ENTERPRISE RESOURCE PLANNING

FOR

POONAM COATINGS

V2

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# Introduction:

The purpose of this document is to outline the requirements and scope for developing an Enterprise Resource Planning (ERP) system tailored for the paint and coatings industry. The ERP system aims to streamline and optimize business processes.

### Purpose:

The purpose of the ERP system for the paint and coatings industry is to integrate and automate key business functions such as inventory management, production creation, sales and distribution, and financial management. It aims to enhance operational efficiency, decision-making capabilities, and overall business performance.

### Document Conventions:

This document follows standard conventions for documenting project requirements, including clear and concise language, structured sections, and consistent formatting for ease of understanding and reference.

### Intended Audience and Reading Suggestions:

The intended audience for this document includes stakeholders, project managers, developers, and professionals in the paint and coatings industry. Reading suggestions include reviewing the project scope, requirements, and key features outlined in the document to gain a comprehensive understanding of the ERP system's objectives.

### Project Scope:

The project scope for the ERP system in the paint and coatings industry encompasses the development of modules and functionalities tailored to the specific needs of paint manufacturers, distributors, and retailers. Key areas of focus include:

-Inventory management for raw materials and finished products.

- Production management.

- Sales and Purchase management for effective order processing and customer relationship management.

- Financial management for tracking expenses, revenue, and financial performance.

- Calendar movement for successfully logging in events.

The ERP system aims to address the unique requirements and challenges faced by businesses in the paint and coatings industry in the current system, providing a comprehensive solution for improved operational efficiency and business growth.

# Overall Description

#### Product Perspective

The ERP system for the paint and coatings industry is designed to operate as a standalone solution tailored specifically for businesses in this sector. It is designed to enhance productivity, streamline processes, and improve decision-making by integrating key functionalities into a cohesive platform.

This ERP system is intended to be a central hub that connects various departments within a paint and coatings company, enabling seamless communication and collaboration across different functions. It provides a unified view of business processes, from inventory management and production planning to sales, distribution, and financial management.

#### Product Features

Key features of the ERP system for the paint and coatings industry include:

* Inventory management for tracking and keeping records of the stocks present in the industry.
* Production management and scheduling to optimize manufacturing processes and store all the products at one place.
* Sales and distribution management for efficient order processing and customer management.
* Financial management for tracking expenses, revenue, and financial performance.
* Reporting and analytics tools for data-driven decision-making.

#### User Classes and Characteristics:

User classes for the ERP system include:

* + Administrators: Responsible for system configuration, user management, giving every employee and manager read-write rights and overall system maintenance.
  + Managers: Utilize the system for monitoring operations, generating reports, and making strategic decisions.
  + Employees: Engage with the system for day-to-day tasks such as order processing, inventory management, and product management.

#### User Documentation:

User documentation includes user manuals, training materials, and online resources to guide users on system usage, functionality, and best practices.

#### Assumptions and Dependencies:

Assumptions and dependencies for the ERP system include:

* Availability of necessary hardware and software infrastructure.
* User training and onboarding to ensure effective system adoption.
* Timely updates and maintenance to address system enhancements and issues.
* Collaboration with stakeholders and industry experts to validate system requirements and features.

# Functional Requirements

##### Product Management

Product Management maintains a centralized product catalog with details such as name, description, category, price, size, color, composition, and other relevant attributes. SKU will also be created in this module.

There will be Search, Filter, create new Product, Add new Product, Search and Filter option on the top.

* Search:

To Search For the specific SKU, Product, etc. You can search by writing product name, SKU number, color, etc.

* Filters:

You can provide filters for the following columns and user can select the predefined fields to have a view as per need.

The table format on the dashboard will show the following fields in a structured way:

1. SKU Number
2. Product Name [arrow button]

By clicking on arrow icon, you will be redirected to new page which will contain following things:

* Basic Details:

Basic Details will have delete and edit button beside it. By clicking on edit button you can edit the following details:

* SKU Number

You can edit the details and as per that SKU would be changed and you can also edit the details by clicking on edit button.

* + - Product name
    - Color
    - Category
    - Brand
    - Paint type
* Other details:
  + Size
  + Finish
  + Base Type
  + Description
* Paint Formula:
  + New Paint Name
  + Description
  + Base Paint 1
  + Proportion of Base Paint 1
  + Base Paint 2
  + Proportion of Base Paint 2
  + Total Quantity to Produce
* Price Details
  + Cost Price
  + Selling Price
  + Tax Rate (%)
  + Discounts

Note: There will be save and cancel button in each section.

