

College of Engineering and
Computing in Al-Qunfudhah
Software Documentation and
Technical Writing CS3123
1st Semester 1446H



Jarir Bookstore

Technical Writing Document

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Submission date: 27/11/2024

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0.1 Abstract

The "Jarir Bookstore App" project aims to develop a mobile application that includes creating a shopping experience for Jarir Bookstore users, a leading Saudi company in the field of selling books and educational electronics in the Middle East. The application will provide an easy-to-use interface, allowing customers to browse and purchase their products. It includes main features, digital payment options, and order tracking, offering exclusive deals. The app will also include a community section that allows users to review products and share their experiences. Through modern brand identification and data analytics, the application of sports science to enhance customer interaction and satisfaction, ultimately leading to increased sales and customer loyalty.

0.2 Overview

Jarir Bookstore, a prominent Middle Eastern retail chain, offers a wide range of products, including books, electronics, office supplies, and educational materials. The Jarir Bookstore app provides users with easy access to their extensive catalog, offering a variety of genres, search functionality, personalized recommendations, online shopping, a store locator, promotions and offers, account management, and reviews and ratings. Users can browse the catalog, search for specific items, receive personalized recommendations based on browsing and purchase history, and purchase items directly through the app. The app also features a store locator to help users find the nearest location.

Users can stay updated on special promotions, discounts, and exclusive offers available only through the app. The app also allows customers to create and manage their accounts, view order history, and track shipments.

0.3 Introduction

One of the top merchants in the Middle East, Jarir Bookstore provides a large selection of books, gadgets, and educational materials. Offering a quick and easy mobile shopping experience has become crucial due to people's growing reliance on technology in their daily lives. The "Application Jarir Bookstore" project seeks to satisfy consumer demands by creating a cutting-edge application that enables users to swiftly and easily browse and buy products.

The app will have an easy-to-use design with tailored recommendations, secure digital payment choices, and advanced search capabilities. Customers will also be able to track their orders and take advantage of special deals thanks to it. Furthermore, the application will feature a community part where users may contribute their product reviews and experiences, fostering greater user interaction and boosting customer confidence in their selections.

The initiative is to increase Jarir Bookstore's standing as the area's top shopping destination by enhancing brand loyalty, increasing sales, and improving customer experience.

0.4 Program's Purpose

The bookstore application exists for anyone who wants to buy any electronic devices or special books that doesn't find in any store or other things related to office and solve problem of Inability to receive from the store directly or lack of a branch in certain areas.

0.5 Analysis

0.5.1 Introduction

The rapid evolution of digital commerce has significantly transformed how consumers interact with brands and make purchasing decisions. In this context, the "Jarir Bookstore" application aims to enhance user experience and streamline the purchasing process for a diverse range of products, including books, electronics, and educational resources. This document outlines the functional and non-functional requirements necessary for the application to meet user needs effectively. By identifying user expectations and system capabilities, we can ensure that the application provides a seamless and engaging shopping experience, ultimately driving customer satisfaction and loyalty.

0.5.2 Functional Requirements

Introduction: This document outlines improving user experience and expediting the purchasing process, the "Jarir Bookstore" application, the functional and non-functional requirements. The application's goal is to give users a simple and entertaining way to access a variety of goods, such as gadgets, books, and educational resources.

User Requirements

- View app: Services and products: User can browse the store sections and its products without creating an account.
- Create account: User should create an account if they want to place an order.
- Choose Location: Users should add their location to complete the order.
- Order products: After adding products to the cart, users can choose a payment method when purchasing.
- Exchange devices: User can exchange devices purchased from Jarir.
- Extend the warranty: User can extend the warranty on devices purchased from Jarir.
- Request maintenance: User can request maintenance services.

System Requirements

- View app Services and products: System shall allow the user to browse products and add items to the cart without creating an account.
- Create account:
 - System shall allow the user to complete the purchase after creating an account / logging in.
 - System shall activate a new Jarir card once the account is created.
 - System shall allow the user to add multiple items to the cart.
- Choose Location: System shall enable the user to add their location to choose the delivery method (either from the nearest branch or home delivery).
- Order products: System shall allow the user to pay in full or in installments.

