

A

PROJECT REPORT

on

Vietnam Food B2C Marketplace

Submitted in partial fulfilment of the requirements for the degree of

BACHELOR OF TECHNOLOGY



Session: - Jan-June 2023

Under Guidance of
Mr. Aaditya Maheshwari
Head of Industry Project
Dept. of CSE TINJRIT, Udaipur

Submitted by
Lucky Jadia (19ETCEC006)
Nikhil Solanki (19ETCEC010)

8th Sem (ECE)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

TECHNO INDIA NJR INSTITUTE OF TECHNOLOGY, UDAIPUR-313001

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TECHNO INDIA NJR
INSTITUTE OF TECHNOLOGY

Department of Electronics and Communication Engineering
Techno India NJR Institute of Technology, Udaipur-313001

Certificate

This is to certify that project work titled **Vietnam Food B2C Marketplace** by **Lucky Jadia** was successfully carried out in the Department of Computer Science and Engineering, TINJRIT and the report is approved for submission in the partial fulfillment of the requirements for award of degree of Bachelor of Technology in Computer Science and Engineering.

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Head of Industry Project
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Dr. Vivek Jain
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TECHNO INDIA NJR
INSTITUTE OF TECHNOLOGY

Department of Electronics and Communication Engineering
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Certificate

This is to certify that project work titled **Vietnam Food B2C Marketplace** by **Nikhil Solanki** was successfully carried out in the Department of Computer Science and Engineering, TINJRIT and the report is approved for submission in the partial fulfillment of the requirements for award of degree of Bachelor of Technology in Computer Science and Engineering.

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TECHNO INDIA NJR INSTITUTE OF TECHNOLOGY

Department of Electronics and Communication Engineering
Techno India NJR Institute of Technology, Udaipur-313001

Examiner Certificate

This is to certify that the following student

Lucky Jadia and Nikhil Solanki of final year B.Tech. (Computer Science and Engineering), was examined for the project work titled

Vietnam Food B2C Marketplace

during the academic year 2022 – 2023 at Techno India NJR Institute of Technology, Udaipur

Remarks:

Date:

Signature

(Internal Examiner)

Name :-

Designation:-

Department: -

Organization:-

Signature

(External Examiner)

Name :-

Designation:-

Department: -

Organization:-

Preface

Welcome to the Vietnam Food Store concept in Spryker! This documentation provides an overview of this tailored e-commerce solution for Vietnamese food stores and grocery businesses. It covers key features, functionalities, and the development process.

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Chapter 2: Technology Stack

Chapter 3: Architecture and Design

Chapter 4: Features and Functionality

Chapter 5: Product Catalog and Management

Chapter 6: Order Management

Chapter 7: Search and filtering

Chapter 8: Timeline and Milestones

Chapter 9: Screenshots

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CHAPTER 1

Project Scope:

Description of the Vietnam Food Store concept:

The Vietnam Food Store concept in Spryker is an e-commerce solution specifically designed to cater to the needs of a Vietnamese food store or grocery business. Spryker is a modular commerce platform that provides a flexible and scalable foundation for building customized online stores.

1) Product Catalog: The concept includes a comprehensive product catalog that allows the store owner to list and manage a wide range of Vietnamese food items such as rice, noodles, spices, sauces, fresh produce, seafood, meat, snacks, and beverages.

2) Localization: The concept is tailored to the Vietnamese market, including support for the Vietnamese language, local currency (Vietnamese Dong - VND), and other regional specifics. It ensures that the store provides a seamless and localized shopping experience for Vietnamese customers.

3) Inventory Management: Spryker's inventory management capabilities enable the store owner to track and manage stock levels of various food products. This ensures accurate product availability information and helps prevent overselling.

4) Order Management: The concept includes order management features that allow the store owner to efficiently process and fulfill customer orders. It includes functionalities such as order tracking, shipping integration, and order status updates.

5) Payment and Checkout: Spryker provides integration with popular payment gateways in Vietnam, enabling secure and convenient payment options for customers. The checkout process is optimized for a smooth and hassle-free experience, allowing customers to complete their purchases easily.

6) Promotions and Discounts: The concept allows the store owner to create and manage promotions, discounts, and special offers to attract customers and increase

sales. This can include discounts on specific products, bulk purchase discounts, or loyalty programs.

7) Responsive Design: Spryker ensures that the Vietnam Food Store concept is built with a responsive design, making the online store accessible and user-friendly across different devices, including desktop computers, tablets, and mobile phones.

8) Search and Filtering: The concept incorporates search and filtering capabilities to help customers quickly find the desired food products. This includes search by keywords, categories, brands, and other relevant attributes.

9) Reviews and Ratings: The concept supports customer reviews and ratings, allowing shoppers to provide feedback and share their experiences with the products. This helps build trust and credibility for the store and assists other customers in making informed purchasing decisions.

Target Audience:

The target audience can include:

1) Vietnamese Consumers: The concept is designed to appeal to Vietnamese consumers who prefer the convenience of shopping online for their food needs. This can include busy professionals, working parents, urban dwellers, and individuals seeking a hassle-free way to purchase a wide range of Vietnamese food products.

2) Vietnamese Expatriates: Vietnamese citizens living abroad, including students, professionals, or individuals residing in different countries, may have a strong desire for authentic Vietnamese food products. The concept provides an online platform where they can easily access and purchase their favorite Vietnamese food items.

3) Vietnamese Community Abroad: Vietnamese communities residing in other countries often seek access to traditional Vietnamese ingredients and products. The Vietnam Food Store concept in Spryker can cater to these communities by offering a reliable online store to meet their culinary needs.

4) Food Enthusiasts: Food lovers and enthusiasts who appreciate Vietnamese cuisine may be a part of the target audience. They may be interested in exploring and experimenting with authentic Vietnamese food items and ingredients.

5) Tourists: The concept can also target tourists visiting Vietnam who wish to purchase local food products as souvenirs or to recreate Vietnamese dishes when they return home.

