

BizTrackr - Grand Development Log

This document serves as a comprehensive log of the development phases, challenges faced, and solutions implemented during the creation of BizTrackr.

■ SaaS Platform Achievements

Status: ■ CORE FEATURES IMPLEMENTED

Completed Features

1. ■ **Role-Based Access Control (RBAC)**
 - Admin, Manager, and Cashier roles.
 - Secured API endpoints and frontend routes.
 - Verified with automated tests.
2. ■ **Inventory Management**
 - Category management (Create, Read, List).
 - Product tracking with stock levels.
3. ■ **Sales & POS**
 - Point of Sale interface.
 - PDF Receipt generation with QR codes.
4. ■ **Notifications System**
 - Real-time alerts for system events.
 - Dedicated notifications management page.

■ Challenges Faced & Cleared

1. Role-Based Access Control (RBAC) Implementation

Challenge: Restricting access to sensitive areas (like User Management) based on user roles (Admin, Manager, Cashier) caused backend crashes due to circular imports or missing dependencies.

Resolution:

- Fixed the `NameError` in `users.py` by correctly importing `require_manager_or_above`.
- Implemented frontend redirects in `users.tsx` for unauthorized users.
- Verified with comprehensive test scripts.

2. Inventory Categories Fix

Challenge: The "Manage Categories" feature was non-functional; adding new categories failed silently.

Resolution:

- Diagnosed as a side-effect of the RBAC import error crashing the server.
- Fixed the import, restarted the server, and verified with `quick_test_categories.py`.

3. PDF Receipt Generation

Challenge: Generating PDF receipts failed due to key mismatches (`product_id` vs `item_id`) in the API payload.

Resolution:

- Updated `sales_service.py` and test scripts to use consistent keys.
- Successfully generated and saved PDF receipts locally.

■ Progress Report: Recent Enhancements

Notifications System

- **Goal:** Provide a dedicated page for users to view and manage notifications.
- **Implementation:** Created `/dashboard/notifications` with "Mark as read" and "Mark all as read" functionality.
- **Result:** Fully functional notification center integrated with the top bar.

Comprehensive System Re-Test

- **Goal:** Verify all features (Auth, Inventory, Sales, PDF, RBAC) work together.
- **Result:**
 - ■ Login successful for all roles.
 - ■ Inventory creation works.
 - ■ Sales & PDF generation works.
 - ■ RBAC permissions enforced correctly.

■ Future Roadmap

Priority 1: Advanced Analytics

- Implement detailed sales charts and graphs.
- User performance tracking.

Priority 2: Mobile Responsiveness

- Optimize the SaaS frontend for mobile devices.

Priority 3: Third-Party Integrations

- Payment gateway integration (Stripe/PayPal).
- Email service integration (SendGrid/AWS SES).