0.5.3 Non-Functional Requirements

.Product Requirements

- Usability:
 - Existed icons for store's sections.
 - Each service in the Jarir services section has a description.
- Security:
 - Send a verification code to the user's number.

External Requirements

- Accounting Requirements
 - The system should allow installment payments.
 - A tax summary displayed under the "Complete Purchase" button.

0.5.4 Main Tasks

- Selling various products (books, smart devices, electronics, office supplies, etc.).
- Protecting and providing warranty services for devices.
- Exchanging and maintaining devices.

0.5.5 Survey Result

The objective of this survey is to collect user's feedback and the problems they faced when using the app. Based on survey results the improvement will be in:

Survey Result Analysis

- UI understanding: Add short video about Bookstore tools to make it easier for users.
- Suspension: Download new versions that had bug fixes make the application smoother.
- Books: Add various books and e-books.
- Fast searching: There is existing button in top left for scanning products barcodes.
- Difficult selecting location: Add feature that takes user location from SPL application.
- Adding bank card information: Add feature that takes bank card information by take picture for it.
- For more discounts: A feature will be added that give user point for each comment then convert the points into discount.

Figure 1: Overall satisfaction

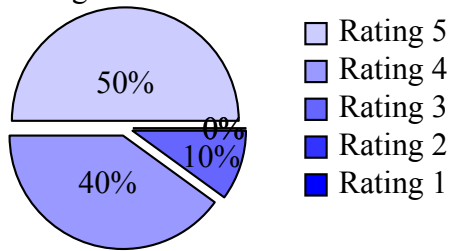


Figure 2: Ease of use

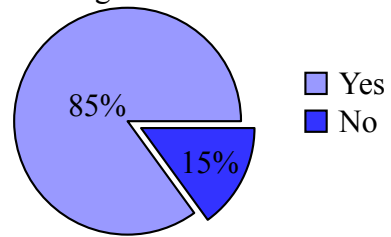


Figure 3: Most Used Feature

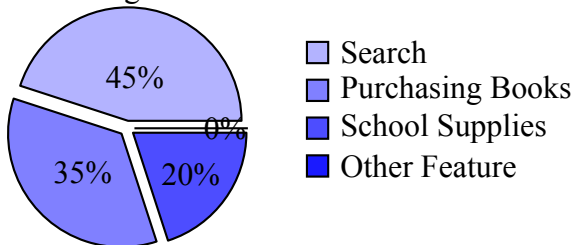


Figure 4: Meet Users Purchase Needs

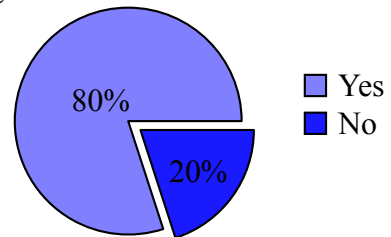


Figure 5: Difficulties Faced

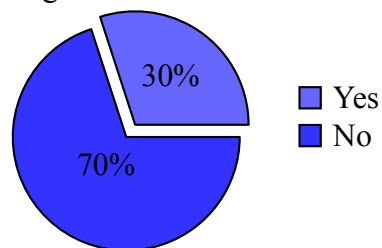


Figure 6: Primary Reliance on the App

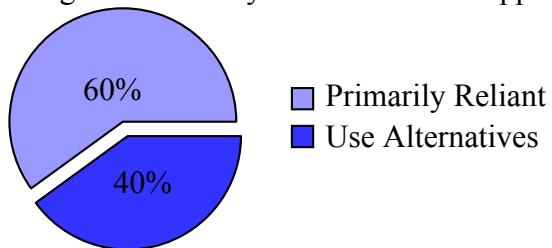


Figure 7: Alternative Apps Used

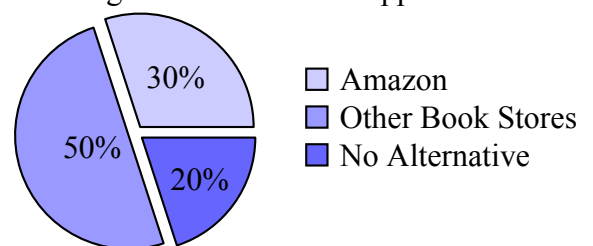
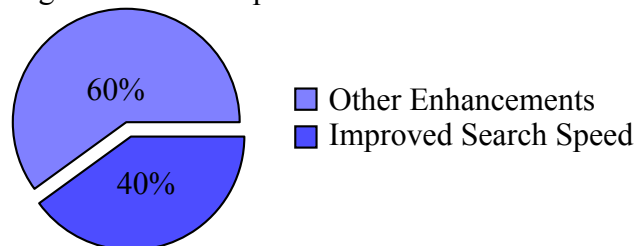


Figure 8: Future Updates or Features Wanted



0.5.6 Existing Programs

Table.1 shows the Advantages and Disadvantages of Jarir Bookstore and Virgin Megastore.
Comparison of Applications

Application	Advantages	Disadvantages
Jarir Bookstore	<ol style="list-style-type: none">1. A wide variety of products, especially books and stationery.2. Ongoing offers and discounts.3. Good customer service and flexible exchange procedures.	<ol style="list-style-type: none">1. Some prices may be high compared to competitors.2. The shopping experience may be less interactive.
Virgin Megastore	<ol style="list-style-type: none">1. Focus on entertainment and music products.2. Exclusive offers and premium memberships.3. An engaging user experience.	<ol style="list-style-type: none">1. Less diversity in other categories like books.2. Customer service may need improvement at times.

Table 1: Advantages and Disadvantages of Jarir Bookstore and Virgin Megastore