Key Features:

- Product Catalog Management
- Localization and Regional Specifics
- Inventory Management
- Seamless Checkout Process
- Search and Filtering
- Promotions and Discounts
- Reviews and Ratings
- Responsive Design
- Order Management and Tracking
- Customer Account Management
- Integration Capabilities

CHAPTER 2

Technology stack

Spryker is an e-commerce Commerce OS developed in PHP, that promotes SOLID principles and clean code. Its purpose is to facilitate rapid development in building a customized solution for an e-commerce business. Spryker uses a set of well-known tools: Redis. Redis is the most popular key-value database; the name is an abbreviation for Remote Dictionary Server. In Spryker it's used as a client-side data source for localized content. The Redis key-value datab Symfony. Symfony is the leading PHP framework for creating MVC web applications. Spryker

Silex (deprecated). Silex is a PHP micro-framework based on Symfony components; it offers Twig—a fast and modern PHP templating engine. Please use Spryker Application and Application Plugins instead of Silex Application and Service Providers.

Twig. It is a fast and modern PHP templating engine.

Propel. It is an ORM library for PHP, offering an object-relational mapping toolkit. It's part of the Symfony framework. Propel's principal function is to provide the mapping between database tables and PHP classes. Propel includes a source code generator for creating PHP classes based on the data model definition given through an XML file. The data model definition is independent of the database used, so Spryker provides a single interface that enables access to different database management systems.

Jenkins. Cronjobs can be easily configured in the jobs configuration file.

Database: MySQL, MariaDB, or PostgreSQL. Spryker supports MySQL, MariaDB, or PostgreSQL. You can configure it in the main configuration file.

Overview of Spryker Framework

Spryker is a Commerce Operating System, mainly composed of several applications, such as Storefront (Yves), Back Office (Zed) and Storefront API (Glue).

Storefront—Frontend-presentation layer for customers, provided by Yves Application

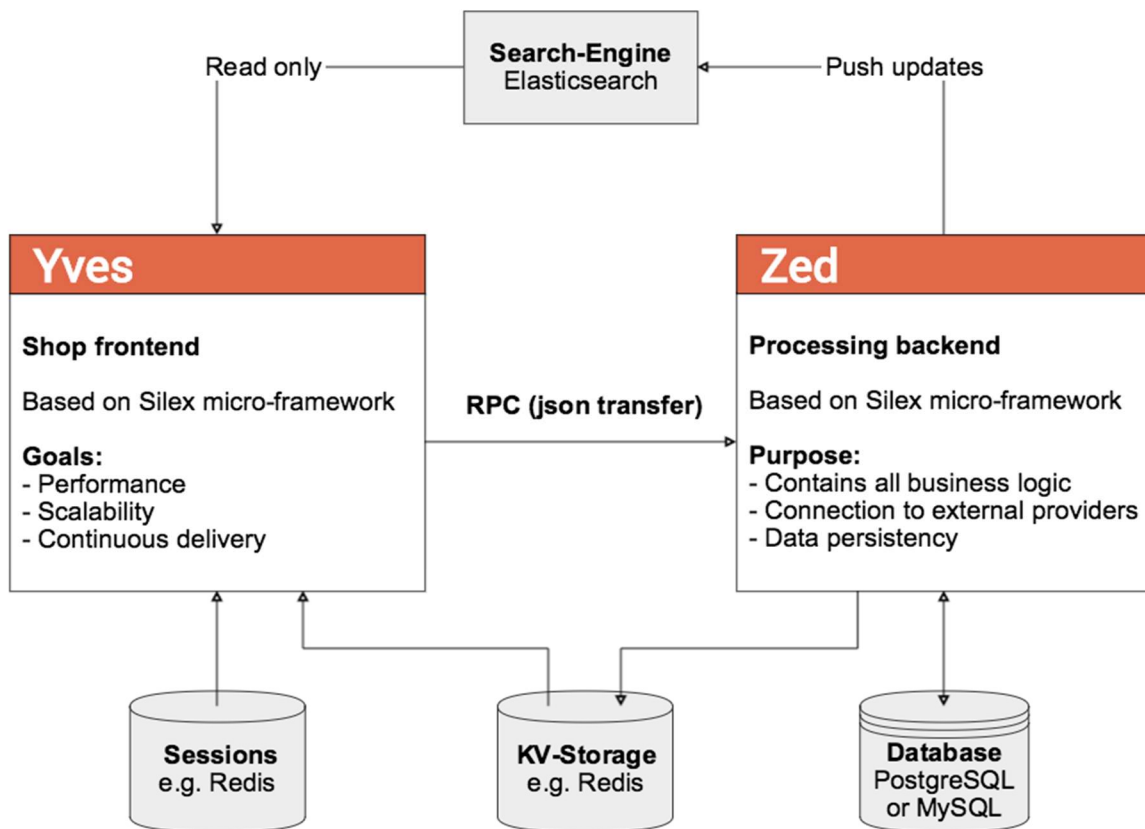
Layer based.

Back Office—an application that contains all business logic and the backend GUI, provided by Zed Application Layer, and also uses the Symfony Components.

Storefront API—an application providing resources for customers' interaction, provided by the Glue Application Layer, and can work based on either REST.

Backend and Frontend Technologies Used

The following diagram shows the conceptual parts of the application and their connections:



The Spryker OS provides the following Application Layers:

Yves—provides frontend functionality with the light-weight data access.

Zed—provides back office/backend functionality with complicated calculations.

Glue—provides infrastructure for API with the mixed data access.

Client—provides data access infrastructure.

Shared—provides shared code abstractions to be used in other Application Layers of the same module.

Service—provides infrastructure for the stateless operations, usually utils.

Application Layers structure supports you in a better conceptual decoupling and not always represent a bootstrapped Application.

Database Management

A database management system (DBMS) is a software tool that helps organize, store and retrieve data from a database. It involves a number of functions that collectively work together to ensure that the data is accurate, available and accessible.

A database management system consists of three main elements:

A physical database that contains the data.

A database engine that helps to access the data and modify its contents.

