

# RICE MILL ERP SYSTEM

## Project Summary & Technical Documentation

Project Name:	Rice Mill ERP System
Generated:	February 21, 2026
Type:	Enterprise Resource Planning Application
Platform:	Windows Desktop Application
Technology:	Python, Tkinter, SQLite3

## PROJECT OVERVIEW

The Rice Mill ERP System is a comprehensive enterprise resource planning application designed specifically for rice milling operations. It provides integrated management of multiple facilities, inventory, financial transactions, and operational workflows. Built with Python and Tkinter, it offers a user-friendly desktop interface with robust SQLite database backend.

## KEY FEATURES

1. User Management - Role-based access control and authentication
2. Multi-Location Support - Manage multiple rice mills and godowns (storage facilities)
3. Inventory Management - Track storage capacity, stock levels, and movement history
4. Financial Management - Bank account setup and account payable/receivable tracking
5. Party Management - Manage suppliers, customers, and business partners
6. Product Management - Catalog rice products and varieties
7. Godown Operations - Monitor storage facilities, capacity utilization, and storage rates
8. Entry Logging - Track all godown entries with timestamps and party information
9. Reports & Analytics - Generate business reports and performance metrics

## DATABASE ARCHITECTURE

The system uses SQLite3 for data persistence with the following core tables:

Table Name	Purpose
users	Store user accounts and authentication credentials
mills	Store rice mill location information
godowns	Track storage facilities and capacity
godown_entries	Log all inventory transactions and movements
companies	Financial entity and business information
bank_accounts	Bank account details and financial records
products	Rice product catalog and specifications
parties	Supplier and customer information
accounts_payable	Outstanding payments to suppliers
accounts_receivable	Outstanding payments from customers

## CORE MODULES

- 1. Company Management:** Setup and maintain company information with bank accounts and financial details.
- 2. Mill Management:** Register and manage multiple rice milling facilities across different locations.
- 3. Godown Management:** Control storage facility operations including capacity tracking, stock monitoring, and storage charges.
- 4. Product Catalog:** Maintain a comprehensive list of rice products with specifications and pricing.
- 5. Party Management:** Manage supplier and customer information for procurement and sales activities.
- 6. Financial Module:** Track accounts payable and receivable with reporting capabilities.
- 7. Transaction Logging:** Record all godown entries with complete audit trails including timestamps, parties, products, and quantities.

# INSTALLATION & DEPLOYMENT

The project includes automated setup scripts for easy deployment on Windows systems:

Script	Description
build_app.bat	Builds executable using PyInstaller; automates dependency checking and compilation
create_shortcut.bat	Creates desktop shortcut for easy application launch
setup_all.bat	Master setup script that orchestrates build and shortcut creation

# TECHNICAL STACK

Technology	Version	Purpose
Python	3.x	Core programming language
Tkinter	Built-in	GUI framework for desktop interface
SQLite3	Embedded	Local database management
PyInstaller	Latest	Executable packaging and distribution

# USER ROLES & PERMISSIONS

The system supports role-based access control to ensure data integrity and appropriate user privileges:

- **Accountant:** Full access to financial records, accounts payable/receivable, and company information.
- **Manager:** Access to inventory, godown operations, and operational reports.
- **Admin:** Complete system access including user management, configuration, and all operational modules.

# SYSTEM REQUIREMENTS

## Minimum Requirements:

- Operating System: Windows 7 or later
- Processor: Intel Core 2 Duo or equivalent
- RAM: 2 GB minimum
- Storage: 500 MB free disk space
- Display: 1024x768 resolution minimum

## Recommended Specifications:

- Operating System: Windows 10 or Windows 11
- Processor: Intel Core i5 or higher
- RAM: 4 GB or more

- Storage: 1 GB free disk space
- Display: 1280x1024 or higher

## GETTING STARTED

- Step 1:** Run setup\_all.bat from the project directory
- Step 2:** The script validates Python installation and installs required packages
- Step 3:** Application is compiled into a standalone executable
- Step 4:** Optional: Create desktop shortcut for quick access
- Step 5:** Launch the application and create admin user account
- Step 6:** Configure company information and mill locations
- Step 7:** Begin operational activities and data entry