A PROJECT REPORT

On

Cold Storage Information System

Submitted in partial fulfillment of the requirements for the award of the degree of
Bachelor of Technology in Computer Science and Engineering

Undertaken at

NATIONAL INFORMATICS CENTRE (NIC)

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ACKNOWLEDGEMENT

It is a great sense of satisfaction and a matter of privilege to me to work at **National Informatics Centre, Kolkata**. I wish to express my heartiest thanks to NIC West Bengal Centre for providing me the opportunity to undergo training in the esteemed organization. Under such a nice environment, systematic work approach and target oriented task management of this division provided me with the much-desired training experience needed for future software professional.

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(Abhishek Maity)

Government of India
Ministry of Communications & Information Technology
Department of Information Technology

National Informatics Centre

This is to certify that Mr. Abhishek Maity a student of B.Tech CSE from Guru Nanak Institute of Technology (Institute/University) has done his industrial training at Training Division, NIC, Kolkata, from June to July 2013. The project work entitled “*Cold Storage Information System*” embodies the original work done by Mr. Abhishek Maity during his semester break project training period.

Project Guide

Head, Training Division

DECLARATION

I do, hereby, declare that the dissertation entitled “**Cold Storage Information System**” is an authentic work developed by me at National Informatics Centre, Kolkata, under the guidance of Mr Amitava Bose (Technical Director) and Mr. Apurba Sain .I also declare that, any or all contents incorporated in this dissertation have not been submitted in any form for the award of any degree or diploma of any other institution or university.

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Project Title : Cold Storage Information System

Abstract : The project has been developed to keep track of detail regarding the transactions. The current product is a web-based. To provide the basic services related to storage of commodities viz. potato etc., to maintain their loading and unloading details of particular cold store hirer in the state. The product will take care of all the transactions of each cold storage. These transactions are then assigned a unique SR Number generated by the system.

At last Transaction Sheet is generated that include loading & unloading quantity, transaction date and respective SR number of requested which is kept by The Directorate of Agriculture, Government of West Bengal.

Tools & Technologies used :

- Microsoft-SQL Server 2008
- Microsoft Windows 7 Ultimate
- Visual Studio .NET 2010

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1. INTRODUCTION

1.1NIC

National Informatics Centre (NIC) of the Department of Information Technology is providing network backbone and e-Governance support to Central Government, State Governments, UT Administrations, Districts and other Government bodies. It offers a wide range of ICT services including Nationwide Communication Network for decentralized planning, improvement in Government services and wider transparency of national and local Governments. NIC assists in implementing Information Technology Projects, in close collaboration with Central and State Governments, in the areas of (a) Centrally sponsored schemes and Central sector schemes, (b) State sector and State sponsored projects, and (c) District Administration sponsored projects. NIC endeavours to ensure that the latest technology in all areas of IT is available to its users.

NIC Headquarters is based in New Delhi. At NIC Headquarters, a large number of Application Divisions exist which provide total Informatics Support to the Ministries and Departments of the Central Government. NIC computer cells are located in almost all the Ministry Bhawans of the Central Government and Apex Offices including the Prime Minister's Office, the Rashtrapati Bhawan and the Parliament House. Apart from this, NIC has various Resource Divisions at the Headquarters which specialize into different areas of IT and facilitate the Application Divisions as well as other NIC Centres in providing state-of-the-art services to the Govt.

At the State level, NICs State/UTs Units provide informatics support to their respective State Government and at the District level lies the NIC District Informatics Offices.