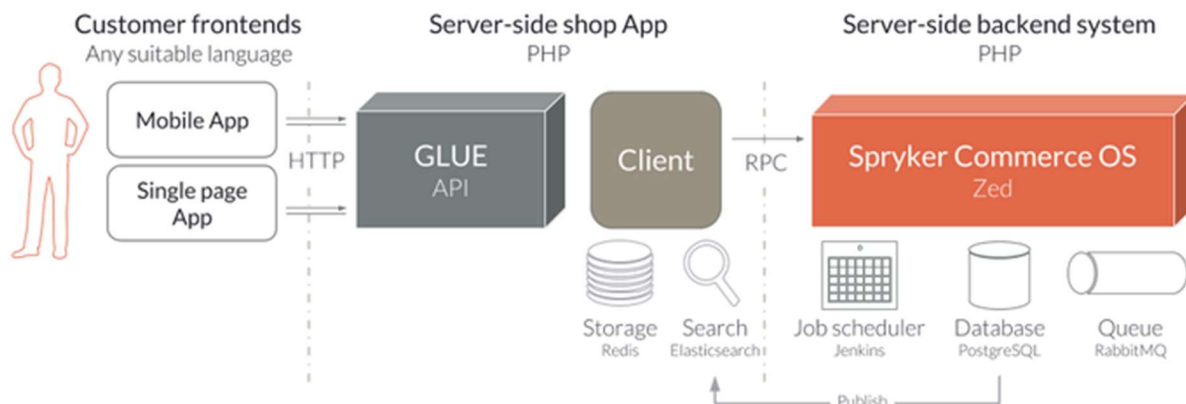
A database scheme which provides the logical structure of the data stored.

CHAPTER 3

Architecture and Design

System Architecture:

To provide a clear path for the Spryker Commerce OS development and extension, its architecture is based on strict modularity and separation. These principles are strongly supported by the OS architecture.



Component Diagrams:

The application separation brings three main benefits:

Performance. A Frontend Applications in Spryker uses a data storage separated from the backend one. It uses a blazing fast key-value storage while the backend uses a relational database. With this separation, it is way faster than using the traditional way of sharing one relational database for both applications.

Scalability. As frontends in Spryker have their own applications, storages, and deployments, scalability becomes easily achievable and given by the architecture.

Spryker can be easily scaled out horizontally by simply just adding more instances with more storages without affecting the backend application and logic.

Security. Having two applications, accessing the backend relational database becomes a harder challenge for cyber attacks. The backend application also is usually hidden behind a firewall making the Commerce OS even more secured for different e-commerce applications.

Introduction:

This project aims to develop a comprehensive food and grocery app using the Spryker framework. The app will cater to the needs of users who seek a convenient and efficient way to purchase food and grocery items online. By leveraging the features and flexibility offered by Spryker, we aim to create a user-friendly and robust e-commerce platform that enhances the shopping experience for customers in the food and grocery domain.

Objectives:

The primary objectives of the project are as follows:

Enable users to browse and search for a wide range of food and grocery products conveniently.

Provide a user-friendly and intuitive interface for users to add items to their shopping cart and proceed with secure and seamless checkout.

Implement a flexible and customizable order management system to handle various order types, including scheduled deliveries and subscriptions.

Integrate payment gateways to facilitate secure online transactions.

Offer personalized recommendations and promotions based on user preferences and purchase history.

Implement a robust inventory management system to ensure accurate product availability and timely fulfillment.

Incorporate delivery management functionalities, including tracking and notifications, to provide users with a seamless and transparent delivery experience.

Ensure responsive and mobile-friendly design to enable users to access the app from various devices.

Enable easy management of product catalog, including categories, attributes, and pricing, to support scalability and adaptability.

Target Audience:

The food and grocery app will cater to a wide range of customers, including individuals and families looking for a convenient and time-saving way to purchase food and grocery items. The app will address the needs of busy professionals, working parents, and individuals seeking a seamless shopping experience with access to a variety of products, personalized recommendations, and reliable delivery services.

Key Features: The food and grocery app will offer the following key features:

Product Catalog: A comprehensive catalog of food and grocery items, organized into categories for easy navigation and search.

Shopping Cart and Checkout: Users will be able to add items to their cart, review their order, and proceed with a secure and streamlined checkout process.

Order Management: The app will support order tracking, order history, and order modification to ensure a smooth order management experience.

Payment Integration: Integration with popular payment gateways to facilitate secure online transactions, including credit/debit cards and digital wallets.

Personalization and Recommendations: Utilizing user preferences and purchase history to offer personalized product recommendations and tailored promotions.

Inventory Management: Robust inventory management capabilities to ensure accurate product availability and timely updates.

CHAPTER 4

FEATURES AND FUNCTIONALITY

Delivery Management: Integration with delivery services, enabling order tracking, notifications, and seamless coordination between the app and delivery providers.

Responsive Design: A mobile-friendly and responsive design to provide a consistent user experience across different devices.

Admin Panel: An intuitive and user-friendly admin panel for easy management of the product catalog, orders, customers, and promotions.

Conclusion:

By leveraging the capabilities of the Spryker framework, this food and grocery app project aims to revolutionize the way users shop for their daily food and grocery needs. With a user-centric approach, seamless functionality, and robust features, we are committed to delivering a reliable, efficient, and enjoyable shopping experience for our customers in the food and grocery domain.

Project Manager:

The project manager is responsible for overseeing the entire development process, coordinating team efforts, managing timelines, and ensuring successful project delivery. They will work closely with stakeholders to gather requirements, prioritize tasks, and manage project risks.

Product Owner:

The product owner represents the stakeholders and acts as a bridge between the development team and business requirements. They are responsible for defining the product vision, prioritizing the product backlog, and ensuring that the developed features align with business objectives.

Spryker Developer:

Spryker developers specialize in working with the Spryker framework and have a deep understanding of its architecture and modules. They are responsible for implementing and customizing Spryker features, integrating third-party services, and ensuring the overall technical excellence of the food and grocery app.

Front-end Developer:

Front-end developers are responsible for creating the user interface and ensuring an intuitive and visually appealing design for the food and grocery app. They work closely with the UX/UI designers and implement responsive design principles to provide an optimal user experience across devices.

UX/UI Designer:

UX/UI designers focus on creating a seamless and intuitive user experience for the food and grocery app. They conduct user research, design wireframes and prototypes, and collaborate with the front-end developers to ensure a visually appealing and user-friendly interface.

Quality Assurance (QA) Engineer: QA engineers are responsible for testing the food and grocery app to ensure that it meets the required quality standards. They create test plans, perform functional and non-functional testing, report and track bugs, and collaborate with the development team to resolve issues.

DevOps Engineer: DevOps engineers handle the deployment, infrastructure, and continuous integration aspects of the food and grocery app. They set up and manage the development and production environments, implement automation tools, monitor performance, and ensure smooth deployment and scalability of the application.

