



CCS2002 | CSE2002
Group Project

Unified Business Management System

Software Requirement Specification

Document

Prepared by
Team 09

Date : 2025/07/25

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1. Introduction

1.1 Acronyms and Abbreviations

SRS - Software Requirement Specification

UBMS - Unified Business Management System

1.2 Software Overview

The Unified Business Management System (UBMS) is an enterprise-grade, modular web-based application with optional mobile integration. It is designed to replace existing outdated or fragmented tools like QuickBooks with an intelligent, scalable, and customizable business management solution. It caters to companies that manage inventory, purchases, invoices, taxation, and customer relations.

This SRS presents the system requirements, its specifications and functionalities.

1.3 System Constraints

Data Integrity: All modules must be consistent and synchronized across web and mobile platforms.

Security: Role-based access control and audit logs must be maintained.

Scalability: The system must scale to accommodate larger datasets and more complex workflows.

Integration: Must be integrable with cloud storage services, email, and external APIs like tax authorities.

Performance: Should respond within 2 seconds for queries under 1000 records.

1.4 About the Target Client

The initial implementation client is an **electrical items import and sales company**. They operate locally and regionally, dealing with a variety of electrical products like home appliances, lighting, and wiring equipment. Currently, the business is run using QuickBooks and spreadsheets which are not scalable or customized for their specific workflow.

The current system involves manual stock entries, physical quotation printing, disconnected invoicing and taxation processes and employee task management done manually or through paper. Types of products handled by the client can be grouped as electric appliances, cables and wires, lighting equipment, circuit boards and spare parts and switches and sockets. It has over 600 registered customers including individuals, wholesalers, and electrical contractors

and a supplier base of around 50+. On average, 100–150 unique items are processed as daily supplies per day. So around 30 purchase entries and 70–100 invoice entries daily.

As of our observations, estimated product entries after one year of nearly 100,000 records and projected invoice and payments records is around 40,000 per year. And we are expecting nearly 15,000 customer and supplier transactions for a year.

2. Motivation

The idea behind developing UBMS arises from the following motivations:

- **To make the operations smooth**

Manual entry and switching between multiple software tools creates delays, errors, and duplication. UBMS will automate quotation to invoice conversion, real-time stock adjustments and tax calculations and reports

- **To make workers happy to engage in their tasks**

Currently, employees struggle with outdated systems, leading to stress and low productivity. A centralized and user-friendly platform will minimize repetitive work, improve task clarity and allow fast decision-making through dashboards.

- **To automate the paper based modules**

Invoices, stock sheets, and quotations are currently paper-based. UBMS will digitize these workflows with email integration, digital signature support and document backup in the cloud.

- **To reduce waste**

By automating the system, we can reduce the paper waste, print waste and any other waste that happens in a manual system.

- **To generate the reports easily**

It is very convenient to get updated information from the system and generate required reports, and also it saves time.

- **To make the tracking easy**

As the company grows, the system must grow too. UBMS is modular and built to be reused across other businesses with minimal code changes.

- **To make it easy to share data among others**

Considering the existing manual system, it is very easy to share data and the documents among others as all are automated through the new system.

3. Objectives

The main goal of this project is to enhance the day-to-day operations of this business. It will replace the legacy system with a smart solution, workflow will be automated and also can maintain up-to-date inventories with minimum manual effort. Moving through this solution, we can ensure data integrity and business continuity through backups and recovery. So the main intention is to build a system that is modular, scalable, and suitable for future adaptations.

4. Scope

The Unified Business Management System (UBMS) will serve as an all-in-one platform to manage the business operations of a company importing and selling electrical items. As the business scales, manual methods (like QuickBooks or spreadsheets) have become inefficient, error-prone, and slow. The new system will automate, simplify, and centralize daily operations.

The system will comprise the following core modules:

1. Stock Maintenance Module – Real-time inventory updates, purchase order tracking.
2. Quotation Generator – Issue quotations directly to clients.
3. Invoice Management – Create standard and tax-compliant invoices (including SVAT).
4. Profit Calculation Module – Automates gross and net profit reporting.
5. Tax Calculation Module – Supports VAT, SVAT, and other local tax regulations.
6. User and Role Management – Manage admin and staff access.
7. Payment & Finance Management – Track receivables, payables, and payment status.
8. Data Backup and Recovery – Ensure data is secure and retrievable.