* Comments:

There will be a comments section provided. The comments can be made for any changes that have been made. You can also tag someone from the company.

1. Description
2. Category
3. Brand
4. Paint Formula[View & Edit Button]

Will show the two paints which were mixed.

* + - View button to view a detailed description.
    - Edit button to edit the details.
* New Paint Name:

- Field Type: Text

- Example: Custom Blend Interior Paint

* Description:

- Field Type: Text

- Example: High-quality custom paint for interior walls

* Base Paint 1:
  + Field Type: Dropdown/Selection (from product catalog)
* Proportion of Base Paint 1:
  + Field Type: Numeric (percentage or ratio)
  + Example: 60% or 3:5
* Base Paint 2:
  + Field Type: Dropdown/Selection (from product catalog, optional)
* Proportion of Base Paint 2:
  + Field Type: Numeric (percentage or ratio, optional)
  + Example: 40% or 2:5
* Total Quantity to Produce:
  + Field Type: Numeric
  + Example: 10 liters
* Save New Formula:
  + Button to save the new paint formula in the system for future reference and production.

1. Color
2. Size
3. Paint Type
4. Finish
5. Base Type
6. Cost Price
7. Selling Price
8. Tax Rate (%)
9. Discounts

**There will be a option to add product:**

* Add New Product:

When you click on Create new Product a pop-up will open up with the following fields:

* Product Name:
  + Field Type: Text
  + Example: Premium Interior Paint
* Description:
  + Field Type: Text
  + Example: High-quality paint for interior walls
* Category:
  + Field Type: Dropdown/Selection
  + Examples:
    - Paint
    - Primers
    - Exterior Paints
    - Specialty Coatings
* Brand:
  + Field Type: Text
  + Example: Example Paint Co.
* Color:
  + Field Type: Dropdown/Selection
  + Examples:
    - White
    - Blue
    - Red
    - Green
* Size:
  + Field Type: Dropdown/Selection
  + Examples:
    - 1 liter
    - 5 liters
    - Quart
* Paint Type:
  + Field Type: Dropdown/Selection
  + Examples:
    - Acrylic
    - Latex
    - Oil-based
* Finish:
  + Field Type: Dropdown/Selection
  + Examples:
    - Matte
    - Satin
    - Gloss
* Base Type:
  + Field Type: Dropdown/Selection
  + Examples:
    - Water-based
    - Oil-based
* Cost Price:
  + Field Type: Numeric
  + Example: 20.00 per liter
* Selling Price:
  + Field Type: Numeric
  + Example: Rs35.00 per liter
* HSN/SAC code
  + - Field Type: Numeric
    - Example: 998732
* Tax Rate (%):
  + Field Type: Numeric
  + Example: 10%
* Discounts:
  + Field Type: Text (Can include details of any discounts applicable)
* SKU Number (Auto Generated):
  + Field Type: Alphanumeric (Automatically generated unique identifier for the SKU)
  + This Field will be automatically generated which will take two starting letters from pre-defined fields:
    - Product name
    - Color
    - Category
    - Brand
    - Paint type
* Followed by the sequential number 001.
  + Also you can edit the SKU number by clicking on the edit icon beside it and manually write the code.

Note:

When you click on edit button beside product button you will be able to see all the details of that product also you can change the details by clicking on edit button on top. You can also delete the button by clicking the delete button on the top.

* You can also give the option to add an image.
* By clicking on any product you can see all the product details.
* You cannot edit the basic details from which sku is generated.
* When you click on any product an option will be given in the header which will be:
  + Edit:

You can edit the details except SKU number and product name.

* + Cancel button.

Note for the Client: Are the above fields mentioned are sufficient. Please suggest if there is any addition and deletion of fields.

##### Inventory Management

1. Inventory
2. Order Approval
3. Stock Movement

###### Inventory

When you go under product details by clicking on edit button beside it then you can change the quantity of the product in the particular warehouse.

It will display fields like:

* Product

The product name will be shown.

* Stock qty:

The total stock in all the warehouse is shown.

* Minimum stock level:

The minimum quantity of stock level is defined.

* Sold:

Total quantity sold.

* Created At:

The date product was created.

* Actions Tab:

Actions tab will have arrow icon by clicking it you will be redirected to a new page:

* Basic Details:
* SKU Number

You can edit the details and as per that SKU would be changed and you can also edit the details by clicking on edit button.

* + - Product name
    - Color
    - Category
    - Brand
    - Paint type
* Update Inventory:

In update inventory you will be able to see the added warehouse. The tabular format will contain fields like:

* Warehouse Name

It will contain the name of the warehouse.

