**A**

**LAB PROJECT REPORT**



**ON**

**INVENTORY MANGEMENT SYSTEM**

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Department of computer Science and Engineering

**Suresh Gyan Vihar University, Jaipur**

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# Abstract

The system aims at the maintenance and management of the different Hotels that are available in the different parts of the world. It mainly takes care of the Hotel management at the core area of the database. The system provides the information regarding the different Hotels thatare available and their status specific to availability. The guests can visit the site and register themselves with the required information that is expected by the system. Each registered guest can raise a request for the unit bookings. The Guests are scheduled with the information of the availability of the units for they have requested the time.



The process begins when a customer books a room, the booking can be placed online or through an Interactive Voice Response System (IVRS). The system will remember client preferences and can provide options accordingly. Once the room is booked, the visitor only needs to turn up and present identification. The system will also be able to send messages to the visitor’s phone to remind them of restaurants they may have visited in the past and other options. The system can accept bookings for restaurants present in the hotel. Things – to – do around the locality can be advertised as well through messages.

Every hotel has an intricate system of cleaning and replacement of room sheets, etc. The scheduling of the same can be completely managed by this system and it can also take into account guest preferences. The guest can use the IVRS at the hotel to inform the system about the best time to clean the room.

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#### System Introduction

For optimal sales and inventory management processes, you need robust functionality for managing your logistics facilities. Support for inventory management helps you record and track materials on the basis of both quantity and value.

Warehouse inventory management functions cover internal warehouse movements and storage.

Using this software we can reduce costs for warehousing, transportation, order fulfillment, and material handling – while improving customer service.

You can significantly improve inventory turns, optimize the flow of goods, and shorten routes within your warehouse or distribution center. Additional benefits of inventory management include improved cash flow, visibility, and decision making.

This software is user friendly and hence easy to use.

Employees can plan, enter, and document warehouse and internal stock movements by managing goods receipts, goods issues, storage, picking and packing, physical stock transfers, and transfer postings.

**Problems In existing system**

As we know manual system are quite tedious ,time consuming and less efficient and accurate in comparison to the computerized system.

So following are some disadvantages of the old system:

1. Time consuming
2. Less accurate
3. Less efficient
4. Lot of paper work
5. Slow data processing
6. Not user friendly environment
7. Difficult to keep old records
8. to keep old records

### Scope of Proposed System

The scope of this system is to provide user efficient working environment and more output can be generated through this. This system provides user friendly interface resulting in knowing each and every usability features of the system.

This system helps in tracking records so that past records can be verified through them and one can make decisions based on the past records. This system completes the work in a very less time resulting in less time consumption and high level of efficiency.

This system is developed in such a way that even a naïve user can also operate the system easily. The calculations are made very quickly and the records are directly saved into databases and the databases can be maintained for a longer period of time. Each record can be retrieved and can be verified for the future transactions.

Also this system provides high level of security for data leaking as only admin people can access the database no changes can be made in it until it verifies the user login id and password.

We also have operator login through which operator can take orders but can’t make changes in the database. Limited access is available to the operator.

### Feasibility Study

As we know each and every project needs to have a feasibility study for the complete understandability of the project. We will consider 3 types of feasibility study they are technical feasibility, operational feasibility and economical feasibility.

*Technical Feasibility:*

This new system requires 6 fully trained people to run the system perfectly. 1 admin person to maintain database n other 5 to handle the system interface and order making things.

As our existing system is purely manual, so we need a onetime investment of Rs 4 Lacs for the purchase of 6 computers, 5 invoice printers, a laser printer, AC and networking etc. It requires apprx. 10 Lacks PA as a operating cost.

With the above details our system is technically feasible as after investing 14 Lacs in a year, the company is still saving Rs 15 Lacs PA.

*Operational Feasibility:*

The new solution is feasible in all sense but operationally it is not. The new system demands the expulsion of at least 15 people from the company. It creates an environment of joblessness and fear among the employees. It can lead to an indefinite strike in the company also. So the management must take corrective actions prior in advance in order to start the further proceedings.

