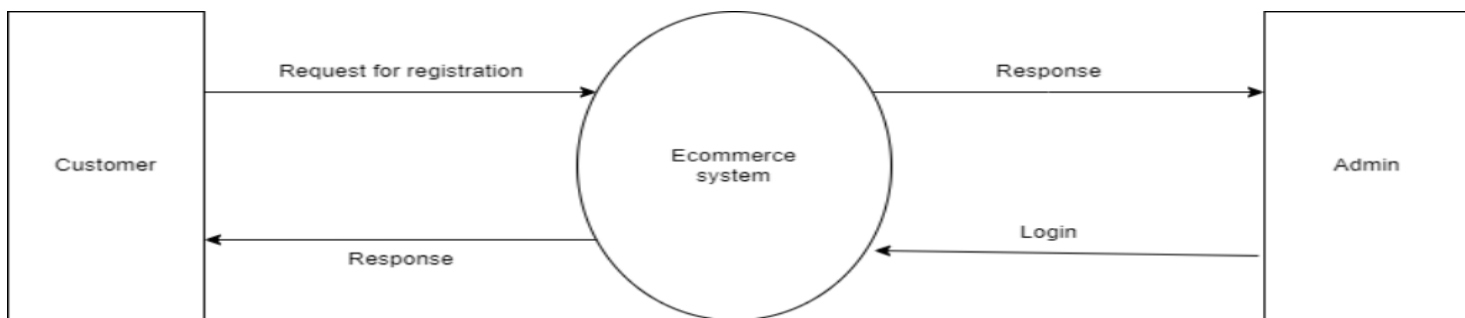


Figure 04: DFD 0

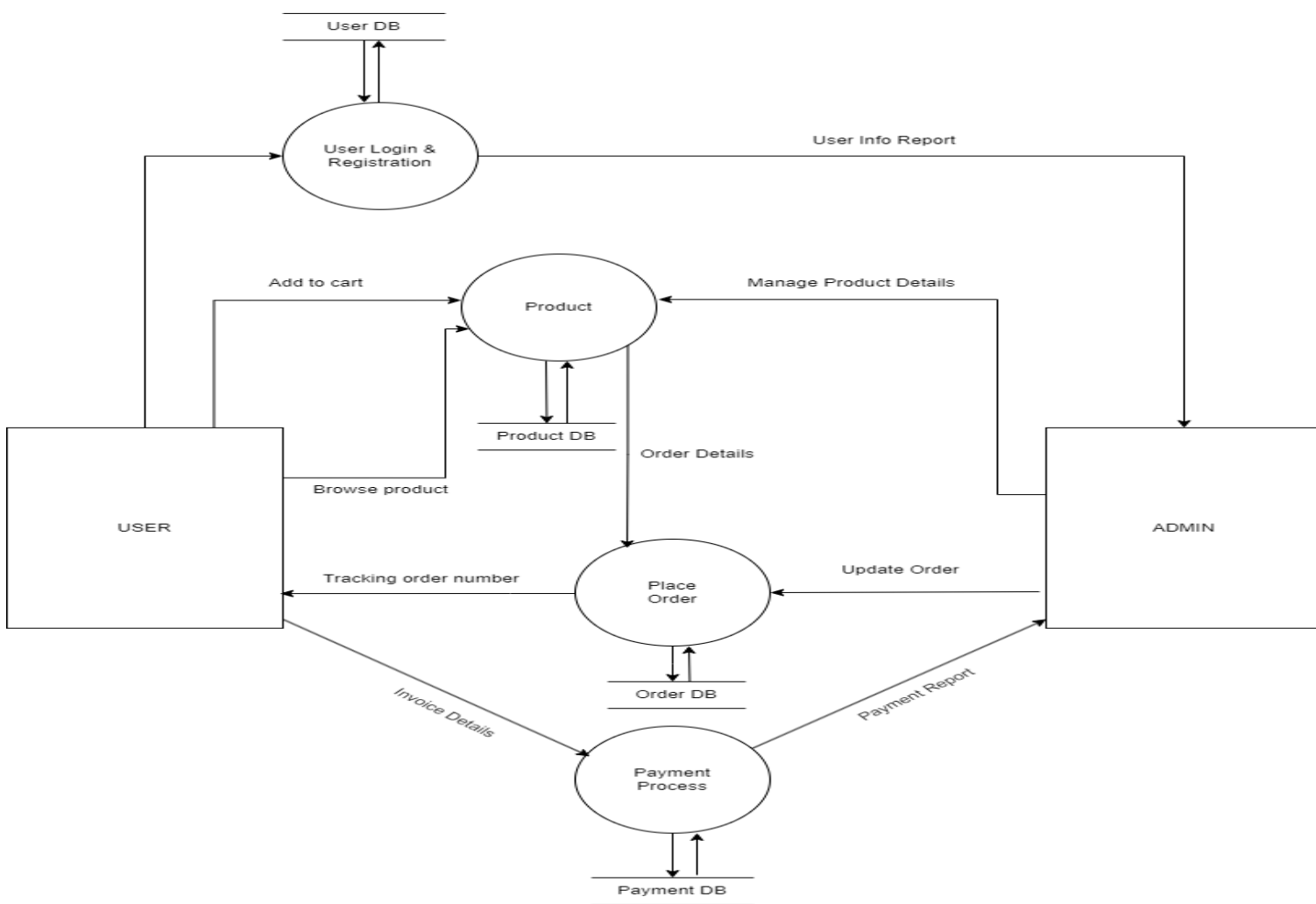


Figure 05: DFD 1

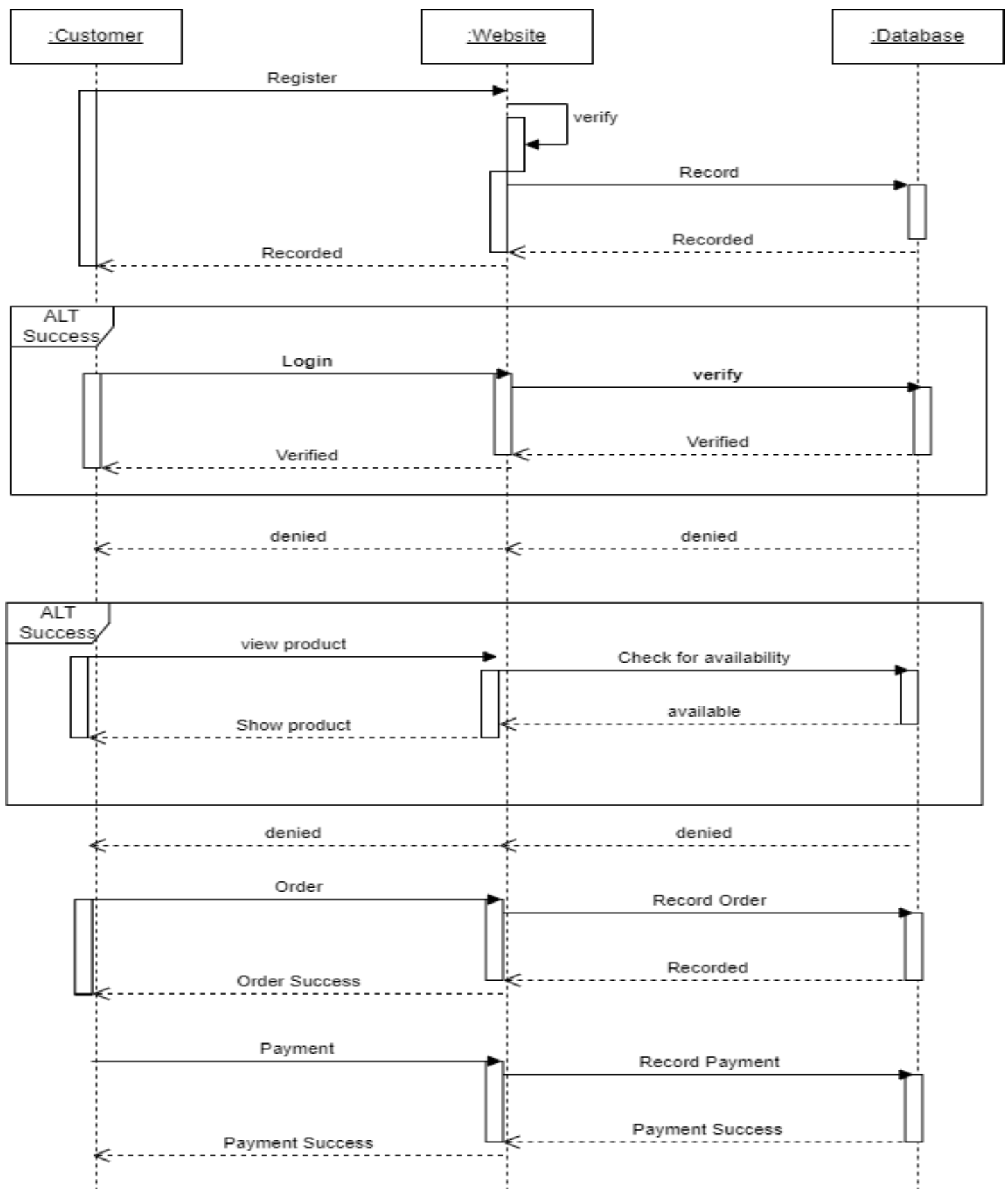


Figure 06: sequence diagram

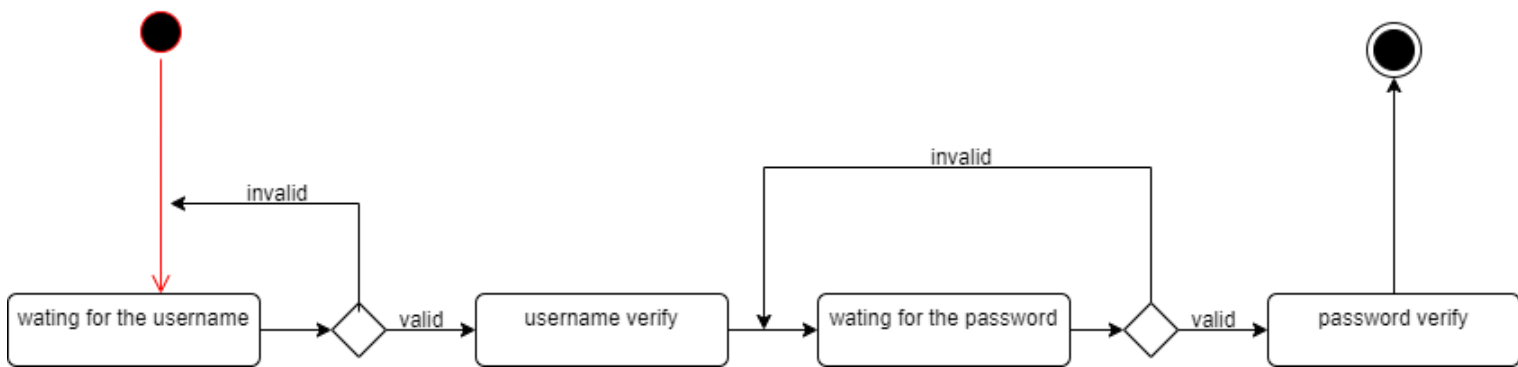


Figure 07: State diagram 1

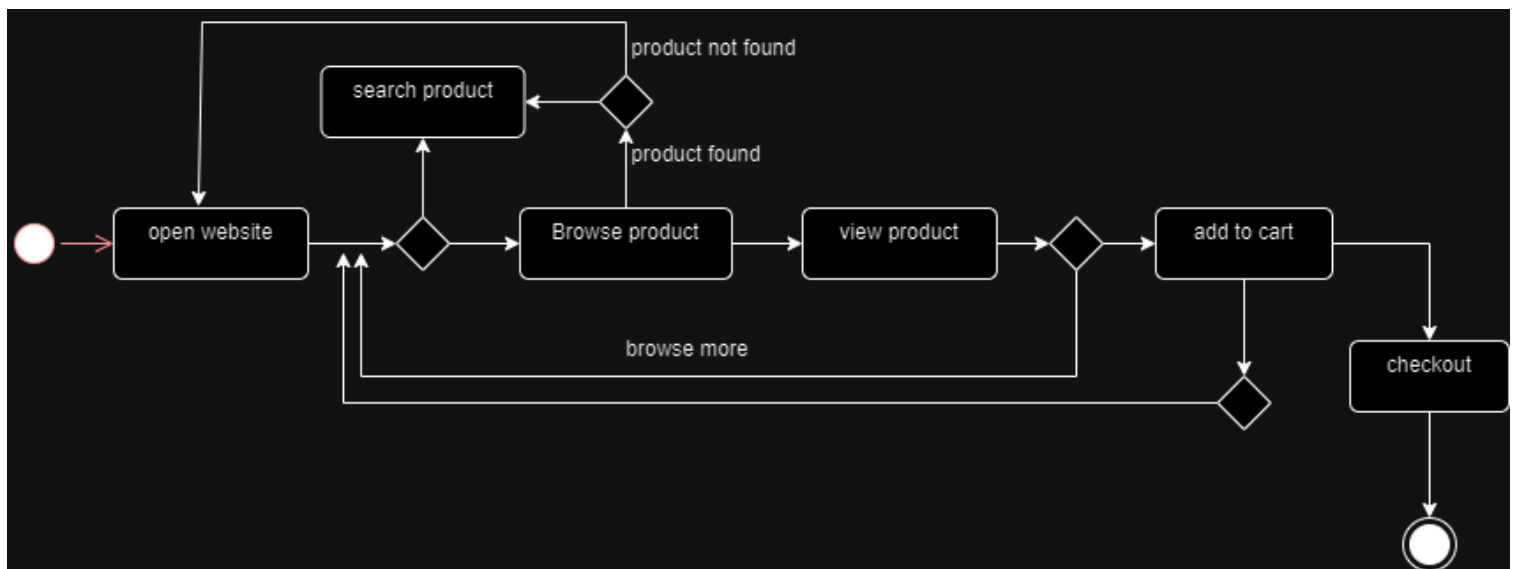


Figure 08: State diagram 2

1. Stakeholder- Customer, Seller, Admin
2. Inviting all the stakeholder (Customer, Seller, Admin) in a formal meeting
3. Identifying all the features and functions from the stakeholder such as:
 - A) Cart
 - B) Register/Login
 - C) Payment System
 - D) Review/Comment
 - E) Navigation
 - F) Search
 - G) Search engine optimization
 - H) Mobile-responsiveness
4. Hold another meeting to finalize all the list of requirement such as:
 - A) Cart
 - B) Register/Login
 - C) Payment System
 - D) Review/Comment
 - E) Search
 - F) Mobile-responsiveness
5. Necessary function such as cart, payment system, login should be priorities
6. Some uncertain areas of our project would be:
 - A) Unable to suggest proper product to customer
 - B) Data privacy and integrity
 - C) Optimize website
 - D) Competitive return and refund policies