NIC has conceptualized, developed and implemented a very large number of projects for various Central and State Government Ministries, Departments and Organizations. Many of these projects are continuing projects being carried out by various divisions of NIC at New Delhi Headquarters and State/District centres throughout the country. Some of the most important noteworthy projects, which offer a glimpse of the multifaceted, diverse activities of NIC, touching upon all spheres of e-governance and thereby influencing the lives of millions of citizens of India are given below:

- Agricultural Marketing Information Network (AGMARKNET).
- Central Passport System.
- Community Information Centres (CICs).
- Computerised Rural Information Systems Project (CRISP).
- Court Information System (COURTIS).
- Department of Agriculture Network (DACNET).
- Examination Results Portal.
- India Image.
- Land Records Information System (LRIS).
- National Hazardous Waste Information System (NHWIS).
- Public Grievance Redress and Monitoring System (PGRAMS).
- Spatial Data Infrastructure (SDI).
- Video Conferencing.

Website of NIC

<http://www.nic.in/>

1.2 STATE ORGANIZATION

Department of Agriculture, Government of West Bengal

The Agriculture Department is concerned with activities relating to policy decisions on agricultural production and productivity. The Directorate and field level offices in the districts and the West Bengal State Seed Corporations under the Department are involved in the execution of these policies through generation and transfer of technology, ensuring availability and timely distribution of agricultural inputs viz., specially seeds, fertilisers, subsidy, credit etc. They also provide support services through soil testing, soil conservation, water conservation, and seed testing / seed certification. These bodies are also involved in plant protection and quality control of fertilisers, pesticides etc. Main stake holders for the Department are--(i) Farmers (ii) Government (iii) Manufacturer, dealers and retailers of Fertiliser, Seed and Pesticide (iv) Citizens in General.

Website <http://wbagrisnet.gov.in>

Directorate of Agricultural Marketing

Improvement of marketing systems for both farm produce and inputs necessitates a strong back up by appropriate policy and legislative frameworks and effective government support services. Such services can include provision of market infrastructure, supply of market information, and agricultural extension services able to advise farmers on marketing. Remunerative prices of agricultural produce and productivity are always interlinked. Training in marketing at all levels is the need of the day; from farmers groups to fresh students seeking marketing of agricultural produce as profession. Agricultural marketing being a State subject, the West Bengal Government to regulate the marketing practice of the agricultural produce by small and marginal farmers framed a comprehensive act as The West Bengal Agricultural Produce Marketing (Regulation) Act, 1972. The Government of West Bengal with a view to focus the attention on marketing of agricultural produce set up a separate department as Agricultural Marketing Department to deal exclusively with all such matters. The West Bengal State Marketing Board the statutory body constituted under the Act and Directorate of Agriculture Marketing are primarily responsible for implementation of the Act with a view to regulate the trade of agricultural produce and create required market infrastructure development.

Website <http://agrimarketwb.org/>

1.3 INTRODUCTION TO COLD STORAGE INFORMATION SYSTEM

Cold Storage Information System deals with the maintenance of records. The above is one of the primary goals of Directorate of Agricultural Marketing, Government of West Bengal

1.3.1 PROJECT DESCRIPTION

One of the primary roles of Directorate of Agricultural Marketing is to look after the cold storages. Hence, cold storages are used for high value items or when prices crash down due to bumper crop or for such items which are grown during the season but there is a demand round the year which are quickly perishable.

Thus, Directorate of Agricultural Marketing has devised a tracking system for maintenance all store transactions through state centralized Cold Storage Information System.

The operations performed are:

- Role-based Log-in
- Cold Storage Hirer entry
- Loading and unloading stock transactions
- Storage of transactions report for each cold store individually

1.4 COMPONENT ASSIGNED

Module I- Development of a secured role based log-in.

Module II- Creation and storage of loading and unloading stock details.

Module III- Retrieval of store reports

1.4.1 GOAL OF THE PROPOSED SYSTEM

The goal of the proposed system is to prepare on requirements of the system

Module-I contain two stages:

- Role based log-in

In computer systems security, role-based access control is an approach to restricting system access to authorized users.

Module-II

- Creation of loading and unloading transaction forms

Module-III

- Generation of transactions report

1.4.2 LIMITATION OF THE EXISTING SYSTEM

- Existing system was manual.
- Time consuming as data entry which include calculations took lot of time.
- Searching was very complex as there could be 100's of transaction every month.
- The proposed system is expected to be faster, reliable and secure than the existing system.