Database Administrator (DBA):

The DBA is responsible for database management and optimization. They handle data modeling, performance tuning, backup and recovery processes, and ensure data integrity and security within the food and grocery app.

Scrum Master (if following Scrum methodology):

The Scrum Master facilitates the agile development process by ensuring adherence to Scrum principles, organizing sprint planning, daily stand-ups, sprint reviews, and retrospectives. They also support the team in removing any obstacles that may hinder progress.

Technologies Used

Spryker Commerce OS:

Spryker Commerce OS is the core framework that powers the marketplace. It provides a modular and flexible architecture, allowing developers to customize and extend the platform according to marketplace requirements. It includes various modules for essential e-commerce functionalities, such as catalog management, order management, customer management, and payment integration.

Marketplace Extension: Spryker Marketplace comes with a dedicated extension that adds specific marketplace features and functionality on top of the core framework. This extension provides modules and tools for marketplace-specific aspects like vendor management, product attribution, commission management, and rating/review systems.

Vendor Management Tools:

Spryker Marketplace offers tools to manage vendors efficiently. It includes features for vendor onboarding, vendor profile management, product submission by vendors, and vendor-specific reporting and analytics.

Product and Catalog Management:

Spryker Marketplace provides robust tools for managing product catalogs. It supports the creation and management of product listings, variants, attributes, and pricing. It also enables categorization, search, and filtering features to help buyers find relevant products within the marketplace.

Order Management:

The marketplace platform includes comprehensive order management tools. It facilitates order processing, tracking, and fulfillment, allowing vendors to manage their own orders and providing marketplace administrators with oversight and control over the entire order flow.

Payment Integration:

Spryker Marketplace supports integration with various payment gateways, enabling secure and seamless payment transactions for buyers and vendors. It provides flexibility in configuring payment methods, managing payouts to vendors, and handling commission fees.

Rating and Review System:

A key feature of marketplaces is the ability for buyers to provide ratings and reviews for products and vendors. Spryker Marketplace includes modules that facilitate collection and display of ratings and reviews, enabling buyers to make informed purchasing decisions and promoting vendor credibility.

Analytics and Reporting:

Spryker Marketplace incorporates analytics and reporting tools to track key performance indicators (KPIs) and provide insights into the marketplace's operations. It offers reporting features for sales, vendor performance, product popularity, and other metrics critical to the success of the marketplace.

Integration with Third-Party Systems:

Spryker Marketplace allows integration with various third-party systems and services. This includes integration with shipping and logistics providers for efficient order fulfillment, CRM systems for customer management, and marketing automation tools for targeted campaigns.

Front-end Customization:

Spryker Marketplace provides flexibility for front-end customization. It supports front-end technologies like HTML, CSS, JavaScript, and front-end frameworks to create a visually appealing and user-friendly marketplace interface.

User Registration and Authentication

To implement user registration and authentication in a food and grocery app in Vietnam:-

1. **Database Setup:** Set up a database to store user information securely. Popular options include MySQL, PostgreSQL, or MongoDB.
2. **Registration Page:** Create a registration page where users can enter their details to create an account. Typical information to collect includes name, email address, password, and phone number. Ensure that you comply with Vietnamese data protection regulations.
3. **User Validation:** Implement validation checks on the registration form to ensure that the entered information is valid. For example, validate email addresses and phone numbers to ensure they are in the correct format.
4. **Authentication System:** Implement an authentication system to verify user credentials during login. This can be done using session-based authentication or token-based authentication, depending on your app's requirements.
5. **User Login:** Create a login page where users can enter their credentials (email/username and password) to access their accounts. Validate the entered information against the stored user data in the database.
6. **Password Security:** Implement password hashing and salting techniques to store passwords securely.
7. **Two-Factor Authentication (Optional):** For added security, consider implementing two-factor authentication (2FA) using SMS verification or authenticator apps. This helps protect user accounts from unauthorized access.

8. **Account Recovery:** Implement a mechanism for users to recover their accounts if they forget their passwords. This can involve sending password reset links to registered email addresses or providing security questions for account verification.

9. **User Profiles:** Develop user profile pages where users can view and update their personal information, such as addresses, payment methods, and preferences.

10. **Session Management:** Manage user sessions securely to maintain user authentication across different app screens. Ensure that sessions are properly handled and expire after a period of inactivity.

11. **Error Handling and Logging:** Implement proper error handling and logging mechanisms to track and troubleshoot issues related to user registration and authentication.

12. **Compliance with Regulations:** Ensure compliance with Vietnamese data protection laws, such as the Law on Cybersecurity and the Personal Data Protection Law. Pay attention to data storage, encryption, and user consent requirements.

CHAPTER 5

Product Catalog Management

To manage the product catalog in a food and grocery app in Vietnam -

1. **Categorization:** Create a hierarchical category structure for the products. Divide them into relevant categories such as fruits, vegetables, meat, dairy, beverages, snacks, etc. This will help users easily navigate and find products.
2. **Product Information:** Define the necessary information for each product, such as name, description, price, unit of measurement, nutritional information, images, and any specific attributes like brand, origin, or certifications.
3. **Database Setup:** Set up a database to store the product information. Choose a database management system that suits your app's needs, such as MySQL, PostgreSQL, or MongoDB.
4. **Product Listing:** Create product listing pages where users can view products within a specific category or search for products using filters and keywords. Implement pagination if there is a large number of products to improve performance.
5. **Product Details:** Develop individual product detail pages that display comprehensive information about each product. Include images, descriptions, nutritional details, customer reviews, and related products to enhance the user experience.
6. **Inventory Management:** Implement inventory management to keep track of product availability. Ensure that the app reflects real-time stock levels and alerts users when a product is out of stock or low in quantity.
7. **Pricing and Offers:** Incorporate pricing management to handle different pricing scenarios, such as regular price, sale price, bulk discounts, or promotional offers. Include features like applying discount codes or loyalty rewards.

8. **Product Search:** Implement a search functionality to allow users to search for specific products or filter products based on criteria such as category, price range, or brand. Utilize indexing and search algorithms for efficient and accurate results.

9. **User Reviews and Ratings:** Enable users to leave reviews and ratings for products. Display average ratings and sort products based on user feedback to help users make informed purchase decisions.

10. **Product Recommendations:** Implement personalized product recommendations based on user preferences, purchase history, or browsing behavior. This can help improve user engagement and increase sales.

