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Express Documentation

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Introduction

Nana Express is a cutting-edge logistics and courier service dedicated to providing fast, reliable, and seamless delivery solutions to individuals and businesses across various regions. Our mission is to simplify the shipping process, ensuring that every package reaches its destination on time and in perfect condition. Whether you're sending a small parcel or managing bulk shipments, Nana Express is equipped with the technology and expertise to handle your logistics needs efficiently.

At Nana Express, we prioritize customer satisfaction by offering a range of flexible shipping options. From express deliveries that need to be completed within tight deadlines to more cost-effective standard shipping, our solutions cater to diverse needs and budgets. We ensure transparency and trust by providing real-time tracking, allowing customers to monitor their shipments from dispatch to delivery.

Our platform is user-friendly, featuring easy-to-use interfaces that allow customers to book shipments, track their parcels, and manage their shipping history effortlessly. With just a few clicks, customers can initiate bookings, view cost estimates, and receive updates on their shipment's progress.

The backbone of our services lies in advanced logistics technologies and a dedicated team of professionals committed to excellence. Nana Express offers a robust infrastructure capable of handling both local deliveries. We guarantee a high standard of care for every shipment.

As a trusted partner for businesses, we offer comprehensive e-commerce and fulfillment solutions. Our platform integrates seamlessly with online stores, allowing businesses to focus on growth while we handle the logistics. From warehousing and inventory management to last-mile delivery, Nana Express provides end-to-end support for business operations.

At Nana Express, we believe in innovation, efficiency, and reliability. We are continually expanding our services to meet the evolving needs of the logistics industry. By leveraging modern technology, strategic partnerships, and a passion for service, Nana Express is poised to be a leader in the delivery and logistics space, ensuring that every shipment arrives safely and on time.

Functional Requirements

The functional requirements for **Nana Express** outline the key features and functionalities that the system must provide to ensure efficient and seamless logistics operations. These requirements will guide the development of the platform to meet both user needs and business goals.

1. User Registration and Authentication

Description: The system must allow users to create accounts, log in securely, and manage their profiles.

Functionalities:

- User registration with email and password.
- Login and logout functionality.
- Password recovery and reset features.
- Profile management (update personal details, change password, etc.).

2. Shipment Booking

Description: Users must be able to book a shipment by entering details such as destination, package information, and shipping method.

Functionalities:

- Form for entering shipment details: package size, weight, destination, and service type (e.g., express or standard delivery).
- Option to select shipment type (documents, parcels, etc.).
- Calculate cost based on package details and destination.
- Option to schedule a pickup or choose a drop-off point.

3. Shipment Tracking

Description: Users must be able to track the status of their shipments using a unique tracking number.

Functionalities:

- Enter a tracking number to view the current status and location of the shipment.
- Display detailed shipment information including the current status (e.g., "In Transit", "Delivered") and current location.
- Show estimated delivery time and any shipment updates.
- Provide shipment history for users to see previous updates on the status.

4. Admin Dashboard

Description: The system must provide an admin interface to manage shipments, users, and overall platform operations.

Functionalities:

- View all active, pending, and completed shipments.
- Update shipment statuses (e.g., "Picked Up", "In Transit", "Delivered").
- Manage user accounts (view, edit, suspend).
- Generate reports on shipping volumes, revenue, and delivery times.
- Provide notifications to users regarding shipment status changes.

5. Payment Processing

Description: Users must be able to make secure payments for their shipments via the platform.

Functionalities:

- Integration with payment gateways (e.g., Chapa, Stripe) for secure transactions.
- Display payment confirmation upon successful transaction.
- Provide transaction history for users to review past payments.

6. Notifications and Alerts

Description: Users must receive notifications and alerts regarding their shipments.

Functionalities:

- Send email or SMS notifications when the status of a shipment changes (e.g., "Out for Delivery", or "Delivered").

7. Cost Estimation

Description: The system must provide an estimate of shipping costs based on the weight, dimensions, and destination of the package.

Functionalities:

- Allow users to input package details and destination to get an estimated cost.
- Display available shipping options (e.g., express, standard) with respective pricing.
- Enable users to adjust shipping options and see real-time updates on the cost.

8. User Dashboard

Description: Users must have access to a personal dashboard to manage their shipments and account information.

Functionalities:

- View a summary of all active and past shipments.
- Track shipment statuses and receive updates.
- Access payment history and download receipts.
- Update personal information, address details, and shipping preferences.

Non-Functional Requirements

Non-functional requirements specify the criteria that can be used to judge the operation of a system, rather than specific behaviors. These requirements address various aspects such as performance, security, usability, and scalability. Below are the non-functional requirements for Nana Express:

1. Performance

- Response Time: The system must respond to user requests (such as booking shipments and tracking status) within 2 seconds under normal operating conditions.
- Throughput: The platform should support a minimum of 1000 concurrent users without performance degradation.
- Loading Time: The website should load within 3 seconds for optimal user experience.

