
Material Management System for Ware Houses

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ABSTRACT

The main aim of the project is “To maintain the indent description, stores department purchase orders from different departments and tender details and BID sheets through online”, using J2EE technology. It is also used to send the comparative statements to different departments. There are mainly five modules like: Indent, which is used to send the indents from different departments to Sr. DMM (Sr. Divisional Material Manager). The module includes the delivery required at, quantity offered, rate unit, terms of delivery period, etc. Checklist is used to find whether it is approved by DRM/ADRM, NS Demand number, date, quantity, value in rupees, etc. It is also used to find whether the stock is prohibited or rolling stock etc. Tenders and purchase orders module includes the tender details whether it is limited tender or bulletin tender and it is used to find whether the tender has crossed duration or not. This module also includes the stores department purchasing orders. Bid sheet & comparative automatically generates comparative statement based on the name of the item, station, folio, make, for, delivery period in days and validity. This is also used to find whether the stock has delivered in time or not. This module is also used to send the BID details through online to different departments.

KEYWORDS: Bid, Tender, DRM, DMM

1. INTRODUCTION

Material management department is one of the important departments in this division. The Material management department handles the responsibilities like stores details, purchase orders for required materials and the main responsibility is tenders calling and all the details will be under control of this material management department. Tenders are invited from time to time for the supply of some hardware. Materials management plans and designs for the delivery, distribution, storage, collection, and removal of occupant-generated streams of materials and services. Tender details will be maintained through online. The main purpose of the project is to maintain the indent description from different departments, check listing those indents by Sr.DMM or COS. The indents which are check listed will be called for tendering. The tenders which are called will be applied by the users. This project is also used to maintain the check list for non-stock demands in different departments through online using indicators.

1.2 ABOUT THE ORGANIZATION

1.2.1. WARE HOUSE MANAGEMENT SYSTEM: The warehouse management is a division which maintains a complete track of the products available in each warehouse.

The sub modules of the division are given below:

- Details of the Employees responsible for each warehouse.
- Details of the Product available in each warehouse.
- Details of the Stock categorized under different warehouses.
- Ordered products List.

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- Pending orders List.
 - Delivered orders List.
 - Acknowledgements of Emails.
 - Various list of orders grouped under date wise.

1.2.2. ORDER PROCESS: In this module orders which are placed are processed one by one. Orders are sent to the AMM for validations & further processing.

1.2.3. WAREHOUSE EQUIPMENT: In this module if the warehouse is running out of stock of any product then the necessary actions should be taken to equip it with corresponding products either from the nearest warehouses or fixing the “lead- time” for it.

1.2.4. WAREHOUSE INITIALIZATION: Checking for the necessity for the new warehouses if the existing warehouses cannot store the stocks or there may be a need to install a new one to enhance the business in a new area.

1.2.6. CATALOGUE ADMINISTRATION: Catalogue should display only the available ones & their actual information and not the others, this should be checked time to time and new ones should be added accordingly.

1.2.7. MARKETING DIVISION: This department is responsible for the proper Advertisement of all the products in the market & collecting information about competitors, products and their cost.

2. MODEL VIEW CONTROL ARCHITECTURE

2.1. PRESENTATION TIER: The Presentation Tier of the architecture is composed of Java clients (JSP) that access Enterprise Beans using JNDI and Java RMI-IIOP (Internet Inter ORP Protocol).

2.2. BUSINESS TIER: Business Logic Tier contains components that work together to solve business problems. These components could be high performance engines such as Catalog Engines or Pricing Engines. Typically these components are written in a type-safe language such as Java or C++. It uses data layer to persist state permanently.

2.3. DATABASE TIER: Database (Persistence) support resides on the third tier. The EJB Beans can directly connect to the database through the JDBC or let the container handle the responsibility. In the latter case EJB Bean has to specify the container that it requires the persistence support. This type of support is called Container Managed Persistence (CMP).

2.4. INTEGRATION TIER: The application that is being developed contains a number of JAR files. Accessing each JAR file separately requires several class loaders. So all these JAR files are integrated by this tier into an EAR (Enterprise Application Resource) File, which is loaded once and only a single class loader is needed.

3. SYSTEM ANALYSIS

3.1. REQUIREMENT ANALYSIS

- System information
- Function
- Behavior

3.2. ANALYSIS OBJECTIVES

- Identification of the customer’s needs.
- Evaluation of the system for feasibility.
- Perform technical analysis.