11. **Integration with Suppliers:** Establish connections with suppliers or vendors to receive updated product information, including pricing, availability, and new arrivals. This can be done through APIs or automated data feeds.

12. **Product Updates and Maintenance:** Regularly update the product catalog to reflect changes in availability, pricing, or new products. Maintain data accuracy and promptly address any discrepancies or errors reported by users.

13. **Multilingual Support:** Consider providing multilingual support to cater to users who prefer Vietnamese or other languages commonly spoken in Vietnam.

14. **Performance Optimization:** Optimize the product catalog management system for fast and efficient loading times, especially when handling a large number of products or high user traffic.

Shopping Cart and Checkout

To implement a shopping cart and checkout functionality in a food and grocery app in Vietnam-

1. Shopping Cart Management:

- Create a shopping cart object to store the selected products and their quantities.

- Allow users to add products to the cart from the product detail page or the product listing page.

- Provide options to update the quantities or remove products from the cart.

- Implement a persistent cart to retain the selected products even if the user leaves the app or logs out.

2. Cart Summary:

- Display a summary of the cart, including the list of products, quantities, and the total price.

- Update the summary dynamically as the user adds or removes products.

- Show additional details like discounts, taxes, or delivery fees if applicable.

3. User Authentication:

- Ensure that the user is authenticated before allowing them to add items to the cart or proceed to checkout.

- Implement a login or registration prompt if the user is not already logged in.

- Provide a guest checkout option for users who do not wish to create an account.

4. Delivery Options:

- Allow users to select their preferred delivery option, such as home delivery or in-store pickup.

- Provide a list of available delivery slots or pickup locations, if applicable.

- Calculate and display the delivery charges, if any.

5. Payment Options:

- Integrate with popular payment gateways in Vietnam, such as MoMo, VNPay, or , to facilitate secure online payments.
- Offer other payment methods like cash on delivery (COD) if desired.

6. Address Management:

- Allow users to manage their delivery addresses, including adding, editing, and deleting addresses.
- Provide an option for users to select a saved address or enter a new one during checkout.

7. Order Placement: - Implement an order placement process that creates an order object with all relevant information.

- Generate a unique order ID and provide confirmation to the user.
- Send order confirmation notifications via email, SMS, or push notifications.

8. Inventory Management:

- Ensure that the ordered products are reserved in the inventory during the checkout process.
- Update the inventory levels accordingly and handle scenarios where a product becomes out of stock.

9. Order History and Tracking:

- Maintain a history of user orders for reference and reordering.
- Provide order tracking functionality, including real-time status updates and estimated delivery times.

10. Error Handling:

- Implement proper error handling during the checkout process, such as notifying users if an item becomes out of stock or if there are issues with payment processing.

11. Compliance:

- Comply with Vietnamese regulations regarding online payments, data protection, and consumer rights.

12. Testing and Optimization:

- Thoroughly test the shopping cart and checkout process to ensure a smooth and error-free user experience.

- Optimize the performance to handle high traffic and ensure fast loading times.

CHAPTER 6

Order Management

To manage orders in a food and grocery app in Vietnam-

1. Order Processing:

- Receive and store order details, including customer information, selected products, quantities, delivery preferences, and payment information.
- Assign a unique order ID to each order for easy reference and tracking.
- Validate the order details for accuracy and completeness.

2. Order Status:

- Define various order status stages, such as "Pending," "Processing," "Out for Delivery," and "Delivered."
- Update the order status as it progresses through different stages.
- Provide real-time status updates to users, allowing them to track their orders.

3. Order Confirmation:

- Send an order confirmation to the customer via email, SMS, or push notification after successful placement of the order.
- Include order details, estimated delivery time, and contact information for any queries or changes.

4. Order Fulfillment:

- Notify the relevant store or warehouse staff about the new order for fulfillment.
- Prepare the products, ensuring accurate quantities and proper packaging.
- Integrate with inventory management systems to ensure that ordered products are available and ready for delivery.

5. Delivery Management: - Assign orders to delivery personnel or third-party logistics providers based on the delivery preferences and available resources.

- Share order details with the delivery personnel, including customer address, contact information, and any special instructions.

- Track and monitor the delivery progress in real-time, providing updates to both the customer and the delivery personnel.

6. Communication with Customers:

- Establish channels for customer support, allowing customers to reach out with any order-related inquiries or concerns.

- Provide customer support through phone, email, live chat, or social media platforms.

- Address customer queries promptly and professionally.

7. Returns and Refunds:

- Define a returns and refunds policy for orders that do not meet customer expectations or are damaged during delivery.

- Outline the process for customers to initiate returns or request refunds.

- Implement a system to handle return requests, process refunds, and update the order status accordingly.

8. Order History:

- Maintain a comprehensive order history for each customer, allowing them to view past orders and reorder previously purchased items.

- Include details such as order date, order ID, product details, payment information, and delivery status.

9. Analytics and Reporting:

- Collect and analyze order data to gain insights into customer preferences, popular products, peak ordering times, and other relevant metrics.
- Generate reports to assess sales performance, order fulfillment efficiency, and customer satisfaction.

10. Integration with Payment Gateways and Accounting Systems:

- Integrate the order management system with payment gateways to facilitate seamless payment processing.
- Connect with accounting systems to ensure accurate recording of transactions and financial data.

11. Compliance:

- Comply with Vietnamese regulations related to order management, including consumer protection laws, privacy regulations, and data protection requirements.

12. Continuous Improvement:

- Regularly review and optimize the order management process based on customer feedback and performance analysis.
- Identify areas of improvement to enhance efficiency, reduce errors, and provide better customer experiences.

Payment Integration To integrate payment functionality into a food and grocery app in Vietnam

1. **Research Payment Gateways:** Explore popular payment gateways in Vietnam that support online transactions and are widely used by customers and businesses. Some prominent options include MoMo, VNPay, ZaloPay, and NganLuong. Investigate their features, transaction fees, developer documentation, and integration requirements.

2. **Choose an API Integration Method:** Determine the integration method provided by the chosen payment gateway. Most payment gateways offer APIs (Application Programming Interfaces) that allow developers to integrate their services into the app. Identify the APIs that handle payment processing, callbacks, and other necessary functions.

