

# Backend

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## ☐ Overview

OnMart POS Backend is a full-featured RESTful API for managing retail operations. It provides comprehensive features for product management, transaction processing, inventory tracking, cashier shift management, and customer relationship management.

## ☐ Key Features

- **JWT Authentication & Authorization** - Secure role-based access control
- **Multi-Role User Management** - MasterAdmin, SuperAdmin, Admin, Cashier
- **Multi-Outlet Support** - Manage multiple store locations
- **Product Management** - Categories, brands, barcodes, and inventory
- **Transaction Processing** - Complete POS functionality with void/refund
- **Shift Management** - Track cashier shifts and sales
- **Promotional System** - Flexible discount management
- **Customer Management** - Customer profiles and transaction history
- **Dashboard & Reporting** - Sales analytics and insights
- **Invoice Generation** - PDF receipt printing
- **Import/Export** - CSV and Excel support

## ☐ Quick Start

### Prerequisites

- Node.js v16 or higher
- PostgreSQL v12 or higher
- npm or yarn

### Installation

1. **Clone the repository**

```
git clone <repository-url>
cd onmart-pos-backend
```

## 2. Install dependencies

```
npm install
```

## 3. Configure environment variables

```
cp .env.example .env
# Edit .env with your configuration
```

## 4. Set up database


```
# Create database
createdb onmart_pos_dev

# Run migrations
npx sequelize-cli db:migrate

# Seed initial data
npx sequelize-cli db:seed:all
```

## 5. Start the server

```
npm start
```

The server will be running at `http://localhost:3000` 

# Default Login Credentials

After seeding, you can log in with these accounts:

Role	Email	Password
MasterAdmin	masteradmin@mail.com	password
SuperAdmin	superadmin@mail.com	password
Admin	admin@mail.com	password
Cashier	cashier@mail.com	password

 **Important:** Change these passwords in production!

# 📁 Documentation

Comprehensive documentation is available in the `/docs` folder:

- [Backend Documentation](#) - Complete API reference, authentication, and development guide
- [Database Documentation](#) - Database schema, relationships, and query examples

## Quick Links

- [Installation Guide](#)
- [API Endpoints](#)
- [Database Schema](#)
- [Environment Variables](#)

# 📁 Project Structure

```
onmart-pos-backend/  
├─ config/          # Database configuration  
├─ controllers/    # Business logic  
├─ docs/           # Documentation  
│ └─ BACKEND.md    # Backend & API documentation  
│ └─ DATABASE.md   # Database documentation  
├─ helpers/        # Utility functions  
├─ middlewares/    # Express middlewares  
├─ migrations/     # Database migrations  
├─ models/         # Sequelize models  
├─ routes/         # API routes  
├─ seeders/        # Database seeders  
├─ uploads/        # File uploads  
├─ utils/          # Utilities  
├─ index.js        # Entry point  
└─ package.json    # Dependencies
```

# ☐ API Endpoints

Base URL: `http://localhost:3000/api`

## Core Endpoints

Category	Endpoint	Description
Auth	<code>POST /auth/login</code>	User login
Auth	<code>GET /auth/me</code>	Get current user
Products	<code>GET /products</code>	List products
Products	<code>POST /products</code>	Create product
Transactions	<code>POST /transactions</code>	Create transaction
Cashier	<code>POST /cashier/shifts/open</code>	Open shift
Dashboard	<code>GET /dashboard/summary</code>	Dashboard stats

For complete API documentation, see [BACKEND.md](#).

## ☐ Tech Stack

- **Runtime:** Node.js
- **Framework:** Express v5.1.0
- **Database:** PostgreSQL
- **ORM:** Sequelize v6.37.7
- **Authentication:** JWT (jsonwebtoken)
- **Security:** Helmet, CORS, bcrypt
- **File Processing:** Multer, Sharp
- **PDF Generation:** PDFKit
- **Data Processing:** fast-csv, xlsx
- **Logging:** Morgan

## ☐ Security Features

- ☐ JWT-based authentication
- ☐ Password hashing with bcrypt

- Role-based authorization
- Security headers (Helmet)
- CORS protection
- Input validation
- SQL injection prevention (Sequelize ORM)

# Development

## Database Commands

```
# Run migrations
npx sequelize-cli db:migrate

# Undo last migration
npx sequelize-cli db:migrate:undo

# Run seeders
npx sequelize-cli db:seed:all

# Database reset
npx sequelize-cli db:migrate:undo:all
npx sequelize-cli db:migrate
npx sequelize-cli db:seed:all
```

## Environment Variables

Key environment variables (see `.env.example` for all options):

```
PORT=3000
NODE_ENV=development
DB_USERNAME=postgres
DB_PASSWORD=your_password
DB_NAME=onmart_pos_dev
DB_HOST=localhost
JWT_SECRET=your_jwt_secret
ORIGIN_CORS=http://localhost:3711
```

# Database Schema

The system uses 16 tables with proper relationships:

- **Users & Roles** - Authentication and authorization
- **Products** - Inventory with categories and brands
- **Transactions** - Sales records with items
- **Shifts** - Cashier working periods
- **Customers** - Customer information
- **Promos** - Promotional campaigns
- **Outlets** - Store locations

For detailed schema information, see [DATABASE.md](#).

# Contributing

1. Fork the repository
2. Create a feature branch ( `git checkout -b feature/amazing-feature` )
3. Commit your changes ( `git commit -m 'Add amazing feature'` )
4. Push to the branch ( `git push origin feature/amazing-feature` )
5. Open a Pull Request

# License

This project is licensed under the ISC License.

# Support

For questions or support:

- Open an issue in the repository
- Contact the development team

# For New Developers

If you're taking over this project, start with these documents:

1. [Backend Documentation](#) - Understand the API architecture and endpoints
2. [Database Documentation](#) - Learn the database structure and relationships
3. **Environment Setup** - Follow the Quick Start guide above
4. **Test the API** - Use the default credentials to explore the system

## Recommended Reading Order

1. Installation & Setup
2. Database Schema Overview
3. Authentication Flow
4. API Endpoints Reference
5. Code Structure & Organization

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**Last Updated:** February 9, 2026