* Quantity

Quantity available in the warehouse.

* Minimum Stock Level:

The minimum quantity of stock to be maintained.

* Update Button:

By Clicking on this update button you can update the stock quantity and minimum stock level.

* Other details:
  + Size
  + Finish
  + Base Type
  + Description
* Paint Formula:
  + New Paint Name
  + Description
  + Base Paint 1
  + Proportion of Base Paint 1
  + Base Paint 2
  + Proportion of Base Paint 2
  + Total Quantity to Produce
* Price Details
  + Cost Price
  + Selling Price
  + Tax Rate (%)
  + Discounts

* Inventory History
* Date
* Product Name
* Previous Quantity
* Change Quantity
* New Quantity
* Price
* Comment
* User
* Comments:

There will be a comments section provided. The comments can be made for any changes that have been made. You can also tag someone from the company.

###### Order Approval:

**Tabular Format**

The order Approval page will showcase a tabular format presenting comprehensive details related to the approval ID of the stock. It will include various fields such as:

* Document Type:

For order approval, this could be a sales order, purchase order, or any other document type related to stock management.

* Document number:

Represents the unique identification number assigned to the document associated with the approval. It helps in linking the approval to a specific transaction or record.

When you click on the arrow icon next to the document number, you'll be directed to a new page where you'll find the following details:

* Document Number
* Created By:

Specifies the individual or entity who initiated the document.

* From Store:

Denotes the originating store or location.

* To Store:

Represents the destination store or location.

* Date:

Indicates the date and time when the document was created.

* Inventory Change Date:

Shows the date and time when the inventory change occurred.

* Comment:

Any additional remarks or notes related to the document.

* Following these details, there is likely a table presenting information about the items associated with the document, including:
  + Item Id
  + Description
  + Product Category
  + Quantity
  + Unit
  + Price/Unit
  + Comment

Note: You can print the details by clicking on Print Button.

* Approval Status:

Indicates the current status of the approval process. Common statuses may include "Pending," "Approved," or "Rejected." It provides an overview of the approval workflow.

* Created By:

Specifies the user or entity responsible for initiating the approval process. It helps in identifying the originator of the request.

* Date:

Represents the date when the approval request was created. It provides a timestamp for tracking the chronological order of approval actions.

* Action By:

Specifies the user or role responsible for taking action on the approval request. This could be an approver who reviews and decides on the approval.

* Action Date:

Represents the date when the action on the approval was taken. It provides a timestamp for tracking when the approval status was updated.

The page will have a Filter option at the top which will include Features like:

**Approval Status [Dropdown]** which will contain options like All, Approved, Pending, and Rejected accordingly the rows will be filtered

You also have the option to **approve pending requests** by filtering the approval status to "Pending." A list displaying all pending approvals will appear. You can select the checkbox next to the Approval ID, and options will appear at the top of the table, allowing you to either "Approve" or "Reject" the selected items.

**All the fields** within the tabular format will be incorporated into the filters column. You can selectively choose the fields you wish to view by clicking on their checkboxes and excluding the others. Once selected, simply click on the "Done" button to apply the chosen filters.

###### Stock Movement:

The Stock Movement page in the inventory or warehouse management system will showcase the following fields, providing detailed information about the stock transactions:

The Stock movement page will display the following fields:

* 1. Document number
  2. From Store
  3. To Location
  4. Number of Items
  5. Created on
  6. Scheduled Date
  7. User
  8. Status
  9. Filter

**All the fields are explained below:**

Document Number:

This is a unique identifier assigned to each stock movement transaction. It helps in tracking and referencing specific movements in the system.

When you click on the arrow icon next to the document number, you'll be directed to a new page where you'll find the following details:

* Document Number
* Created By:

Specifies the individual or entity who initiated the document.

* From Store:

Denotes the originating store or location.

* To Location:

Represents the destination store or location.

* Scheduled Date

The scheduled date for the order.

* Date:

Indicates the date and time when the document was created.

* Inventory Change Date:

Shows the date and time when the inventory change occurred.

* Comment:

Any additional remarks or notes related to the document.

* Following these details, there is likely a table presenting information about the items associated with the document, including:
  + Sku
  + Description
  + Product Category
  + Quantity
  + Unit
  + Price/Unit
  + Comment

1. From Store:

Indicates the source location or store from which the items are being moved. It provides information about the origin of the stock movement.

1. To Store:

Represents the destination location or store to which the items are being moved. It identifies where the stock is intended to be transferred.

1. Number of Items:

The number of items will display the total number of items in transit.

1. Scheduled Date:

This field will display the date of the stock movement.