Figure 09: Task set

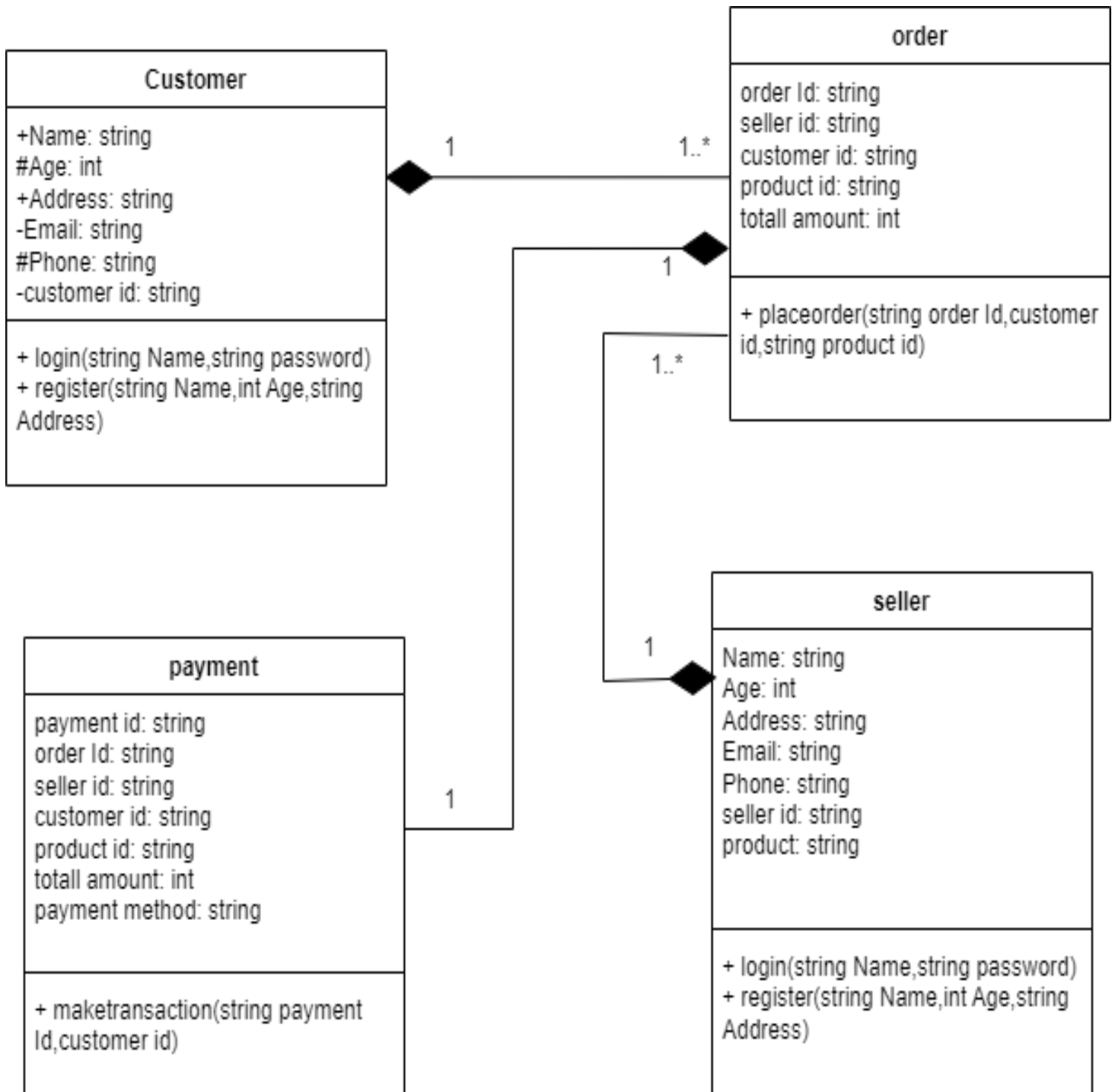


Figure 10: UML Class diagram

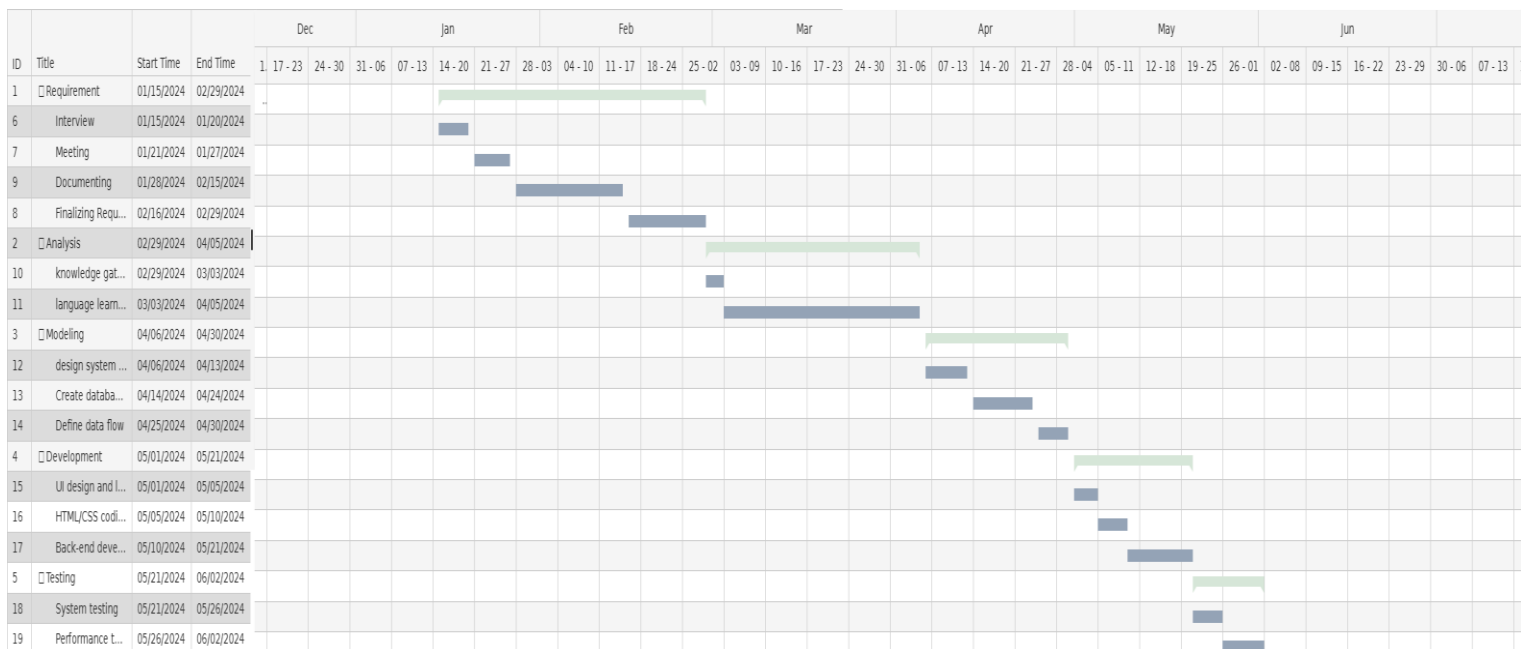


Figure 11: Gantt Chart

A1	Project Name						
	A	B	C	D	E	F	G
1	Project Name	online ecommerce website		Assumptions			
2	Project Manager	sajib		1.) stable market			
3	Start Date	1.15.2024		2.)			
4	End Date	5.20.2024		3.)			
5	Current Date	4.29.2024		4.)			
6	Budget and Forecast	FY22			FY23		
7		Budget	Forecast	Variance	Budget	Forecast	Variance
8		\$2,300	\$2,500	-\$200			\$0
9							
10	Project Costs	Planned	Forecast	Variance	Planned	Forecast	Variance
11	Resources	\$200	\$200	\$0			\$0
12	Software/Hardware/Licenses	\$150	\$190	-\$40			\$0
13	Travel	\$50	\$60	-\$10			\$0
14	Materials	\$400	\$450	-\$50			\$0
15	Other	\$500	\$600	-\$100			\$0
16	Training	\$900	\$1,000	-\$100			\$0
17	Sub Total	\$2,200	\$2,500	-\$300	\$0	\$0	\$0
18							

Figure 12: Budget

9. Implementation:

- Front-end Technologies: HTML, CSS, JavaScript for building the user interface.
- Back-end Technologies: PHP for implementing business logic and server-side functionality.
- Database Management: MySQL for storing product information, user data, and transaction records.
- Development Tools: Integrated development environments (IDEs) such as Visual Studio Code, Sublime Text, and database management systems (DBMS) like phpMyAdmin.

10. Testing Report:

11. Future Work:

- Integration with third-party services such as social media platforms and analytics tools.
- Enhancements to the user interface for better usability and accessibility.
- Implementation of advanced features such as recommendation engines and personalization algorithms.
- Continuous monitoring and optimization of performance and security aspects.

