

• Process Model:

Agile methodology with iterative development to incorporate user feedback and adapt to changes efficiently.

Why Agile?

it offers flexibility to adapt to changing requirements and focuses on iterative development, delivering functional increments like login or checkout early. It encourages collaboration within your team and with stakeholders, ensures user-centered design, mitigates risks by testing in small cycles, and accelerates value delivery, keeping everyone engaged.

• Functional Requirements

- I. **User-management:** Log-in, profile management (password changes).
- II. **Product catalog:** add/update/delete/search, stock(in/out).
- III. **Shopping cart:** add/edit product selection, cancel cart selection.
- IV. **Checkout:** payment information, delivery address, coupon codes, payment method, eta delivery.
- V. **Order management:** order history, order status, notifications.

• Non-Functional Requirements

- I. **Performance:** Ensure loading times are less than 3 seconds.
- II. **Scalability:** handles at least 1,000,000 users and 10,000 concurrent transactions.
- III. **Security:** Protect against data leaks and secure user payment information.
- IV. **Availability:** Guarantee 99.9% uptime.
- V. **Usability:** Provide a user-friendly and interactive interface.
- VI. **Reliability:** Ensure the system can recover from failures within 5 minutes to minimize downtime.
- VII. **Compatibility:** Support all modern web browsers (e.g., Chrome, Firefox, Safari) and mobile platforms (iOS and Android).
- VIII. **Maintainability:** Facilitate updates with modular code and ensure changes can be deployed within 2 hours.
- IX. **Localization:** Provide multi-language support for global users, including currency and regional settings.
- X. **Compliance:** Adhere to GDPR, PCI DSS, and other international standards for data and payment security.

• Domain Requirements

I. **Export Compliance:**

- Include HS codes and customs documentation for gym equipment.
- Validate international shipping regulations for specific regions.

II. **Taxation:**

- Calculate taxes based on export laws.
- Handle multi-currency and regional tax compliance.

III. Logistics Integration:

- Support integration with third-party shipping providers (e.g., DHL, FedEx).
- Provide live tracking for international deliveries.

• Stakeholders

- I. **End Users:** Customers who browse, purchase, and interact with the platform.
- II. **Admin Users:** Responsible for managing inventory, orders, and user accounts.
- III. **Business Owners:** Set strategic goals and ensure profitability.
- IV. **Logistics Partners:** Handle shipping and delivery.
- V. **Technical Team:** Developers, QA testers, and IT support.

• Use Cases Table

Section	Description
Name	Add Product to Shopping Cart
Actors	End User
Goals	The user wants to add a product to their shopping cart for purchasing later.
Preconditions	<ul style="list-style-type: none">- The user is logged into the system.- The product exists and is in stock.
Trigger	The user selects a product to add to their shopping cart.
Scenario	<ol style="list-style-type: none">1. The user navigates to the product catalog.2. The user selects a product they want to add.3. The system checks product availability in stock.4. If available, the system adds the product to the shopping cart.5. The system updates the shopping cart summary.6. The system displays confirmation to the user that the

	product has been added successfully.
Exception	<ul style="list-style-type: none"> - If the product is out of stock, the system displays an "Out of Stock" message. - If a network failure occurs, the system informs the user and prompts to retry.
Priority	High – Frequently used by end users during the purchasing process.

Section	Description
Name	Log-in
Actors	Customer, Administrator
Goals	Allow user to securely access his account
Preconditions	User must have an already existing account
Trigger	User enters his credentials and submit the log-in form
Scenario	1-The user click log in 2-The system display login page and ask for username and password 3-The user enters name and password.

	4-The system validates Username and Password 5-Allow access to System
Exception	Invalid username (Prints Error), Invalid Password (Prints error), Invalid Password 3 times in a row (Add Cooldown)
Priority	High (must be implemented)

Section	Description
Name	Product catalog in/out of stock
Actors	Edited by admin, viewed by customer
Goals	Display product availability for customer and inventory status for owner
Preconditions	Product must be registered in the system
Trigger	User hovers or clicks on the product
Scenario (Admin)	1-Admin logs into admin portal 2-Admin updates product stock information 3-System updates in real time
Scenario (user)	1-Customer navigates to the product 2-System displays stock status
Exception	Stock data not updated: if the system fails to update the stock

	data the previews status is shown with an error message for the admins and customers
Priority	High, must be implemented for both user friendly experience and inventory management

Section	Description
Name	Order Management
Actors	Customer, Admin of the system, Notification service
Goals	Track order history, check order status, and receive notifications.
Preconditions	User must be logged in. An order must have been placed by the user.
Trigger	User initiates a request to view order history, status, or receive notifications.
Scenario	<ol style="list-style-type: none"> 1. User selects "Order History" from the profile menu 2. System displays all past orders 3. User clicks on a specific order to view its status 4. system fetches and displays the current order status (e.g., pending, shipped) 5. System sends notifications for any updates or changes

Exception	If no orders are available, system displays "No orders found".
Priority	Frequent use by customers after purchasing a product (high priority).

Section	Description
Name	Payment & check-out
Actors	Customer, Payment Gateway, System
Goals	ensure a smooth, secure, and efficient transaction process for the user.
Preconditions	<ul style="list-style-type: none"> - Customer has items in cart. - Provided shipping address.
Trigger	Process where a customer provides a payment's details & confirms order.
Scenario	1- Review cart & click proceed to "Check out" (Customer) 2- Add payment method [Credit-cash on delivery] (Customer) 3- Enter payment details [Card NO-CVV] (Customer) 4- Validate payment details (System) 5- Process payment with Bank & confirm to system (Payment Gateway) 6- Display to customer confirmation message (System)

Exception	<ul style="list-style-type: none">- Invalid payment details: System shows error message.- Payment gateway timeout: System shows error message.- Insufficient funds: System tells customer to select another method.
Priority	High – it directly impacts order completion, user satisfaction, and business revenue. Without a seamless check-out process, users are likely to abandon their carts, leading to lost sales.

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