2. Scalability

- Horizontal Scalability: The system must be designed to handle increased loads by adding more servers or instances.
- Vertical Scalability: The platform should allow for upgrading existing hardware (CPU, RAM) to manage increased traffic and data processing needs.

3. Availability

- Uptime: The system should maintain an uptime of 99.9% to ensure reliability and availability for users at all times.
- Maintenance: Scheduled maintenance should be communicated to users in advance, and any downtime should be minimized to off-peak hours.

4. Security

- Data Protection: User data must be encrypted both in transit (using HTTPS) and at rest to protect sensitive information.
- Authentication: The system must implement secure user authentication mechanisms, including strong password policies and account lockout features after multiple failed login attempts.
- Access Control: Role-based access control must be enforced to restrict access to sensitive functionalities (e.g., admin dashboard).

5. Usability

- User Interface: The website must have an intuitive and user-friendly interface, designed to facilitate easy navigation and usability for all users, regardless of technical skill.
- Accessibility: The platform should adhere to accessibility standards (e.g., WCAG) to ensure that users with disabilities can use the service effectively.
- Documentation: Comprehensive user guides and FAQs must be provided to assist users in navigating the platform and utilizing its features.

6. Compatibility

- Cross-Browser Compatibility: The website must function correctly across major web browsers (e.g., Chrome, Firefox, Safari, Edge).
- Mobile Responsiveness: The platform should be fully responsive and accessible on various devices, including smartphones and tablets.

7. Maintainability

- Code Quality: The system should follow best coding practices, including clear documentation and comments, to ensure maintainability and ease of future updates.
- Modular Design: The architecture must be modular to allow for easy addition or modification of features without affecting the overall system.

System Model

Scenario 1: Create Shipment

Participating Actors: Customer

Entry Condition: The customer must have an active account and be logged into the system.

Flow of Events:

1. The customer navigates to the "Create Shipment" page.
2. The shipment booking form appears with fields for package details (weight, dimensions, destination, and service type).
3. The customer fills in the required fields and clicks "Submit."
4. The system validates the input data.
5. If the data is valid, the system calculates the shipping cost and displays it to the customer.
6. The customer confirms the shipment and the system creates a shipment record.

Exceptional Flow: If the customer enters invalid data (e.g., negative weight or missing required fields), the system displays an error message indicating the specific issues that need to be corrected.

Scenario 2: Track Shipment

Participating Actors: Customer

Entry Condition: The customer must have an active account or the tracking number.

Flow of Events:

1. The customer navigates to the "Track Shipment" page.
2. The tracking input form appears, asking for the tracking number.
3. The customer enters the tracking number and clicks "Track."
4. The system retrieves the shipment information based on the provided tracking number.
5. The system displays the current status and location of the shipment to the customer.

Exceptional Flow: If the customer enters an invalid tracking number (e.g., not found in the system), the system displays an error message stating that the tracking number is not valid or does not exist.

Scenario 3: User Registration
Participating Actors: Customer
Entry Condition: The customer must have an internet connection and access to the system.

Flow of Events:

1. The customer clicks on "Create Account."
2. The registration form appears with fields for username, email, and password.
3. The customer fills in the form and clicks "Submit."
4. The system validates the inputs.
5. The system creates an account and sends a verification email.

Exceptional Flow: If the customer enters invalid data (e.g., incorrect email format), the system displays an error message indicating the problem and prompting for correction.

Scenario 4: User Login
Participating Actors: Customer
Entry Condition: The customer must have an active account.

Flow of Events:

1. The customer navigates to the "Login" page.
2. The login form appears with fields for email and password.
3. The customer enters their credentials and clicks "Login."
4. The system verifies the credentials.
5. If the credentials are valid, the system grants access to the customer dashboard.
6. The system displays a welcome message.

Exceptional Flow: If the customer enters invalid credentials (e.g., incorrect password), the system displays an error message indicating that the login attempt was unsuccessful.

Scenario 5: Make Payment

Participating Actors: Customer

Entry Condition: The customer must have an active shipment and be logged into the system.

Flow of Events:

1. The customer navigates to the "Payment" page for their shipment.
2. The payment form appears with fields for card information and billing details.

3. The customer fills in the payment information and clicks "Pay."
4. The system processes the payment through the integrated payment gateway.
5. If the payment is successful, the system updates the shipment status and sends a confirmation email to the customer.

Exceptional Flow: If the payment fails (e.g., insufficient funds or incorrect card details), the system displays an error message indicating the failure reason and prompts the customer to retry.

Use Case Model

Use Case Diagram