3. **Developer Account Setup:** Create developer accounts with the selected payment gateways. This typically involves registering as a developer, providing necessary documentation, and agreeing to terms and conditions. Complete any verification or approval processes required by the payment gateway.

4. **Obtain API Keys and Credentials:** After setting up developer accounts, obtain the API keys, access tokens, or other necessary credentials from the payment gateway. These credentials will be used to authenticate API requests made from the app.

5. **Integration Implementation:**

- Integrate the payment gateway's SDK (Software Development Kit) or APIs into the app.

- Implement the necessary code to initiate payment transactions, capture payment details, and securely transmit them to the payment gateway.

- Handle response callbacks from the payment gateway to verify the payment status and update the order status in the app accordingly.

- Ensure that sensitive payment information, such as credit card details or user credentials, are handled securely by following industry best practices and compliance guidelines.

6. Test Transactions: - Set up a test environment provided by the payment gateway to perform test transactions without incurring actual charges.

- Perform comprehensive testing to verify that payments are processed correctly, order statuses are updated accurately, and error handling is implemented appropriately.

7. User Interface Enhancements:

- Design and implement user-friendly payment screens and flows within the app.

- Clearly communicate payment options, total amounts, and any additional charges or discounts to users during the checkout process.

- Provide appropriate feedback and confirmation to users after successful or failed payment transactions.

8. Security and Compliance:

- Ensure that the payment integration complies with Vietnamese regulations and industry standards for data protection, privacy, and secure transactions.

- Implement appropriate security measures, such as encryption and tokenization, to protect sensitive payment data.

9. Error Handling and Support:

- Implement error handling mechanisms to handle various scenarios, such as payment failures, connectivity issues, or user errors.

- Provide appropriate error messages and instructions for users to troubleshoot payment-related issues.

- Establish a support system to handle user inquiries or disputes related to payments.

10. Monitoring and Maintenance: - Monitor payment transactions and ensure that they are processed smoothly without any anomalies or delays.

CHAPTER 7

Search And Filtering

To implement search and filtering functionality in a food and grocery app in Vietnam

1. **Define Searchable Attributes:** Identify the key attributes of the products that users are likely to search for, such as product name, brand, category, ingredients, or dietary preferences. Consider the specific needs and preferences of your target audience in Vietnam.
2. **Implement Search Bar:** Design and add a search bar prominently within the app's user interface. Users should be able to enter keywords or phrases to initiate a search.
3. **Search Algorithm:** Develop a search algorithm that can efficiently match user queries with relevant products. Consider using techniques like keyword matching, fuzzy matching, or tokenization to improve search accuracy. You can also leverage search libraries or frameworks for more advanced search capabilities.
4. **Filter Options:** Provide filter options to allow users to narrow down their search results based on specific criteria. Common filter options include price range, brand, category, dietary preferences (e.g., vegetarian, gluten-free), and product attributes (e.g., organic, locally sourced).
5. **Sorting Options:** Enable users to sort the search results based on their preferences. For example, provide sorting options such as price (low to high or high to low), relevance, popularity, or customer ratings.
6. **User Interface:** Design user-friendly search and filter interfaces that are intuitive and easy to navigate. Clearly indicate the selected filters and sorting options to provide users with a transparent and interactive experience.
7. **Advanced Search Features:** Consider implementing advanced search features to enhance user experience. For example, autocomplete suggestions as users type in the

search bar, voice search capabilities, or saved search history to allow users to quickly repeat previous searches.

8. **Multilingual Support:** If your app supports multiple languages in Vietnam, ensure that the search and filtering functionality works accurately across different languages. Account for language-specific characters, search behavior, and user expectations.

9. **Performance Optimization:** Optimize the search and filtering functionality for fast response times and efficient handling of large datasets. Implement indexing, caching, and pagination techniques to improve performance, especially when dealing with extensive product catalogs.

10. **Continuous Improvement:** Regularly analyze user search behavior and feedback to identify areas for improvement. Refine the search algorithm, add or modify filters based on user preferences, and address any performance issues or limitations.

11. **A/B Testing:** Conduct A/B testing to evaluate the effectiveness of different search and filtering designs or algorithms. This will help you make data-driven decisions to optimize the user experience and improve search relevance.

12. **Integration with Product Catalog:** Ensure that the search and filtering functionality is seamlessly integrated with the product catalog management system. Any changes or updates to the catalog should reflect in search results and filters in real-time.

Reviews and Ratings

To incorporate reviews and ratings functionality into a food and grocery app in Vietnam

1. Review and Rating System:

- Develop a review and rating system that allows users to submit their feedback and rate products.

- Determine the criteria for ratings, such as overall satisfaction, quality, taste, packaging, or delivery experience.

- Assign a rating scale, typically ranging from 1 to 5 stars, to capture users' satisfaction levels.

2. User Authentication:

- Require users to be authenticated or logged in to submit reviews and ratings. This helps ensure the authenticity of the feedback and prevents misuse or spamming.

3. Review Submission:

- Provide a user-friendly interface for users to submit their reviews and ratings.
- Allow users to write a text review detailing their experience, highlighting positive aspects, and providing constructive feedback if any.

4. Rating Display:

- Display the overall rating of each product based on the cumulative ratings submitted by users.
- Show the average rating prominently on the product detail page to help users make informed purchasing decisions.

5. Review Display:

- Display user reviews alongside the product details to provide social proof and allow users to read others' experiences.
- Include relevant information such as the reviewer's username, date of the review, and the actual review text.

6. Sorting and Filtering: - Enable users to sort reviews based on different criteria, such as the most recent, highest rated, or most helpful reviews.

- Implement filtering options to allow users to view reviews based on specific attributes, such as ratings, keywords, or reviewer demographics.

7. Review Moderation:

- Implement a moderation system to review and approve user-generated content before it appears publicly.

- Moderate reviews to ensure they meet community guidelines, filter out inappropriate content, or address any potential spamming or fake reviews.

8. Response and Engagement:

- Provide the option for app administrators or sellers to respond to user reviews, acknowledging feedback or addressing concerns.

- Encourage user engagement by allowing users to upvote or mark reviews as helpful, fostering a sense of community within the app.

9. Rating Aggregation:

- Calculate and update the average ratings for each product based on the cumulative ratings submitted by users.

- Recalculate the average rating dynamically as new reviews and ratings are added or updated.