The target users are:

- Sales Executives
- Inventory Managers
- Finance Officers
- Business Owners/Admins

The system is designed to be scalable and flexible to adapt to other businesses beyond the current client. The software is also designed to scale across industries, meaning it can be reused by other companies with minimal customization.

4.1 Functional Requirements

Each requirement defines what the system should do:

4.1.1 Manage Users

Features:

- Add/edit/delete users.
- Assign user roles (Admin, Sales, Inventory Manager, Accountant).
- Allow login/logout.
- Password encryption and reset functionality.
- Access restrictions based on roles.

4.1.2 Stock Management

Features:

- Add new product items with model, brand, supplier, price, and warranty.
- Real-time stock level updates upon sales, purchase, or return.
- Alert for low stock level (e.g., "Below Reorder Point").
- Generate purchase orders.
- Sync data between dashboard and mobile app.

4.1.3 Quotation and Invoice System

Quotation Module:

- Generate customer-specific quotations.
- Include tax rates and validity dates.
- Send as PDF or email directly.

Invoice Module:

- Create sales invoices linked to stock.
- Normal VAT/SVAT invoices with correct formatting.
- Calculate total with tax, discounts, and charges.

4.1.4 Payment and Finance Management

Features:

- Record payments (full, partial, or credit).
- Show outstanding dues for each customer.
- Filter payment history by date, status, or customer.
- Export monthly payment and sales reports.

4.1.5 Profit and Tax Calculation

Features:

- Calculate gross profit per item or invoice.
- Deduct purchase cost, discounts, and taxes to show net profit.
- Support for multiple tax types (VAT, SVAT).
- Generate reports by period, brand, or category.

4.1.6 Backup and Recovery

Features:

- Automatic daily database backup.
- Manual backup on-demand.
- Restore functionality to a previous backup point.
- Backup logs and status monitoring.

4.2 Non-Functional Requirements

Usability

- The user interface should be clean, modern, and easy to navigate.
- Tooltips and error messages should guide users effectively.
- Mobile view must be optimized for dashboard use.

Performance

- Load time for dashboard and search under 2 seconds.
- Handle 1000+ product records without slowing down.

Security

- All passwords encrypted (bcrypt hashing).
- Role-based access control.
- Audit logs for sensitive actions (like price or tax edits).

Reliability

- System uptime target: 99.9%.
- Daily backups and logging to prevent data loss.

Scalability

- Easily add new modules (e.g., supplier returns).
- The system should support additional stores or branches.

Maintainability

- Modular code structure.
- Easily upgradable database schema and UI components.

Portability

- Should work on Chrome, Firefox, Edge, and mobile browsers.
- Compatible with Windows and Linux servers.

5. Main Critical Functionalities

These are the core operations that must work flawlessly for the system to succeed:

1. Stock Level Update after every sale and purchase.
2. Invoice Generation with accurate tax and pricing.
3. Quotation to Invoice Conversion flow.
4. Payment and Due Tracking per invoice.
5. Profit Report Calculation for sales analytics.
6. System Backup & Restore for disaster recovery.
7. User Role Control for data security.
8. Live Dashboard with critical business stats.