### Operating Environment – Hardware and Software

*HARDWARE REQUIREMENTS*

* + Processor: Pentium 4 or more for optimum performance
  + RAM: Recommended 256MB
  + Hard Disk: Minimum 20GB

***SOFTWAREREQUIREMENTS***

* + Operating System - Certified Distribution of WINDOWS
  + [Visual Basic 2005 Express Edition](http://www.microsoft.com/Express/VB/)
  + Database(Backend) - MS Access 2003

### Objectives

* The main objective of this system is to keep records of the complete inventory.
* It support for inventory management helps you record and track materials on the basis of both quantity and value.
* It improves cash flow, visibility, and decision making.
* For warehouse management, you can track quantity and value of all your materials, perform physical inventory, and optimize your warehouse resources

### User Requirements

##### FUNCTIONAL REQUIREMENTS

1. INPUT/OUTPUT
   1. System shall have a form to accept the customer details.
   2. System shall have a form to accept the Plant details.
   3. System shall display transaction details.
   4. System shall provide search facility on customer name, Order Placed, date of order, date of order dispatch, date of transaction, transaction amount, credit card no etc.
   5. System should provide facility for change in address/name.
   6. System should maintain the details about placing order/dispatch or order i.e, order status
2. PROCESSING
   1. System should automatically generate the bill.
   2. System should inform the pending order and make changes if the order is dispatched.
3. ERROR HANDLING
   1. Should report any errors on duplicate primary keys.
   2. Should report any ‘Out of Range’ values on numeric fields
   3. Should report any data type mismatches any field on the forms.
   4. Should report on any ‘Invalid dates’
   5. Should report any violation of authorization of rights
   6. Should report any Invalid Login errors

##### NON-FUNCTIONAL REQUIREMENTS

1. All user manuals should be provided in the necessary format
2. Application should support 5 simultaneous users.
3. Transaction should be completed within 1/5th of second
4. There will be backup procedure to maintain records.

# ANALYSIS & DESIGN

##### Use case Diagram for Supplier

Login Id and Pwd

Checks

<<include>>

Tracks Order

Dispatch order on

Supplier

Customer

Sends Invoice

Updates Records

**Use Case Diagram for Customer**

Studies Requirements

Make list of

Places the Order

Customer

Makes payment

Invoice

Clerk

Send GRN

|  |  |
| --- | --- |
| Payment | |
| Amount  Payment  date Makepayme nt() Getinvoice() | |
|  |  |

##### Class Diagram for a customer order

calcBilltotal() calctotalweig ht()

Order

~~Order\_no~~  Ordercredate Order\_status Shipment\_dat

e Challan

|  |  |
| --- | --- |
| Customer |  |
|  |
| Cust\_Id |
| Name |
| Addr1 |
| Addr2 |
| Cust\_city |
| Pincode |
| Addcust() |
| Updatecust() |
| Getcustdet() |



validating

validating

Chqno

Bankname Bankid

Number

Type Expirydate

Cheque

Credit

|  |  |
| --- | --- |
| Ordetdetail |  |
|  |
| Orderno  Materialqty Materialvalue |
| Caclsubtotal calcweight |

|  |  |  |
| --- | --- | --- |
| Material | | |
| Materialcode Plantcode Stckqty | | |
| Getpriceforqty() | | |
|  |  | |
| GRN  Recivedqty Damaged | |  |
| Rejected  Rejectgood() | |
| Description() | |

**Sequence diagram for Supplier**

Supplier

Customer

Invoice

Log In

Validate

Tracks order

Places order

Takes customr details

Fill Order details

Makes Payment

Dispatch Order

Send order details

Add new entry

Send Invoice

Log Out

Send GNR

Transaction

# **Test Procedures and Implementation**

##### 

##### Introduction

Testing presents an interesting anomaly for the software engineer. During earlier software engineering activities, the engineer attempts to build software from an abstract concept to a tangible product. Now comes testing. The engineer creates a series of test cases that are intended to “demolish” the software that has been built. In fact, testing is the one step in the software process that could be viewed (psychologically, at least) as destructive rather than constructive.