10. Review Reporting:

- Implement a reporting mechanism for users to flag reviews that violate community guidelines, contain inappropriate content, or are suspected to be fraudulent.

- Review reported reviews and take appropriate actions, such as removing or investigating flagged content.

11. Review Notifications:

- Notify users when their reviews are published or when someone responds to their reviews to encourage user engagement and foster a sense of participation.

12. Analytics and Insights:

- Collect and analyze review data to gain insights into customer preferences, identify popular products, and track overall customer satisfaction.

- Use analytics to identify areas for improvement and make data-driven decisions regarding product selection, quality, or customer service.

13. Continuous Improvement:

- Continuously monitor and evaluate user reviews and ratings to identify patterns, recurring issues, or areas for improvement.

- Regularly update the app based on user feedback, addressing concerns and enhancing the overall customer experience.

Localization

Localization is essential for adapting a food and grocery app to the specific needs and preferences of users in Vietnam.

1. Language Translation:

- Translate the entire app interface, including menus, buttons, labels, and notifications, into Vietnamese. Ensure the translations are accurate, culturally appropriate, and convey the intended meaning.

- Use professional translators or localization services familiar with the Vietnamese language and culture to ensure high-quality translations.

- Consider supporting multiple languages if Vietnam has a diverse population with significant non-Vietnamese speaking communities.

2. Currency and Payment:

- Display prices and currency in Vietnamese Dong (VND), the official currency of Vietnam.

- Integrate with local payment gateways that support popular payment methods used in Vietnam, such as credit/debit cards, e-wallets (e.g., MoMo, ZaloPay), or bank transfers.

3. Date and Time Formats:

- Format dates and times according to the Vietnamese format, which typically follows the format: day/month/year (dd/mm/yyyy).

- Display time using the 24-hour clock system instead of the 12-hour AM/PM format.

4. Units of Measurement:

- Present measurements, such as weight, volume, and distance, in units commonly used in Vietnam. For example, kilograms (kg), liters (L), and kilometers (km).

5. Address Format:

- Adapt address fields to align with the Vietnamese address structure, including specific details such as building numbers, street names, districts, and provinces.

6. Localized Content:

- Provide localized content relevant to the Vietnamese market, such as product descriptions, promotional offers, and marketing messages tailored to the local audience.

- Consider integrating with local Vietnamese food and grocery databases to ensure accurate and comprehensive product information.

7. Local Cuisine and Dietary Preferences:- Highlight local Vietnamese cuisine, traditional dishes, and popular ingredients within the app.

- Include filters or categories for specific dietary preferences common in Vietnam, such as vegetarian, vegan, or Halal options.

8. Cultural Considerations:

- Respect cultural sensitivities and customs when designing the app. Be aware of local traditions, festivals, and taboos to avoid any unintentional offenses or misunderstandings.

9. Local Partnerships and Integration:

- Collaborate with local suppliers, restaurants, and grocery stores to provide accurate and up-to-date information about products, availability, and delivery options.

- Integrate with local logistics and delivery services to ensure efficient and reliable delivery in Vietnam.

10. Testing and User Feedback:

- Conduct thorough testing of the localized app to identify any issues with translation, layout, or functionality.

- Collect feedback from Vietnamese users to understand their specific requirements, identify areas for improvement, and address any localization-related challenges.

CHAPTER 8

Timeline and Milestones

When developing a food store concept using the Spryker framework, the timeline and milestones can be adjusted based on the specific requirements and scope of the project. Here's a general timeline with key milestones:

Project Initiation:

Define project objectives, goals, and requirements for the food store concept

Gather the necessary team members and resources.

Conduct market research and competitor analysis.

Design and Planning: Create wireframes and design prototypes for the food store's user interface Plan the database schema and system architecture. Define the features and functionalities of the food store concept.

Product Catalog Development: Set up the product catalog structure and taxonom, Import or create product data, including images, descriptions, and attributes. Implement category navigation and search functionality.

Shopping Cart and Checkout:

Develop the shopping cart functionality, allowing users to add products, adjust quantities, and remove items Implement a secure and streamlined checkout process, including address input, delivery options, and payment integration.

Technical Risks: Risk: Integration complexities with external systems, such as payment gateways or inventory management systems.

Mitigation: Conduct thorough research and analysis of the integration requirements. Allocate sufficient time for integration testing. Consider using established integration plugins or modules provided by Spryker or third-party vendors

Data Security Risks:

Risk: Potential data breaches, unauthorized access to customer information, or payment fraud.

Mitigation: Implement robust security measures, including encryption for sensitive data, secure payment gateways, and user authentication protocols. Regularly update and patch security vulnerabilities. Conduct security audits and penetration testing. Comply with relevant data protection regulations.

Scalability Risks:

Risk: Inadequate system scalability to handle increased traffic or a growing product catalog.

Mitigation: Design the system with scalability in mind from the beginning. Optimize database queries, implement caching mechanisms, and leverage cloud infrastructure for scalability. Perform load testing to identify and address potential bottlenecks.

User Experience Risks:

Risk: Poor user experience leading to low customer engagement or high bounce rates.

Mitigation: Conduct user testing and gather feedback throughout the development process. Iterate on the user interface design based on user feedback. Optimize page load times and ensure a seamless browsing and checkout experience. Perform usability testing to identify and address any usability issue

Change in Requirements:

Risk: Stakeholders requesting significant changes or additions to the food store concept during the development process.

Mitigation: Clearly define and document project requirements from the beginning. Establish a change management process to assess and prioritize requested changes. Communicate effectively with stakeholders to manage expectations. Plan for iterative development cycles to accommodate changes.

Supplier and Inventory Risks:

Risk: Issues with supplier integration or inaccurate inventory data leading to order fulfillment problems.

Mitigation: Thoroughly test and validate supplier integration before deployment. Implement inventory management features to track stock levels accurately. Set up automated notifications for low stock items. Establish communication channels with suppliers for timely updates and issue resolution

Performance Risks:

Risk: Slow page load times or system performance issues impacting user experience.

Mitigation: Conduct performance testing and optimization throughout the development process. Optimize database queries, implement caching mechanisms, and leverage content delivery networks (CDNs) for static assets. Monitor system performance in production and optimize as needed.