The offerings of Jarir’s app are notable for their wide range of goods and services, as well as for their compelling bargains and continuous sales, efficient customer support, and accommodating return and exchange policies. However, exchanges and customer support might be slower on the Virgin Megastore app, which focuses more on entertainment items and provides memberships and special offers.

0.5.7 Conclusion of section

The analysis of the ”Jarir Bookstore” application identifies critical functional and non-functional requirements for a user-friendly platform. Emphasizing essential features like account creation, product ordering, and maintenance requests, the application can cater to various user needs. User feedback and survey results will guide future enhancements, ensuring the app remains competitive in the digital marketplace. By prioritizing user experience, the Jarir Bookstore application will meet current expectations and adapt to future trends, fostering a loyal customer base and driving growth.

0.6 Design

0.6.1 Introduction of section

The design phase is crucial in the development of the Jarir Bookstore application, as it lays the foundation for a user-friendly and efficient shopping experience. This section outlines the system architecture, detailing both the client-side and server-side components, as well as the business logic that supports core functionalities. By integrating advanced technologies and robust design principles, the application aims to deliver a seamless experience for users, enabling them to browse, purchase, and manage their orders effortlessly.

0.6.2 System Architecture

The Jarir Bookstore application offers a seamless shopping experience with a robust system architecture, including a mobile application and server-side backend. Its data models organize user, product, order, and review information for personalized experiences and efficient inventory management. Technical specifications ensure high performance, security, and usability.

Client-Side (Frontend)

Mobile Application: Developed for iOS and Android platforms using frameworks Flutter. User Interface: Designed with a focus on usability, including sections for product browsing, user accounts, and support.

Server-Side (Backend)

- Web Server: Handles requests from the mobile application using frameworks like Node.js or Django.
- API Layer: RESTful API or GraphQL for communication between the client and server, enabling efficient data exchange.
- 1.2.3. Database: Relational Database Management System (RDBMS) like PostgreSQL or MySQL for structured data storage.

Business Logic Layer

- Microservices: Individual services for handling different domains, such as:
 - Product Service: Manages product listings, details, and categories.
 - Order Service: Handles cart operations, order processing, and payments.
 - User Service: Manages user profiles, authentication, and authorization.