Software engineers are by their nature constructive people. Testing requires that the developer discard preconceived notions of the “correctness” of software just developed and overcome a conflict of interest that occurs when errors are uncovered.

If testing is conducted successfully (according to the objectives stated previously), it will uncover errors in the software. As a secondary benefit, testing demonstrates that software functions appear to be working according to specification, that behavioral and performance requirements appear to have been met. In addition, data collected as testing is conducted provide a good indication of software reliability and some indication of software quality as a whole. But testing cannot show the absence of errors and defects, it can show

Only that software errors and defects are present. It is important to keep this (rather gloomy) statement in mind as testing is being conducted.

##### Testing principles

Before applying methods to design effective test cases, a software engineer must understand the basic principle that guide software testing:

All tests should be traceable to customer requirements Tests should be planned long before testing begins

80 percent of all errors uncovered during testing will likely be traceable to 20 percent of all program components. The problem, of course, is to isolate these suspect components and to thoroughly test them.

Testing should being “in the small” and progress toward testing “in the large”.

Exhaustive testing is not possible

To be most effective an independent third party should conduct testing

A rich variety of test case design methods have evolved for software. These methods provide the developer with a systematic approach to testing. More important, methods provide a mechanism that can help to ensure the completeness of tests and provide the highest likelihood for uncovering errors in software.

##### Any engineered product (and most other things) can be tested in one of two ways:

Knowing the specified function that a product has been designed to perform, tests can be conducted that demonstrate each function is fully operational

While at the same time searching for errors in each function; (2) knowing the internal

Working of a product, tests can be conducted to ensure that “all gears mesh,” that is, internal operations are performed according to specifications and all

internal components have been adequately exercised. The first test approach is called black box testing and the second, white-box testing.

##### Testing performed were:

* + UNIT TESTING
  + INTEGRATION TESTING
  + DATABASE TESTING
  + RECOVERY TESTING
  + FUNCTIONALITY TESTING
    - SMOKE TEST
    - SANITY TEST
  + COMPATIBILITY TESTING
  + LOAD TESTING
  + SYSTEM TESTING
  + PERFORMANCE TESTING
  + USER ACCEPTANCE TESTING

##### White box testing

Sometimes called glass-box testing is a test case design method that uses the control structure of the procedural design to derive test cases. Using white-box testing methods, the software engineer can derive test cases that (1) guarantee that all independent paths within a module have been exercised at least once, (2) exercise all logical decisions on their true and false sides, (3) execute all loops at their boundaries and within their operational bounds, and (4) exercise internal data structures to ensure their validity.

White-box testing of software is predicated on close examination of procedural detail. Providing test cases that exercise specific sets of conditions and/or loops tests logical paths through the software. The “status of the program” may be examined at various points to determine if the expected or asserted status corresponds to the actual status. Basis path testing is a white-box testing technique first proposed by Tom McCabe. The basis path method enables the test case designer to derive a logical complexity measure of a procedural design and use this measure as a guide for defining a basis set of execution paths. Test cases derived to exercise the basis set are guaranteed to execute every statement in the program at least one time during testing.

In this system, the system was tested for the calculation matters were the data provided for giving the right output or not. If wrong data was provided then what it is throwing error or accepting.

