# ****Rental Management System - Product Requirements Document****

## ****1. Executive Summary****

Web-based platform enabling Kenyan landlords to manage properties digitally.  
**Key Objectives**:

Automate rent collection (M-Pesa focus)

Streamline tenant-property owner communications

Provide financial tracking/reporting

Reduce dependency on property agencies

**Target Users**:

Landlords (Primary)

Tenants (Secondary)

Property Secretaries

Admin Users

## ****2. Market Opportunity****

**Kenyan Rental Landscape**

80% Nairobi residents rent

$1.2B+ annual rental market

**Gaps in Existing Solutions**:

Poor service charge transparency

Limited mobile-first experiences

High agency fees (5-12% of rent)

### ****Competitive Analysis****

| **Feature** | **Our System** | **Bomahut** | **EazzyRent** |
| --- | --- | --- | --- |
| M-Pesa Integration | Full | Partial | None |
| Tenant Screening | API Ready | Manual | Basic |
| Custom Branding | Yes | No | Paid Add-on |
| Maintenance Workflow | Automated | Email | SMS |

## ****3. Core Features****

### ****3.1 Subscription Packages****

| **Tier** | **Price (KES)** | **Properties** | **Key Features** |
| --- | --- | --- | --- |
| **Mtaa** | 500-1,000 | ≤10 | Basic reporting, 1 user |
| **Chaguo** | 2,000-3,500 | 11-50 | + Maintenance tracking, 3 users |
| **Premium** | 4,000-6,000 | 51-100 | + API access, custom reports |
| **Enterprise** | Custom | 100+ | White-label, dedicated support |

**Payment Options**:

Phase 1: M-Pesa (Simulated → Live via STK Push)

Phase 2: Stripe/PayPal/Card

### ****3.2 Landlord Portal****

**Property Management**:

Add properties/units with photos

Set individual rents + utility rates

Track vacancies (calendar view)

**Financials**:  
*// Rent calculation logic*public function calculateRentDue(

float $baseRent,

float $utilities,

int $lateDays): float {

return $baseRent + $utilities + ($lateDays \* $baseRent \* 0.05);}

**Maintenance**:

Tenant-reported issues → Vendor dispatch

Budget tracking with photo evidence

**Analytics**:

Real-time dashboards (Occupancy, Cash Flow)

Exportable reports (PDF/Excel)

**3.3 Tenant Portal**

**Key Flows**:

Rent Payment → M-Pesa (Simulated)

Repair Requests → Photo upload + status tracking

Vacate Notice → 30-day counter

Document Access → Lease agreements + receipts

**Mobile Optimization**:

USSD fallback for feature phones

SMS notifications

### ****3.4 Admin System****

**RBAC Implementation**:  
php artisan permission:create-role landlord

php artisan permission:create-role secretary

php artisan permission:create-role tenant

**Audit Trails**:

Track all financial transactions

Login attempts logging

## ****4. Technical Architecture****

### ****4.1 Stack Components****

| **Layer** | **Technology** | **Version** |
| --- | --- | --- |
| Backend | Laravel | 12.x |
| Frontend | Livewire Volt + Alpine | 3.x |
| Styling | TailwindCSS | 3.3.x |
| Database | MySQL (Prod) | 8.0 |
| Security | Spatie Permissions | 6.x |
| Animations | GSAP | 3.12.x |

### ****4.2 Key Integrations****

**M-Pesa API**:

STK Push for payments

C2B transaction confirmation

**SMS Gateways**:

Africa's Talking (Primary)

Twilio (Fallback)

**Third-Party Services**:

Google Maps → Property locations

DocuSign → Lease agreements

Xero/QuickBooks → Accounting

**4.3 Security Measures**

**Data Protection**:

AES-256 encryption (database)

TLS 1.3+ (in transit)

**Access Control**

Session timeout: 15m (landlords)

2FA via TOTP (Google Authenticator)

**Compliance**:

GDPR (EU tenants)

Kenya Data Protection Act

## ****5. Implementation Roadmap****

**Phase 1: Core System (8 Weeks)**

Auth System (2w)

Property/Tenant CRUD (2w)

1. Pesa Simulation (1w)

Basic Reporting (1w)

Testing/QA (2w)

**Phase 2: Advanced Features (6 Weeks)**

Vendor API Integrations

Mobile App (React Native)

Swahili Localization

Load Testing (1k+ users)

## ****6. Deployment Strategy****

### ****6.1 Environments****

| **Environment** | **Database** | **URL** | **Purpose** |
| --- | --- | --- | --- |
| Local | SQLite | [http://localhost:8000](http://localhost:8000/" \t "/Users/app/Desktop/PERSONAL DOCUMENTS/x/_blank) | Development |
| Staging | MySQL | stage.kenrent.co.ke | Client Reviews |
| Production | MySQL | app.kenrent.co.ke | Live Users |

### ****6.2 Server Requirements****

Ubuntu 22.04 LTS

PHP 8.2+ with Extensions:

bash

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sudo apt install php8.2 php8.2-{mbstring,curl,xml,mysql}

Nginx Configuration:

nginx

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location / {

try\_files $uri $uri/ /index.php?$query\_string;

add\_header X-Content-Type-Options "nosniff";}

### ****6.3 CI/CD Pipeline****

bash

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*# Deployment Script*composer install --optimize-autoloader --no-dev

php artisan migrate --force

php artisan config:cache

php artisan route:cache

php artisan view:cache

## ****7. Testing & Validation****

### ****7.1 Test Cases****

| **Module** | **Test Type** | **Tools Used** |
| --- | --- | --- |
| Payment Gateway | E2E | PestPHP + Mockoon |
| Load Handling | Performance | k6 (1k+ VUs) |
| Mobile Views | Responsiveness | BrowserStack |

### ****7.2 Success Metrics****

95% on-time rent collection

30% faster maintenance resolution

4/5 User Satisfaction Score

99.9% system uptime

## ****8. Appendices****

### ****8.1 Entity Relationship Diagram****

### ****8.2 API Endpoints****

| **Endpoint** | **Method** | **Description** |
| --- | --- | --- |
| /api/rent/pay | POST | Initiate M-Pesa payment |
| /api/maintenance | GET | List open repair tickets |
| /api/reports | GET | Generate financial PDF |