6. Hardware and Software Requirements

6.1 Hardware Requirements

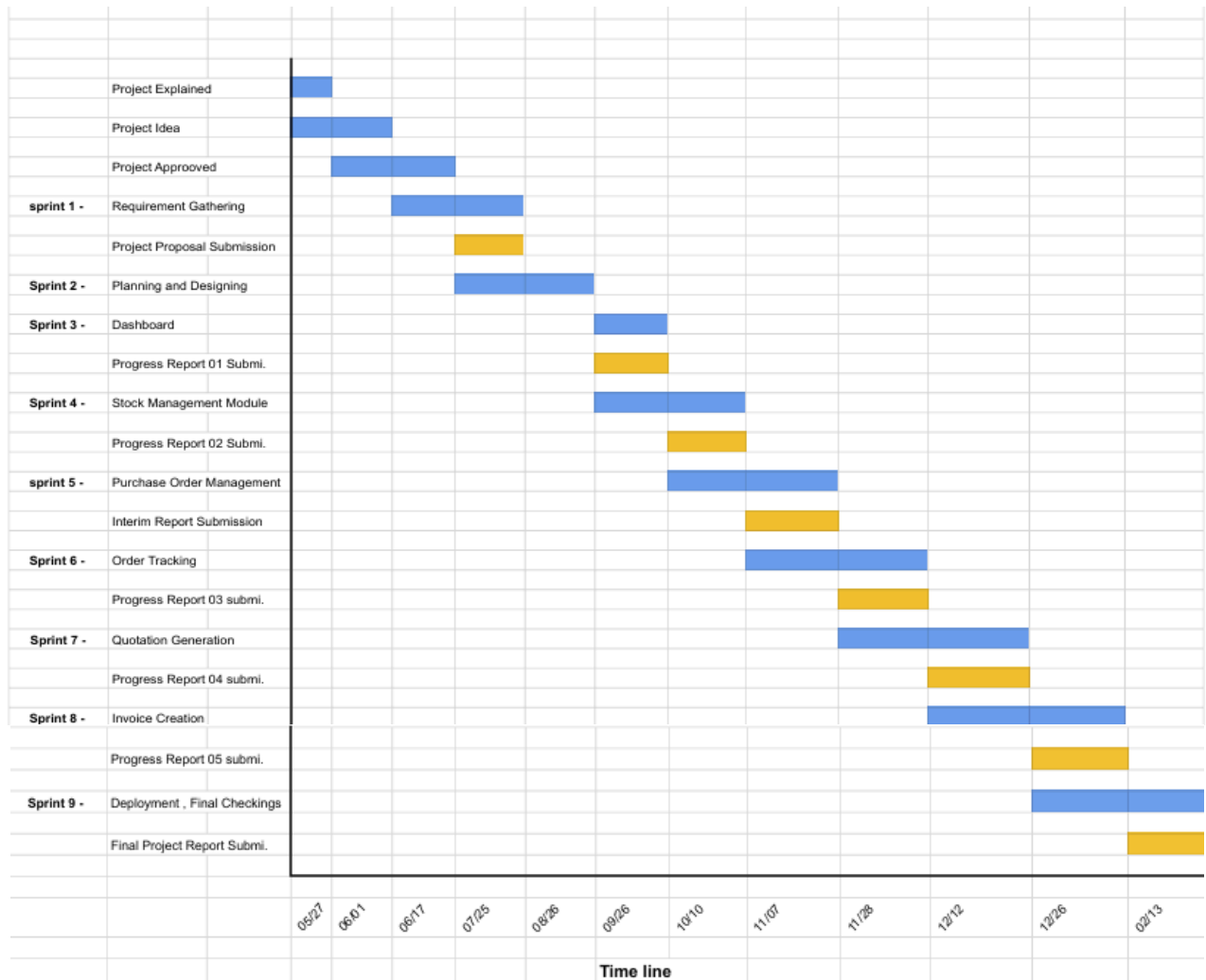
Type	Minimum Specification
Server (Cloud/VPS)	4-core CPU, 16 GB RAM, 500 GB SSD
Admin PC	Dual-core CPU, 4 GB RAM, 20 GB HDD, Browser
Mobile Access	Android/iOS device with at least 3 GB RAM

6.2 Software Requirements

Layer	Technology
Frontend	HTML, CSS, React.js, JavaScript
Backend	Java, Node.js, IntelliJ
Database	MongoDB
Design UI	Figma, Canva
Dev Tools	GitHub, VS Code, Jira, Postman
Testing	JUnit (Java), Jest (React), Selenium (optional)
CI / CD	GitHub Actions or Jenkins
Backup	Cloud storage (Google Drive, Dropbox API, etc.)

7. Gantt Chart

This Gantt chart outlines our project timeline for the development of the Unified Business Management System (UBMS). The project follows the Agile methodology, divided into 9 sprints, allowing iterative development, continuous feedback, and adaptability to changing requirements.



8. Team Overview

Our team consists of 8 members and their roles are as follows.

Role	Name	Reg.No.
Project Manager	R.M.L.G.Rathnadoowa	FC115252
Data Analyst	R.D.R.P.Ranasinghe	FC115596
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Backend Developer	W.M.A.T.Weerasekara	FC115281
	T.G.K.Pabodha	FC116347
Database Administrator	B.P.U.Mendis	FC115530
Tester	D.T.Paranavithana	FC115738