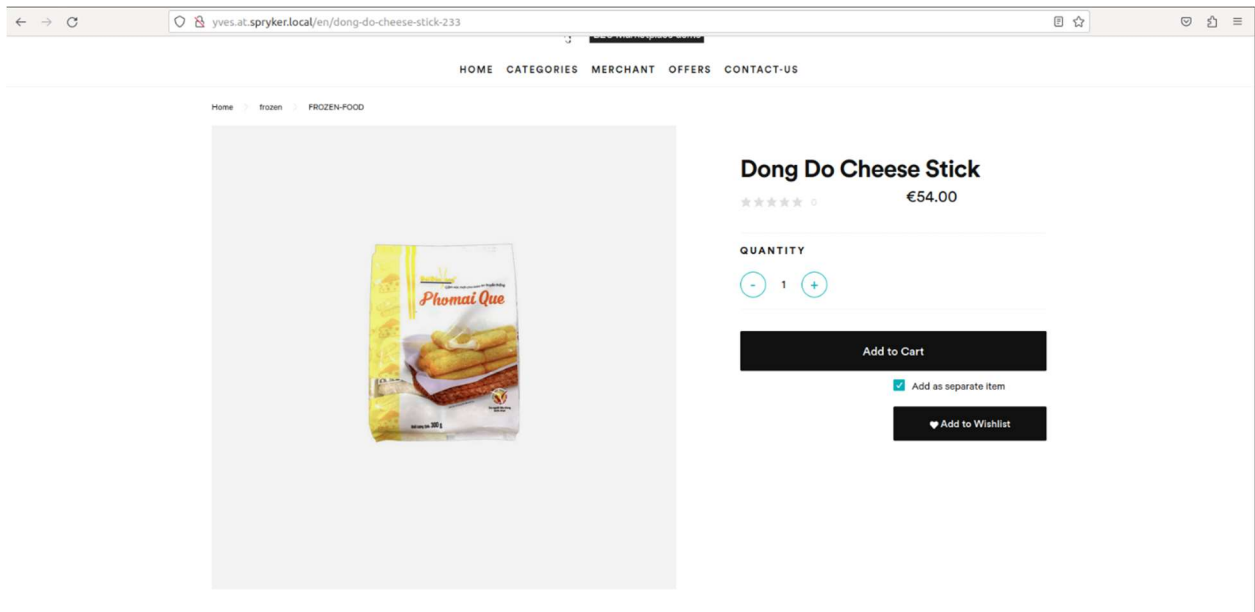
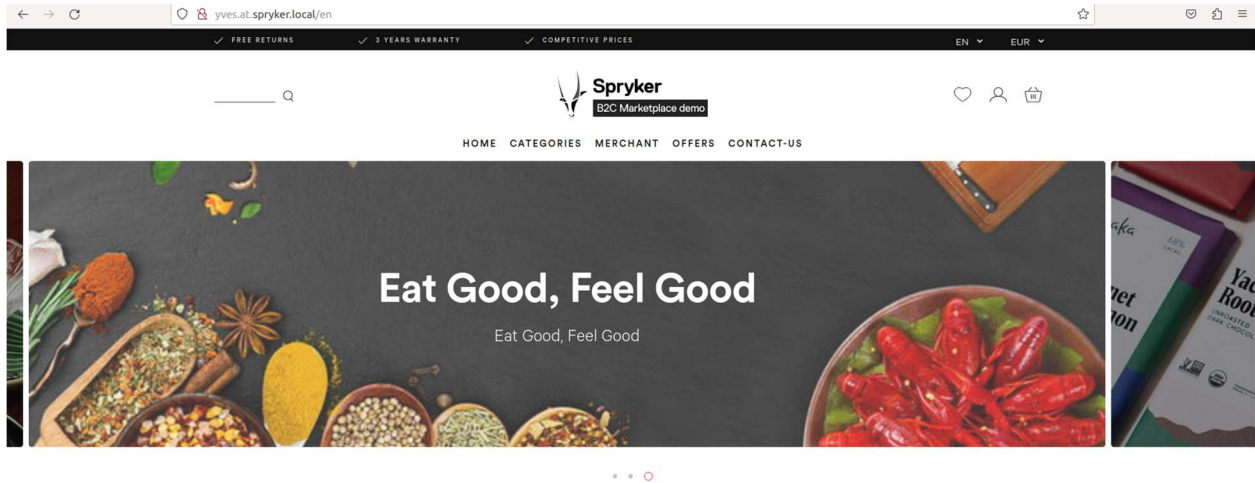
Training and Support Risks:

Risk: Inadequate user training or lack of support resources for the food store concept.

Mitigation: Develop comprehensive user documentation and provide training resources for store administrators and staff. Establish a support system for addressing customer inquiries or technical issues. Monitor and respond promptly to customer feedback and support requests. By identifying potential risks and implementing appropriate mitigation strategies, the development team can minimize the impact of risks and ensure the successful implementation of the food store concept using the Spryker framework.

CHAPTER 9

Screenshots





✓ FREE RETURNS ✓ 3 YEARS WARRANTY ✓ COMPETITIVE PRICES EN EUR

_____ Q **Spryker** B2C Marketplace demo




HOME CATEGORIES MERCHANT OFFERS CO



In Your Cart

2 Item

	Dong Do Cheese Stick	€54.00
Quantity: - 1 +	Remove	
	Dong Do Cheese Stick	€54.00
Quantity: - 1 +	Remove	

Cart

	Dong Do Cheese Stick	€54.00
Quantity: 1	Remove	
	Dong Do Cheese Stick	€54.00
Quantity: 1	Remove	

DISCOUNTS - €10.80
TOTAL €97.20

Discounts	
10% off minimum order	- €10.80
GRAND TOTAL	€97.20

← → ↻ yves.at.spryker.local/en/checkout/summary 90% ☆ ⌵ ⌶ ⌵

Payment

Credit card VISA Card Type: Visa Card Number: **** * Name on the Card: sameer Expiry Date: 01/2024 Edit:	Billing Address Mr sameer pahuja onetric globals 420 420 kankrolli 313001 bangal, United Kingdom 7725990065 Edit:
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Complete checkout

+

Subtotal	€108.00
Shipment costs (total)	€3.90
DHL - Standard	€3.90
Discounts	
10% off minimum order	- €10.80
Free standard delivery	- €3.90
Tax	€15.52
GRAND TOTAL	€97.20

I accept the terms and conditions