Application Algorithm

Perusing Products:

- **Inputs:** Product category or search term.
- **Operations:**

- Query the database to retrieve a list of items based on the input.
- Display product details (name, image, price) to the user.

- **Outputs:** A list of available products.

Include Item in Cart:

- **Inputs:** Product ID and quantity.
- **Operations:**
 - Check product availability in stock.
 - Add the item to the user's shopping cart if available.
- **Outputs:** Updated cart totals and confirmation of the added product.

Checkout Process:

- **Inputs:** Delivery address, payment details, and cart information.
- **Operations:**
 - Verify address and payment details.
 - Update the database with the new order.
 - Restock purchased items.
 - Provide order confirmation to the user.
- **Outputs:** Shipment information page and order confirmation message.

Requests for After-Sale Services:

- **Inputs:** Type of service requested (repair, warranty extension, or exchange).
- **Operations:**
 - Confirm the service request.
 - Create a new service request in the database.
 - Provide confirmation of the requested service to the user.
- **Outputs:** Confirmation of the service request and updates.

Order Tracking:

- **Inputs:** Order ID.
- **Operations:**
 - Query the database for the current status of the order.
 - Display the order's status to the user.
- **Outputs:** Information on the order status (processed, shipping, delivered).

Information Recovery: The Jarir Bookstore application utilizes SQL queries to retrieve data as needed. When users request specific information (e.g., order histories or product details), the database responds promptly.

Day-to-day Database Management: The database manages daily activities to ensure seamless functionality:

- **Data Updates:** The database updates itself in real-time whenever new information is input, such as user registrations or product additions.

Authorization and Access: Access control ensures users can only see or modify data relevant to their roles:

- **Customers:** Access their own account information, product details, and order histories.
- **Admins:** Access all user data, manage products, and monitor system performance.
- **Service Staff:** Handle maintenance or warranty inquiries and manage service requests.

Managing Extensive Data Sets: As the Jarir Bookstore application expands, it faces challenges due to increasing data volumes:

- **Distributed Storage:** Implement storage technologies for efficiency and speed.
- **Indexing:** Utilize indexing techniques for effective searching and expedited data retrieval.

Restore and Backup: Regular backups are performed to guard against data loss:

- **Daily Backups:** A complete backup of the database is taken to ensure data integrity.
- **Recovery Mechanism:** Allows for rapid restoration from backups to minimize operational disruption.

Data Security and Protection: The Jarir Bookstore application prioritizes user data protection using advanced security techniques:

- **Encryption:** Sensitive data, such as passwords and payment details, is encrypted to prevent unauthorized access.
- **Firewalls and Security Protocols:** Advanced defensive mechanisms are implemented to prevent intrusion attempts and unauthorized database access.

Table 2: User Data Example

User ID	Name	Email	Password	Phone Number	Location
1	John Doe	john@example.com	hashed_password_1	1234567890	Riyadh
2	Jane Smith	jane@example.com	hashed_password_2	0987654321	Jeddah
3	Admin User	admin@example.com	hashed_password_3	1122334455	Dammam

Technologies

Interactive Resources: The application features interactive elements, such as product reviews, Q and A sections, and feedback forms, to enhance user engagement.

- **Functional Analysis:** By enabling users to communicate, ask questions about products, and share experiences, these features foster a sense of community. Customers can also contact support directly for any inquiries.

Online Showrooms: The Jarir Bookstore app includes virtual showrooms, allowing customers to explore products through immersive features like augmented reality (AR) and 3D views.

- **Functional Analysis:** Users can interact with products in a more engaging way before purchasing, helping them understand features, dimensions, and aesthetics.

Payment and Tracking Tools: The application offers secure payment options alongside features for tracking purchase history and user preferences.

- **Functional Analysis:** Users can complete transactions using credit cards, PayPal, installment payments, and other secure methods. The system tracks customer preferences and purchases to provide tailored promotions and recommendations.

Data Analytics: The application provides advanced analytics capabilities for monitoring customer activity, inventory management, and sales performance.