2 SYSTEM ANALYSIS

System Analysis refers into the process of examining a situation with the intent of improving it through better procedures and methods. System Analysis is the process of planning a new System to either replace or complement an existing system. But before any planning is done the old system must be thoroughly understood and the requirements determined. System Analysis, is therefore, the process of gathering and interpreting facts, diagnosing problems and using the information to re-comment improvements in the System. Or in other words, System Analysis means a detailed explanation or description. Before computerized a system under consideration, it has to be analyzed. We need to study how it functions currently, what are the problems, and what are the requirements that the proposed system should meet.

System Analysis is conducted with the following objectives in mind:

1. Identify the customer's need.
2. Evaluate the system concept for feasibility.
3. Perform economic and technical analysis.
4. Allocate functions to hardware, software people, database and other system elements.
5. Establish cost and schedule constraints.
6. Create a system definition that forms the foundation for all the subsequent engineering work.

2.1 REQUIREMENT ANALYSIS/ SRS OF THE COMPONENT

2.1.1 PROBLEM DEFINITION

To provide the basic services related to the transactions in cold storage, to maintain their loading and unloading stock details. The product will take care of all these. Cold store report is maintained from the starting of the financial year. It is concern to keep the records of each loading and unloading, which is received, from firm, providing service. These transactions are then assigned a

unique SR Number generated by system, further they are supplied to Directorate of Agricultural Marketing.

2.1.2 PERFORMANCE REQUIREMENTS

The following performance characteristics should be taken care of while developing the system:

- **User friendliness:** The system should be easy to learn and understand so that new user can also use the system effectively, without any difficulty.
- **User satisfaction:** The system should meet user expectations.
- **Response time:** The response time of all the operations should be low. This can be made possible by careful programming.
- **Error handling:** Response to user errors and the undesired situations should be taken care of to ensure that the system operates without halting.
- **Safety:** The system should be able to avoid or tackle catastrophic behavior.
- **Robustness:** The system should recover from undesired events without human intervention.

2.1.3 SYSTEM REQUIREMENTS

SOFTWARE REQUIREMENT

- Visual Studio .NET 2010
- SQL Server 2008
- Windows 7 Ultimate edition

HARDWARE REQUIREMENT

- Intel® Core™ i3 processor
- 512 MB RAM
- 20GB HARD DISK

2.1.4 ACCEPTANCE CRITERIA:-

The following acceptance criteria were established for the evaluation of the new system:

- **User friendliness:** - The system should meet user needs and should be easy to learn and use.
- **Modularity:** - The system should have relatively independent and single function parts.
- **Maintainability:** - The system should be such that future maintenance and enhancements times and efforts are reduced.
- **Timeliness:** - The system should operate well under normal, peak and recovery conditions.
- The system developed should be accurate and hence reliable i.e. the error rate should be minimized and the outputs should be consistent and correct.
- Both the execution time and response time should be negligibly low.
- The system should be efficient i.e. the resources utilization should be optimal.
- The system should have scope to foresee modifications and enhancements i.e. it should be able to cope with the changes in future technology.

2.2 FEASIBILITY STUDY

All projects are feasible given unlimited resources and infinite time. Unfortunately the development of computer-based system in many cases is more likely to be plagued by scarcity of resources and delivery date. Hence, we have made use the concept of reusability that is what Object Oriented Programming (OOPS) is all about.

The feasibility report of the project holds the advantages and flexibility of the project. This is divided into three sections:

- Economical Feasibility
- Technical Feasibility
- Behavioral Feasibility

2.2.1 ECONOMIC FEASIBILITY:

Economic analysis is the most frequently used method for evaluating the effectiveness of the candidate system. More commonly known as cost/benefit analysis, the procedure is to be determining the benefits and savings that are expected from a candidate and compare them with costs. If benefits outweigh costs, then the decision is made to design and implement the system.