- Establish constraints.

3.3 FUNCTIONAL REQUIREMENTS

- System should be able handle multiple users.
- Database updating should follow transaction processing to avoid data inconsistent

3.4 OUTPUT DESIGN

The Sr.DMM has to maintain all the stores information. He should be able to collect the correct information about the requirements as they should not get the situation where there is no requirement is satisfactory. The various types of outputs in general are: External Outputs, whose destination is outside the organization.

Sn	Requirement ID	Requirement Name	Source (customer /vendor)	Stable (Y/N)	Priority	Need	Verifiable (y/n)
1	ICS-UR01	Indent details	Customer	Y	High	Essential	Y
2	ICS-UR02	Checklist details	Customer	Y	High	Essential	Y
3	ICS-UR03	Tender details	Customer	Y	High	Essential	Y
4	ICS-UR04	Database maintenances by Administrator for IC System	Customer	Y	High	Essential	Y
5	ICS-UR05	Purchase Order & Comparative Statement details	Customer	Y	High	Essential	Y
6	ICS-UR06	Bid Sheet details	Customer	Y	High	Essential	Y
7	ICS-UR07	Reports Generation	Customer	Y	High	Essential	Y

Table 1: Requirements lookup table

Requirement ID	ICS-UR01
Title	Indent Details
Description	The purpose of this requirement is to store the details of the indents
Actor	Customer
Input	User has to enter the details like req no, indenter etc.,
Behavior	NA
Output	Message
Pre condition	NA
Post condition	NA
Exceptions	We may get SQL exception if the database connections are not working properly

Table 2: Performance Requirements

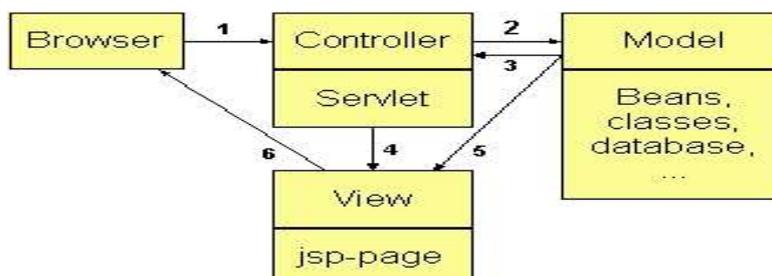


Fig 1: Architectural Diagram

4. SYSTEM DESIGN

4.1. CLASS DIAGRAM

A class is a complete description of set of objects sharing the same operations, attributes, semantics and relationships semantics. A class implements one or more interfaces. It is graphically indicated as a rectangle.

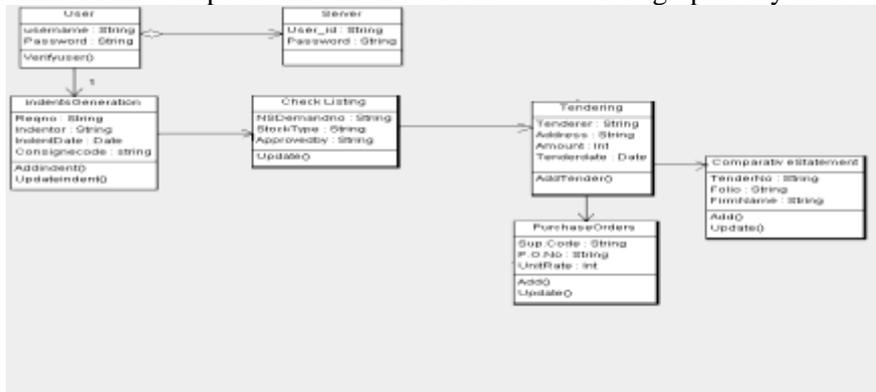


Fig 2: Class Diagram

4.2. SEQUENCE DIAGRAM

A sequence diagram is a diagram of interaction that indicates how objects operate with one another and the order of operation. It is a construct of a message sequence chart. A sequence diagram indicates interactions of objects arranged in time sequence.