- **Functional Analysis:** By analyzing customer trends, optimizing stock levels, and evaluating marketing effectiveness, the Jarir Bookstore can make informed business decisions.

Languages

- **Java:** A popular backend programming language known for its security and scalability. Java allows for cross-platform interoperability, ensuring smooth system functionality.
- **JavaScript:** Enhances the user interface by utilizing tools like React.js for responsive design, enabling dynamic interactions and improving user experience.
- **CSS and HTML:** Used to create an appealing and user-friendly interface by structuring and styling the application's frontend.
- **SQL:** Vital for database management, enabling efficient creation, updating, and retrieval of user and product data.
- **JSON and XML:** JSON is preferred for its lightweight format and efficiency when exchanging data between system components and external systems.
- **PHP:** Can be used to integrate external services and run server-side scripts, providing flexibility to backend processes.
- **Python:** Utilized in machine learning and data analysis applications to offer personalized recommendations based on user behavior.

Security

- **Encryption:** To safeguard data both during transmission and at rest, advanced encryption technologies such as SSL/TLS are employed.
 - **Functional Analysis:** Prevents unauthorized access to sensitive user data, making it more difficult for hackers to intercept or alter data.
- **Access Control and Account Management:** Access permissions are defined according to user roles, ensuring users can only access information that is authorized.
 - **Functional Analysis:** Multi-factor authentication (MFA) enhances security by requiring a password and a verification code sent to the user's device.
- **Multi-Factor Authentication (MFA):** Requires multiple forms of authentication, improving user identity verification.
 - **Functional Analysis:** Reduces the likelihood of unauthorized access even if passwords are compromised.
- **Prevention of Cyberattacks:** The system employs cutting-edge techniques, including intrusion detection systems and firewalls, to guard against cyberattacks.
 - **Functional Analysis:** Monitors for unusual activity and sends alerts in case of potential security breaches.

Interface

The interface of the Jarir Bookstore application is designed to be user-friendly and visually appealing. It prioritizes ease of navigation and accessibility, ensuring a seamless experience for all users. Key features of the interface include:

- **Responsive Design:** The application adjusts to different screen sizes and devices, providing an optimal viewing experience on smartphones, tablets, and desktops.
- **Intuitive Navigation:** Clear menus and categories help users find products quickly and easily.
- **Interactive Elements:** Features such as product sliders, review sections, and feedback forms enhance user engagement.
- **Visual Appeal:** High-quality images and a cohesive color scheme create an inviting atmosphere for browsing products.
- **Accessibility Features:** The interface includes options for text enlargement and color contrast adjustments to accommodate all users.

Sample Images

Below are sample images showcasing different aspects of the interface:

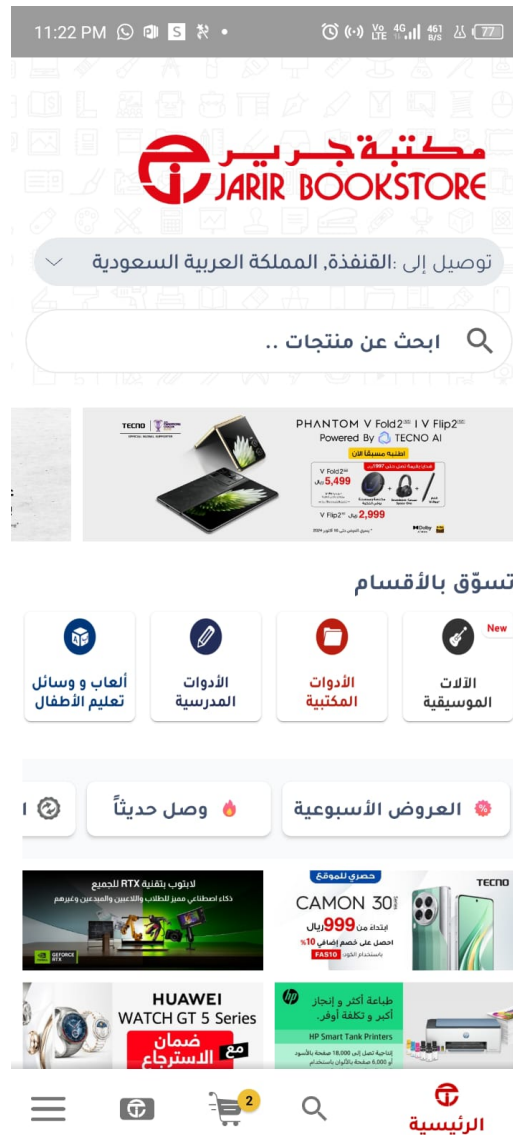


Figure 9: Main interface

Main Interface Overview:

The main interface serves as the central hub for user interaction within the application, designed to facilitate ease of use and accessibility to various features. Its layout and design principles prioritize user experience, ensuring that functionalities are readily available and intuitive to navigate.

Layout and Design

- **Clean Aesthetic:** The main interface features a clean and modern design, with a well-organized layout that minimizes clutter. This allows users to focus on essential tasks without being overwhelmed by excessive information or options.
- **Color Scheme and Typography:** A cohesive color palette enhances visual appeal, while carefully selected typography improves readability. The choice of colors may also serve functional purposes, such as differentiating categories or indicating interactive elements.

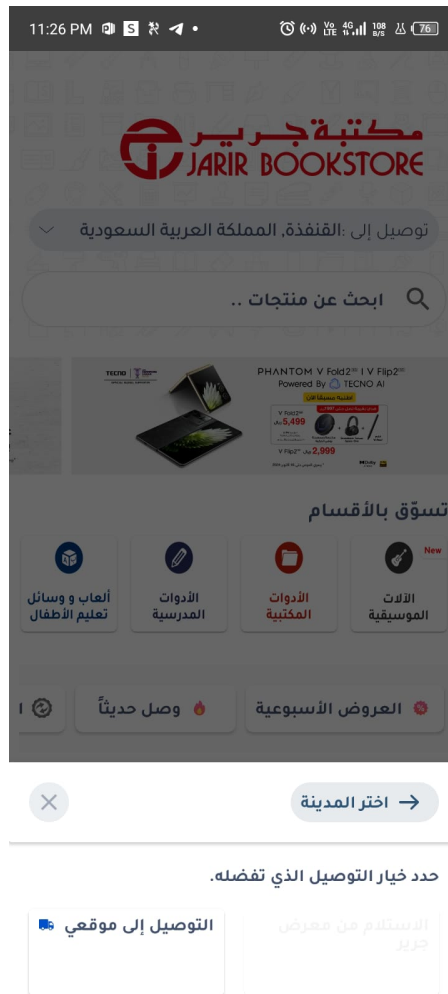


Figure 10: Choosing the right location

Choosing the right location Overview:

Choosing the right location is crucial for the success of any application or service that relies on geographical data or user interaction. This aspect not only enhances user experience but also increases engagement and satisfaction. Below are some key considerations when selecting a location:

Product list Overview:

The product list serves as a crucial component of the application, providing users with a comprehensive overview of available items or services. This section is designed to facilitate easy browsing and selection, ensuring a seamless shopping experience.