A systems financial benefit must exceed the cost of developing that system. i.e. a new system being developed should be a good investment for the organization. Economic feasibility considers the following

- i. The cost to conduct a full system investigation.
- ii. The cost of hardware and software for the class of application.
- iii. The benefits in the form of reduced cost or fewer costly errors.
- iv. The cost if nothing changes (i.e. the proposed system is not developed).

The proposed “COLD STORAGE INFORMATION SYSTEM” is economically feasible because

- i. The system requires very less time factors.
- ii. The system will provide fast and efficient automated environment instead of slow and error prone manual system, thus reducing both time and man power spent in running the system.
- iii. The system will have GUI interface and very less user-training is required to learn it.
- iv. The system will provide service to view various information for proper managerial decision making.

2.2.2 TECHNICAL FEASIBILITY:

Technical feasibility centers around the existing computer system (Hardware and Software etc.) and to what extent it support the proposed addition. For example, if the current computer is operating at 80 percent capacity - an arbitrary ceiling - then running another application could overload the system or require additional Hardware. This involves financial considerations to accommodate technical enhancements. If the budget is a serious constraint, then the project is judged not feasible. In this project, all the necessary

cautions have been taken care to make it technically feasible. Using a key the display of text/object is very fast. Also, the tools, operating system and programming language used in this localization process is compatible with the existing one.

2.2.3 BEHAVIORAL FEASIBILITY:

People are inherently resistant to change, and computers have been known to facilitate change. An estimate should be made of how strong a reaction the user staff is likely to have toward the development of a computerized system. Therefore it is understandable that the introduction of a candidate system requires special efforts to educate and train the staff. The software that is being developed is user friendly and easy to learn. In this way, the developed software is truly efficient and can work on any circumstances, tradition, locales.

Behavioral study strives on ensuring that the equilibrium of the organization and status quo in the organization are not disturbed and changes are readily accepted by the users.

2.3 PROPOSED SYSTEM FUNCTIONALITY

The proposed system will be designed to support the following features:-

- The proposed system has a user friendly interface for porting of data to server.
- The proposed system provides the facility to pull the data from the server of the specified Supply order number and get the respective report.
- The proposed system provides the no replication of data.
- User can get the desired output according to their queries .This is an added advantage.

3 SYSTEM DESIGN

Designing is the most important phase of software development. It requires a careful planning and thinking on the part of the system designer. Designing software means to plan how the various parts of the software are going to achieve the desired goal. It should be done with utmost care because if the phase contains any error then that will affect the performance of the system, as a result it may take more processing time, more response time, extra coding workload etc.

Software design sits at the technical kernel of the software engineering process and is applied regardless of the software process model that is used. After the software requirements have been analyzed and specified, software design is the first of the three technical activities Designing, Coding and Testing that are required to build and verify the software. Each activity transforms information in such a manner that ultimately results in validated computer software.

3.1 DESIGN GOALS

The following goals were kept in mind while designing the system:

- ❑ ***Make system user-friendly.*** This was necessary so that system could be used efficiently and system could act as catalyst in achieving objectives.
- ❑ ***Make system compatible i.e.*** It should fit in the total integrated system. Future maintenance and enhancement must be less.
- ***Make the system compatible*** so that it could integrate other modules of system into itself.
- ***Make the system reliable, understandable and cost-effective.***

3.2 FUNCTIONAL FLOW OF THE SYSTEM

3.3 ENTITY RELATIONSHIP DIAGRAM

3.4 TABLE DESIGN

i. HireMaster

This table contains the information about the hirer of the cold store

FIELD NAME	FIELD TYPE	SIZE	REMARKS
id	int		NOT NULL
name	varchar	50	NOT NULL
address	varchar	MAX	NOT NULL
vill	varchar	50	NOT NULL
po	varchar	50	NOT NULL
dist	varchar	50	NOT NULL
block	varchar	50	NOT NULL
ph	varchar	50	NOT NULL