12. Limitations:

- Limited resources and time constraints may have impacted the scope and depth of the project.
- The software may require further refinement and optimization to address scalability and performance issues under heavy loads.
- Compatibility issues with certain web browsers or devices may arise, requiring additional testing and debugging.

13. Conclusion:

The development of the online e-commerce website software has successfully achieved its objectives of providing a robust, user-friendly, and secure platform for online shopping. The software has the potential to significantly enhance the e-commerce experience for both businesses and consumers, contributing to the growth and success of the online retail industry.

14. References:

1. Smith, J. (2023). E-Commerce Essentials: Building Successful Online Businesses. Wiley.
2. How To Create A Free Website - with Free Domain & Hosting complete guideline for begener, https://www.youtube.com/results?search_query=how+to+create+a+website

3. Johnson, A., & Williams, B. (2022). The Future of Online Retail: Trends and Innovations. *Journal of E-Commerce Research*, 15(2), 45-60. DOI: 10.1016/j.jeco.2022.02.003
4. E-Commerce Trends 2023. (n.d.). Retrieved April 15, 2024, from <https://www.ecommercetrends.com>
5. Brown, C. (2021). *Designing User-Friendly E-Commerce Websites*. O'Reilly Media.
6. Global E-Commerce Market Report. (2024). Retrieved from MarketWatch website: <https://www.marketwatch.com/ecommerce-report>
7. Anderson, R., & Lee, S. (Eds.). (2023). *Advances in E-Commerce Technologies*. Springer.
8. Nielsen, K. (2020). *Understanding Online Consumer Behavior*. Harvard Business Review.
9. Shopify. (n.d.). Retrieved from <https://www.shopify.com>