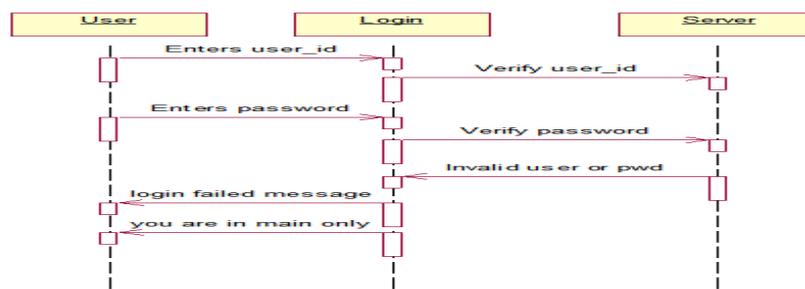


Fig 3: Sequence Diagram

4.3. ACTIVITY DIAGRAM

An activity diagram indicates a series of actions in a system in a visualized manner. These diagrams are periodically used in modeling of business processes. They can also describe the steps in a use case diagram. Activities can be modeled sequential and concurrent.

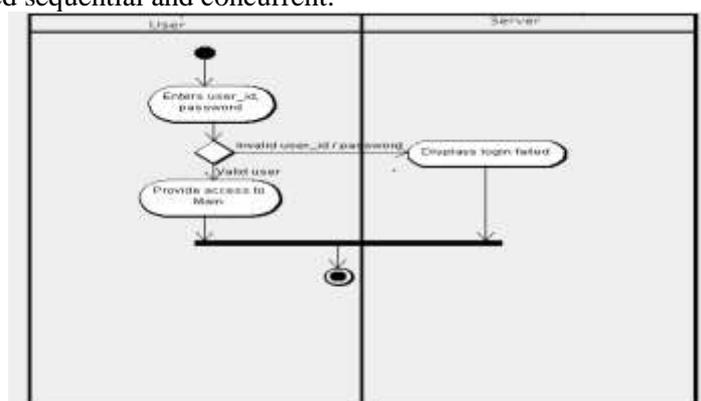


Fig 4: Activity diagram

4.4. USE CASE DIAGRAM

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

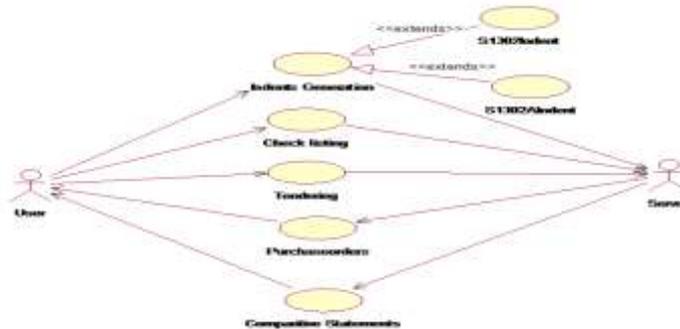


Fig 5: Use Case Diagram

4.5. Collaboration Diagram

A collaboration diagram, also called a communication diagram or interaction diagram, is an illustration of the relationships and interactions among software objects in the Unified Modeling Language.