ii. LoadTrnsc

This table contains the information about loading details of a cold store

FIELD NAME	FIELD TYPE	SIZE	REMARKS
sr	int		NOT NULL
hier_id	varchar	50	NOT NULL
qty_load	varchar	50	NOT NULL
rent	varchar	50	NOT NULL
date	varchar	50	NOT NULL
cmdty	varchar	50	

iii. UnloadTrnsc

This table contains the information about unloading details of a cold store

FIELD NAME	FIELD TYPE	SIZE	REMARKS
sr	int		NOT NULL
hier_id	varchar	50	NOT NULL
qty_load	varchar	50	NOT NULL
rent	varchar	50	NOT NULL
date	varchar	50	NOT NULL
cmdty	varchar	50	

4. TECHNOLOGIES USED

4.1 HARDWARE

Processor	:	Intel® Core™ i3 Processor
RAM	:	512 MB
Hard Disk	:	20 GB

4.2 SOFTWARE

- Visual Studio .NET 2010
- Microsoft SQL Server 2008

A MICROSOFT SQL SERVER 2008

Features of SQL Server 2008

- SQL Server 2008 can be a data storage backend for *different varieties of data: XML, email, time/calendar, file, document, spatial, etc.* as well as perform *search, query, analysis, sharing, and synchronization* across all data types.
- Specialized date and time types and a *Spatial* data type for location-dependent data.
- Better support for unstructured and semi-structured data is provided using the new *FILESTREAM* data type, which can be used to reference any file stored on the file system.
- Structured data and metadata about the file is stored in SQL Server database, whereas the unstructured component is stored in the file system. Such files can be accessed both via Win32 file handling APIs as well as via SQL Server using T-SQL; doing the latter accesses the file data as a BLOB. Backing up and restoring the database backs up or restores the referenced files as well.

- SQL Server 2008 also natively supports hierarchical data, and includes T-SQL constructs to directly deal with them, without using recursive queries.
- The Full-text search functionality has been integrated with the database engine. According to a Microsoft technical article, this simplifies management and improves performance.
- Spatial data will be stored in two types. A "Flat Earth" (GEOMETRY or planar) data type represents geospatial data which has been projected from its native, spherical, coordinate system into a plane. A "Round Earth" data type (GEOGRAPHY) uses an ellipsoidal model in which the Earth is defined as a single continuous entity which does not suffer from the singularities such as the international dateline, poles, or map projection zone "edges". Approximately 70 methods are available to represent spatial operations for the Open Geospatial Consortium Simple Features for SQL, Version 1.1.
- SQL Server includes better compression features, which also helps in improving scalability. It enhanced the indexing algorithms and introduced the notion of filtered indexes.
- It also includes *Resource Governor* that allows reserving resources for certain users or workflows. It also includes capabilities for transparent encryption of data (TDE) as well as compression of backups.
- SQL Server 2008 supports the ADO.NET Entity Framework and the reporting tools, replication, and data definition will be built around the Entity Data Model.
- On the management side, SQL Server 2008 includes the *Declarative Management Framework* which allows configuring policies and constraints, on the entire database or certain tables, declaratively. The version of SQL Server Management Studio included with SQL Server 2008 supports IntelliSense for SQL queries against a SQL Server 2008 Database Engine. SQL Server 2008 also makes the databases available via Windows PowerShell providers and management functionality available as Cmdlets, so that the server and all the running instances can be managed from Windows PowerShell.

C#.NET

Introduction on .NET Framework

.NET is the framework for which we develop applications. It sits in between our application programs and operating system. Applications developed for .NET

run inside .NET and are controlled by .NET. It supports both Windows and web applications.

.NET provides an object oriented environment. It ensures safe execution of the code by performing required runtime validations. For example, it is never possible to access an element of an array outside the boundary. Similarly, it is not possible to a program to write into another programs area, etc. The runtime validations performed by .NET makes the entire environment robust.