1. User:

Indicates the user responsible for initiating or authorizing the stock movement. This provides accountability for the transaction.

1. Movement Type:

Describes the nature or purpose of the stock movement. Common movement types include "Dispatched”, “Delivery” etc..

1. Filter:

This page will have a filter option on the top of the page which includes filters for the following:

* Status[Dropdown]

Status includes pending, approved, and rejected. You can choose what you want to see.

* To Store
* Number of Items
* User
* Movement Type
* Status
* Reset all

A button allowing users to reset all applied filters and return to the default view.

* Done

A button to confirm and apply the selected filters, refining the display of stock movement data based on the chosen criteria.

You can select the checkbox and see whatever columns you want to view together and click on the done button.

Note: You can print the details by clicking on Print Button.

# Settings:

1. **Product Categories:**

All the categories will be listed here. Edit and Delete Button will be given.

You can add the new category by clicking on Create new Category:

* Category Name.
* Description.

The tabular format will display the following things:

* Category Name
* Description
* Actions

Actions Tab will have the following options:

* + Edit:

Edit will open up the pop-up that was opened while adding the category.

* + Delete:

Delete will open the pop-up asking for confirmation.

1. UOM

There will be an add unit of measurement button at the top of the page. By selecting this pop-up a new pop-up will open up which will contain fields like:

* ​Unit Name(Text-Field)[compulsory]
* ​UOM(Dropdown)
* ​Litre
* ​Millilitre
* ​Kilolitre

​There will be an Add UOM when you click on this you can add the UOM of your choice by writing the name and clicking on the save button.

* ​Unit Description
* ​Save Button
* ​You can click on the save button to save the UOM in the list.
  + ​There will be a list of added UOMs in the pop-up. The tabular format will contain fields like:
* ​ ​Unit Name
* ​UOM
* ​Unit description.
* Actions
* ​Edit

​You can edit the info by clicking on the edit button and after editing click on the save button to save the edits.

* ​Delete

​By clicking delete, it will ask for confirmation for deletion. Click on confirm delete to delete the item.

1. Stock Levels:[we can manage this in Inventory Product Management]

Here the information related to each product stock level will be defined:

* + - Product Name
    - Current Quantity
    - Minimum Stock Quantity
    - Actions Tab
* Edit

​You can edit the info by clicking on the edit button and after editing click on the save button to save the edits.

* ​Delete

​By clicking delete, it will ask for confirmation for deletion. Click on confirm delete to delete the item.

​ Note: When the current stock level of a product drops below the minimum quantity an automated notification should be sent to all the admins/users,

# Non Functional Requirement

Non-functional requirements for an ERP system for the paint coatings and industry may include:

1. Scalability: The ERP system should be able to handle increasing amounts of data and users as the company grows without significant performance degradation.
2. Security: It should ensure the security and privacy of sensitive business and customer data, with features like role-based access control, encryption, and secure authentication.
3. Reliability: The system should be highly reliable, with minimal downtime and robust backup and recovery mechanisms to prevent data loss.
4. Performance: The ERP system should provide fast response times for data queries and transactions to support efficient operations.
5. Interoperability: It should be able to integrate with existing systems, such as manufacturing equipment, supply chain management software, and customer relationship management tools.
6. Compliance: The system should comply with industry regulations and standards, such as environmental regulations for paint and coatings, as well as accounting and financial reporting standards.
7. Usability: The ERP system should have an intuitive user interface and provide training and support to ensure that employees can effectively use the system.
8. Flexibility: It should be adaptable to changing business needs and support customization without requiring extensive reprogramming.
9. Reporting and analytics: The system should provide robust reporting and analytics capabilities to help management make informed decisions based on real-time data.

# Conclusion

The conclusion for the Software Requirements Specification (SRS) of an ERP system designed for the paint and coating industry is that a comprehensive understanding of the industry-specific needs and challenges is crucial for developing a system that effectively meets the requirements of businesses in this sector. The SRS should capture both functional and non-functional requirements, considering aspects such as inventory management and product and SKU management.

Additionally, the SRS should reflect the unique characteristics of the paint and coating industry, including the need for color management, formulation management, and inventory tracking. By incorporating these specific requirements into the SRS, the resulting ERP system can better address the complexities of the industry, streamline operations, and support business growth.

Furthermore, the SRS should serve as a comprehensive guide for the development team, ensuring that the ERP system aligns with the industry's best practices, standards, and regulations. Clear communication of requirements, both functional and non-functional, within the SRS is critical for the successful development and implementation of an ERP system tailored to the Poonam coating industry.