

Rental Marketplace Platform - Technical Documentation v1.0

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1. System Overview

The Rental Marketplace Platform is designed to connect rental businesses with customers in Pakistan, providing a centralized platform for renting various items including dresses, cars, and party equipment.

Key Features

- Multi-vendor rental marketplace**
- Real-time availability tracking**
- Secure payment processing with deposit handling**
- Delivery zone management**
- Rental duration management**

2. Architecture Components

2.1 Frontend (Next.js)

- Server-rendered React application
- Responsive design using TailwindCSS
- Real-time availability calendar
- Rental cart management
- User authentication interface

2.2 Sanity CMS

- Product catalog management
- Vendor profiles and verification
- Rental inventory tracking
- Booking history
- User data management

2.3 Third-Party Integrations

- Payment processing (Stripe/PayPal)
- SMS notifications
- Email service (SendGrid)
- Shipment tracking

3. Data Flow & Workflows

3.1 User Registration

```json

```
{  
  "userSchema": {  
    "userId": "String",
```

```
"name": "String",
"email": "String",
"phone": "String",
"verificationStatus": "Boolean",
"documents": ["Array"]
}
}
...

```

3.2 Rental Product Schema

```
```json
{
 "productSchema": {
 "productId": "String",
 "name": "String",
 "category": "String",
 "dailyRate": "Number",
 "securityDeposit": "Number",
 "availability": "Boolean",
 "rentalDurations": ["Array"],
 "vendor": "Reference"
 }
}
...

```

### ### 4. API Specifications

#### #### 4.1 Product Endpoints

- GET /products - List available rentals
- POST /rentals - Create rental booking
- GET /rental-status - Track rental status

#### #### 4.2 User Endpoints

- POST /register - User registration
- POST /login - User authentication
- GET /user/rentals - User rental history

### ### 5. Payment & Delivery Systems

#### #### 5.1 Payment Structure

```json

```
{  
  "paymentSchema": {  
    "paymentId": "String",  
    "orderId": "String",  
    "amount": "Number",  
    "securityDeposit": "Number",  
    "paymentMethod": "String",  
    "paymentDate": "Date",  
    "sellerDetails": "Object",  
    "buyerDetails": "Object"  
  }  
}
```

```
}
```

```

## #### 5.2 Delivery Zones

```
```json
```

```
{  
  "zoneSchema": {  
    "zoneId": "String",  
    "zoneName": "String",  
    "areas": ["Array"],  
    "deliveryFee": "Number",  
    "pickupPoints": ["Array"]  
  }  
}  
```
```

## ### 6. Implementation Guide

### #### 6.1 Setup Requirements

- Node.js 18+
- Sanity CLI
- Next.js
- Payment Gateway API keys
- SendGrid API configuration

### #### 6.2 Development Steps

1. Frontend setup
2. CMS configuration
3. API integration

**4. Payment system setup**

**5. Delivery system implementation**

#### **#### 6.3 Security Considerations**

- User data encryption**
- Payment information security**
- Deposit handling**
- Vendor verification**
- Product insurance**

#### **### 7. Future Enhancements**

- AI-powered pricing recommendations**
- Automated damage assessment**
- Integrated insurance system**
- Mobile application**
- Rating and review system**

#### **### 8. Contact Information**

**For technical support and inquiries:**

- Technical Support: [support@rentalplatform.pk](mailto:support@rentalplatform.pk)**
- Developer Portal: [dev.rentalplatform.pk](https://dev.rentalplatform.pk)**
- API Documentation: [api.rentalplatform.pk](https://api.rentalplatform.pk)**

# Workflow Diagram