##### Black box testing

Also called behavioral testing, focuses on the functional requirements of the software. That is, black box testing enables the software engineer to derive sets of input conditions that will fully exercise all functional requirements for a program. Black box testing is not an alternative to white-box techniques. Rather, it is a complementary approach that is likely to uncover a different class of error than white-box methods. When computer software is considered, black box testing alludes to tests that are conducted at the software interface. Although they are designed to uncover errors, black-box tests are used to demonstrate that software functions are operational, that input is

Properly accepted and output is correctly produced and that the integrity of external information is maintained. A black-box test examines some fundamental aspect of a system with a little regard for the internal logical structure of the software. Black-box testing attempts to find errors in the following categories:

1. Incorrect or missing functions,
2. Interface errors,
3. Errors in data structures or external database access,
4. Behavior or performance errors, and
5. Initialization and termination errors. By applying back-box techniques, we derive a set of test cases that satisfy the following criteria:
6. Test cases that reduce, by a count that is greater than one, the number of additional test cases that must be designed to achieve reasonable testing and
7. Test cases that tell us something about the presence or absence of classes of errors, rather than an error associated only with the specific test at hand.

White-box testing should not, however, be dismissed as impractical. A limited number of important logical paths can be selected and exercised. Important data structures can be probed for validity. The attributes of both black and white box testing can be combined to provide an approach that validates the software interface and selectively ensures that the internal workings of the software are correct.

Black box testing for this system was done to check the internal testing i.e, the system is working properly in each case or no. What kind of errors are there in database design.

##### Testing Process

**The testing process can be shown as:**



Levels of testing

Test Plan

Test Procedures

Test Case Specification

Yes

Test Case Execution

Is Error Uncovered

?

Test Case Analysis

Test Report

No

##### Menu Explanation

Start Up screen

1. The first menu item of the System screen is *transaction screen* this screen is the main screen it has all the menu items which help to take order and maintain it in database. The 1st tab is “*order entry”* this screen will be disabled initially to make an order operator has to click on *order entry* button at the right hand side of the screen

Order Entry

1. Once that button is clicked the screen is activated and orderno.,oder creation date and order status are auto generated search cust\_code by clicking *search* button and retrieve rest of the customer details. If the customer is new then administrator has to add new customer into database which is only accessed by admin person operator are not given those rights.
2. Once customer details are retrieved click *calculate order value button this* this will take to the order detail screen where order no is auto generated material code is selected and item qty is to be filled and by clicking on calculate the total is calculated n thus the order is placed
3. To add all details in transaction screen refresh button should be clicked
4. Customer ref number is also have to be filled by operator/admin n then to go on the next screen click on verified

Shipment Details

1. The shipment details are already auto filled by the system operator has to provide the transporter name only

Accounts Department

1. Accounts dept is also auto filled admin has to verify all the details and make order date according to convenience

Machine Installation

1. Next screen is machine installation here the engineer who gonna install the machine is to be given.

Commercial Group

1. In commercial group screen all the payment details are to be filled accordingly once customer makes the payment

#### Future Scope:

The scope of the project includes that what all future enhancements can be done in this system to make it more feasible to use

* + Databases for different products range and storage can be provided.
  + Multilingual support can be provided so that it can be understandable by the person of any language.
  + More graphics can be added to make it more user-friendly and understandable.
  + Manage & backup versions of documents online.

**Drawbacks And Limitations**

1. The system is not capable of handling more than 6 users at a time.
2. Some keywords in system are difficult to understand so the admin n operator person should understand them thoroughly to use the system accurately.
3. Graphs could have been added in order to get the records more clearly.

## Conclusion

While developing the system a conscious effort has been made to create and develop a software package, making use of available tools, techniques and resources – that would generate a proper System

While making the system, an eye has been kept on making it as user- friendly, as cost-effective and as flexible as possible. As such one may hope that the system will be acceptable to any user and will adequately meet his/her needs.

As in case of any system development processes where there are a number of shortcomings, there have been some shortcomings in the development of this system also. The project is still under modification.



**State Transition Diagram for supplier**



Initiate

LogIn

Validate User\_id and Pwd

Invalid userid / pwd

Tracks Order

Order

Order Details

Check For the transport

Shipment

Shipment availabili ty

Dispatch order

Payment Details

~~Invoice~~

Records

Invoice Update

details Records



**Activity Diagram for system:**

Customer



Supplier

Shipment

Request Material

Get Materials

Ship Order

Tracks Order

Receive Order Bill Customer

Pay Bill

Send GRN

Close Order