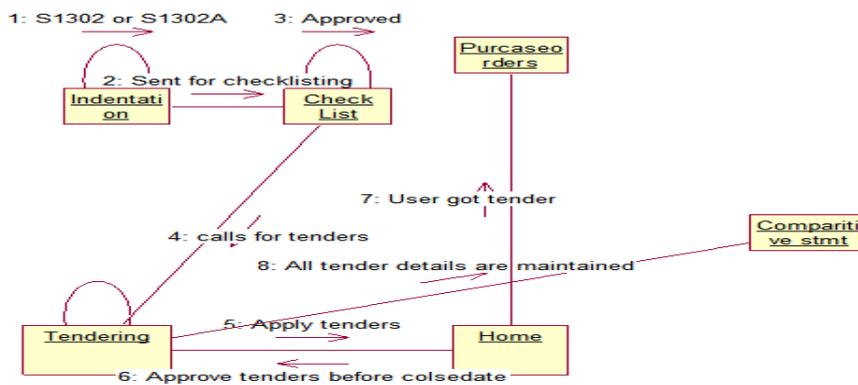


Fig 6: Collaboration Diagram

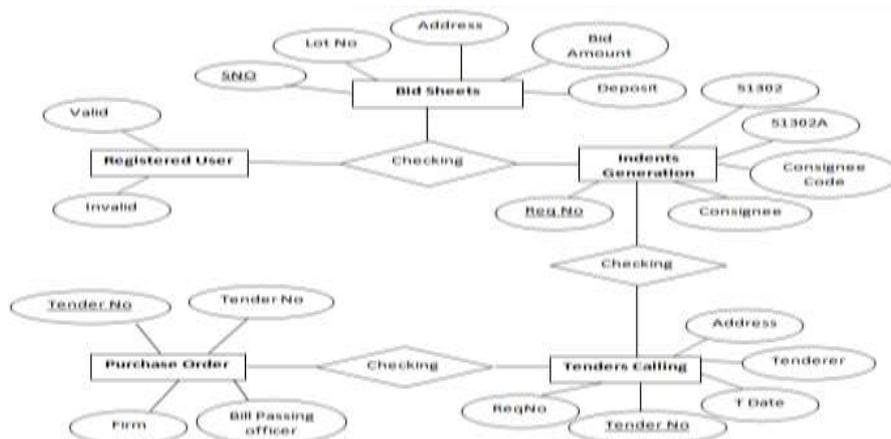


Fig 7: E-R digram

5. ORACLE-10G EXPRESS EDITION

Oracle database 10g express edition is an entry-level, small-footprint database based on the oracle database 10g release 2 code bases that's free to develop, deploy and distribute; fast to download and simple to administer.

6. HTML4.0

HTML 4.0 extends HTML with mechanism for style sheets, scripting, frames, embedding objects, improved support for right to left and mixed direction text, richer. Applications in HTML documents. This version of HTML has been designed with the help of experts in the field of international- libation, so that document may be written in any language and web transported easily around the world. This has been accomplished by incorporating [RFC2070], which deals with the internationalization of HTML.

7. DATA BASE TABLES

COLUMN NAME	DATA TYPE	NULL ABLE	DEFAULT	PRIMARY KEY
USERNAME	VARCHAR2(40)	Yes	-	-
PASSWORD	VARCHAR2(40)	Yes	-	-
CON_PWD	VARCHAR2(40)	Yes	-	-
NAME	VARCHAR2(40)	Yes	-	-
PF_NO	VARCHAR2(40)	Yes	-	-
DESIGNATION	VARCHAR2(40)	Yes	-	-
DEPT	VARCHAR2(40)	Yes	-	-
PLACE	VARCHAR2(40)	Yes	-	-

Table 3: Registration Table

8. CONCLUSION

This paper proposes a in the past, employees of the warehouse have been associated with performing organizational functions, such as order tracking, stocking maintenance and products category management in according with policies that have been established in conjunction with organization. The project deals with various operations and transactions that are carried out in the different levels of Material Management System in warehouse. Waterfall model is adopted for the development of the project. The development system is user friendly and the changes can be made easily as and when required. The Material management System in warehouse thus developed provides highly coordinated and collaboration means for managing the sales and inventory activities in the organization. It serves, as a gateway for the accurate tracking of customer needs. It helps to track the project execution between the organizations. The featured incorporated in the system such as:

- Big Database maintains.
- Order Management.
- Customer Rating.

9. REFERENCES

- [1] Palmer Dean, "Warehouse management: Integrating the missing link", *Manufacturing Computer Solutions*, vol. 8, no. 1, pp. 14-16, January 2002, ISSN 1358-1066.
- [2] Wulfraat Marc, "Warehouse Management Systems for Mid-Sized Companies", *Material Handling Management*, vol. 58, no. 11, pp. 30-32, October 2003, ISSN 1529-4897.
- [3] Benjamin S. Blanchard, *Logistics Engineering and Management*, Upper Saddle River, NJ: Prentice Hall, 2003.
- [4] Sanders Mike, "Signed sealed and delivered", *Transmission & Distribution World*, vol. 55, no. 6, pp. 18, August 2008.
- [5] José A. Blakeley , Neil Coburn , Per-IVke Larson, Updating derived relations: detecting irrelevant and autonomously computable updates, *ACM Transactions on Database Systems (TODS)*, v.14 n.3, p.369-400, Sept. 1989 [doi>10.1145/68012.68015]
- [6] R. Kimball, *The Data Warehouse Toolkit: Practical Techniques for Building Dimensional Data Warehouses*: John Wiley & Sons, Inc., 1996.
- [7] J. Moad, "Extra Helping of Data," in *PC Week Online*, 1998
- [8] X.S. Wang, C. Bettini, A. Brodsky, and S. Jajodia, "Logical Design for Temporal Databases with Multiple Temporal Types," *ACM Transactions on Database Systems*, 1997.
- [9] http://study.com/directory/category/Business/Business_Management_and_Operations/Logistics,_Distribution,_and_Materials_Management.html
- [10] <http://www.managementstudyguide.com/warehouse-and-materials-management.html>.