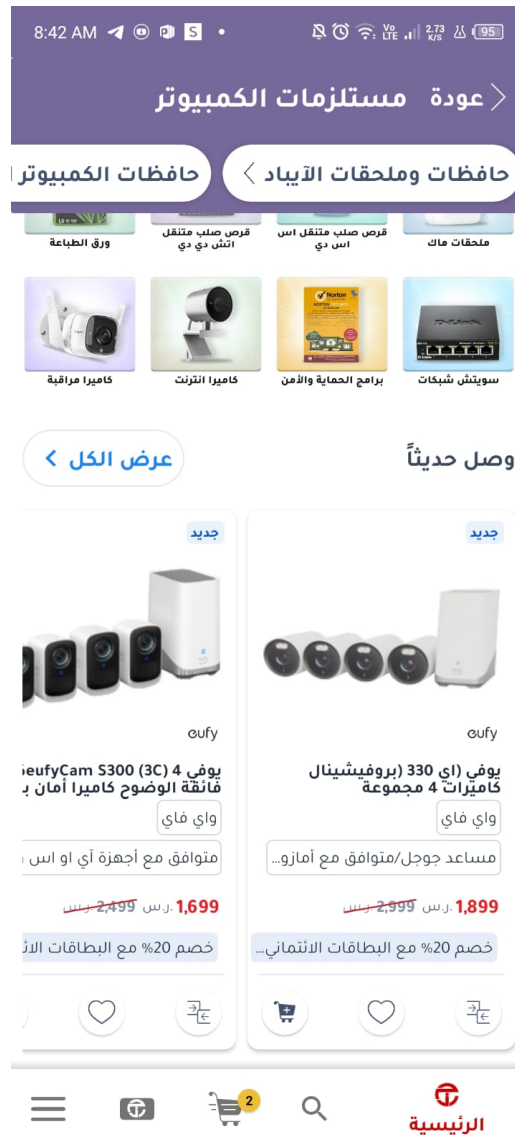


Figure 11: Product list

Product details Overview:

The product details section is essential for providing users with comprehensive information about a specific item. This section is designed to aid in the decision-making process by presenting relevant details in an organized manner.

Shopping cart Overview:

The shopping cart is a critical component of the online shopping experience, serving as a temporary holding area for items that users intend to purchase. This feature is designed to facilitate seamless transactions and enhance user convenience.



Figure 12: Product details

customer account Overview:

The customer account section is a vital part of the application, allowing users to manage their personal information, order history, and preferences in a centralized location. This feature enhances user experience by providing easy access to essential functionalities.

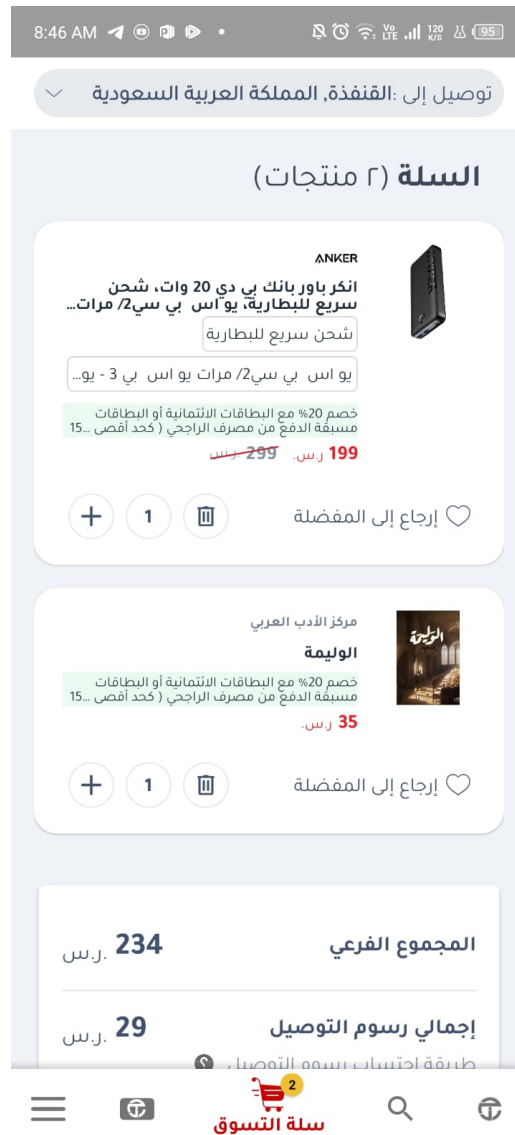


Figure 13: Shopping cart

0.6.3 Data Mode:

Use case diagram:

Use case Description:



Figure 14: Customer account

0.6.4 Conclusion of section

In conclusion, The Jarir Bookstore application uses a modular architecture for scalability, efficiency, and a rich user experience. It incorporates structured client-side, server-side, and business logic layers, ensuring modern user demands. Machine learning for personalized recommendations and robust security measures enhance functionality. This design ensures the application remains competitive and responsive to user needs, making it a platform for book purchases and engagement.

0.7 Conclusion

The "Jarir Bookstore" App project aims to enhance the shopping experience by combining innovative design and thorough analysis. The app's technical specifications and user-focused approach will strengthen Jarir Bookstore's market position. By meeting user demands and using cutting-edge technology, the project aims to increase customer satisfaction, sales growth, and brand loyalty. The app is designed for user-friendliness, allowing easy browsing and purchase of products.

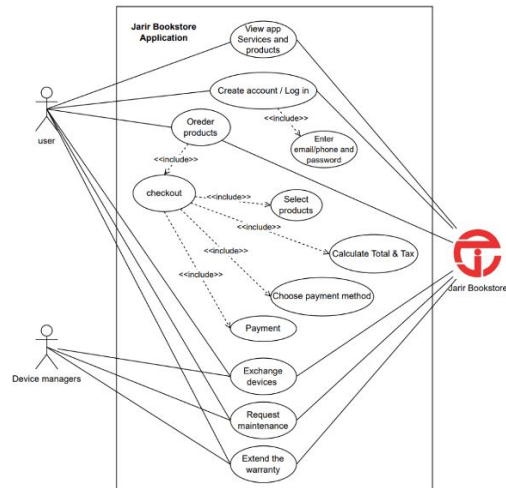


Figure 15: Use Case Diagram

Element	Description
System	Jarir Bookstore Application
Use Case	View App Services and Products
Actors	User
Data	Product details, services descriptions
Stimulus	User opens the application and navigates to view products and services.
Response	Display services and products with details.
Comments	User can also view products by scanning a barcode.

Table 3: Use Case: View App Services and Products

Advanced encryption mechanisms and stringent security measures protect user data. Machine learning techniques provide personalized recommendations based on users' interests. Continuous development and responsiveness to market demands are crucial steps towards Jarir Bookstore's vision.

0.8 Reference

Jarir Bookstore. LinkedIn, n.d. Web. 24 Oct. 2024.
 About Jarir. Jarir, n.d. Web. 24 Oct. 2024.
 Company Profile. Jarir, n.d. Web. 24 Oct. 2024.

0.9 Appendices

Survey Link
 GitHub Link 1
 GitHub Link 2

Element	Description
System	Jarir Bookstore Application
Use Case	Create Account / Log In
Actors	User
Data	User information (email/phone and password)
Stimulus	User enters their information or signs up to create a new account.
Response	App verifies entered information and logs user in or creates a new account.
Comments	A verification code will be sent to the phone number to email to complete the account creation process.

Table 4: Use Case: Create Account / Log In

Element	Description
System	Jarir Bookstore Application
Use Case	Order Products
Actors	User
Data	Product details, user account, and delivery information
Stimulus	User selects products, adds delivery information, and presses the "checkout" button.
Response	The app confirms the order and processes it for delivery.
Comments	User should choose one of the payment methods: Mada card, Apple Pay, or loyalty programs.

Table 5: Use Case: Order Products

Element	Description
System	Jarir Bookstore Application
Use Case	Exchange Devices
Actors	User, Device Managers
Data	Device details, user account
Stimulus	Device manager initiates a device exchange request.
Response	The app processes the exchange and updates the device records.
Comments	None

Table 6: Use Case: Exchange Devices

Element	Description
System	Jarir Bookstore Application
Use Case	Request Maintenance
Actors	User, Device Managers
Data	Device details, maintenance history
Stimulus	User or Device Manager submits a maintenance request.
Response	The app schedules the maintenance request.
Comments	None

Table 7: Use Case: Request Maintenance

Element	Description
System	Jarir Bookstore Application
Use Case	Extend Warranty
Actors	User, Device Managers
Data	Device details, warranty period, user account
Stimulus	User requests an extension of the warranty period for their device.
Response	The app processes the request and updates the warranty details.
Comments	None

Table 8: Use Case: Extend Warranty