Components of .NET

.NET framework has two main components. They are:

1. Common Language Runtime
2. .NET class library

Common Language Runtime

The Common Language Runtime (CLR) is the environment where all programs in .NET are run. It provides various services, like memory management and thread management. Programs that run in the CLR need not manage memory, as it is completely taken care of by the CLR. For example, when a program needs a block of memory, CLR provides the block and releases the block when program is done with the block.

All programs targeted to .NET are converted to MSIL (Microsoft Intermediate Language). MSIL is the output of language compilers in .NET . MSIL is then converted to native code by JIT (Just-in Time Compiler) of the CLR and then native code is run by CLR.

As every program is ultimately converted to MSIL in .NET, the choice of language is pure personal. A program written in VB.NET and a program written in C# are both converted to MSIL. Then MSIL is converted to native code and run. So, whether you write program in C# or VB.NET at the end it is MSIL all that you get.

MSIL in .NET is same as *Bytecode* in concept. CLR is same as JVM (Java virtual machine).

.NET Class Library

.NET comes with thousands of classes to perform all important and not-so-important operations. Its library is completely object oriented, providing around 5000 classes to perform just about everything.

Visual C# .NET (C#.NET) is an object-oriented computer language that can be viewed as an evolution of Microsoft's Visual C# (C#) implemented on the Microsoft .NET framework. The great majority of C#.NET developers use Visual Studio .NET as their integrated development environment (IDE).

Visual C# .NET provides the easiest, most productive language and tool for rapidly building Windows and Web applications. Visual Basic .NET comes with enhanced visual designers, increased application performance, and a powerful integrated development environment (IDE). It also supports creation of applications for wireless, Internet-enabled hand-held devices. The following are the features of Visual C# .NET with .NET Framework 4.0 and Visual C# .NET 2010 with .NET Framework 4.0

SOME FEATURES OF C#.NET:

Powerful Windows-based Applications

Visual C# .NET comes with features such as a powerful new forms designer, an in-place menu editor, and automatic control anchoring and docking. Visual Basic .NET delivers new productivity features for building more robust applications easily and quickly. With an improved integrated development environment (IDE) and a significantly reduced startup time, Visual C# .NET offers fast, automatic formatting of code as you type, improved IntelliSense, an enhanced object browser and XML designer, and much more.

Building Web-based Applications

With C# .NET we can create Web applications using the shared Web Forms Designer and the familiar "drag and drop" feature. You can double-click and write code to respond to events. Visual C# .NET 2010 comes with an enhanced HTML Editor for working with complex Web pages. We can also use IntelliSense technology and tag completion, or choose the WYSIWYG editor for visual authoring of interactive Web applications.

Simplified Deployment

With Visual C# .NET we can build applications more rapidly and deploy and maintain them with efficiency.

Powerful, Flexible, Simplified Data Access

You can tackle any data access scenario easily with ADO.NET and ADO data access. The flexibility of ADO.NET enables data binding to any database, as well as classes, collections, and arrays, and provides true XML representation of data. Seamless access to ADO enables simple data access for connected data binding scenarios. Using ADO.NET, Visual C# .NET can gain high-speed access to MS SQL Server, Oracle, DB2, Microsoft Access, and more.

Improved Coding

You can code faster and more effectively. A multitude of enhancements to the code editor, including enhanced IntelliSense, smart listing of code for greater readability and a background compiler for real-time notification of syntax errors transforms into a rapid application development (RAD) coding machine.

Direct Access to the Platform

Visual Basic developers can have full access to the capabilities available in .NET Framework 4.0 Developers can easily program system services including the event log, performance counters and file system. The new Windows Service project template enables to build real Microsoft Windows NT Services. Programming against Windows Services and creating new Windows Services requires Visual Studio 2010 Professional, or higher.

5. TESTING AND DEBUGGING

Software testing is a critical element of the ultimate review of specification design and coding. Testing of software leads to the uncovering of errors in the software functional and performance requirements are met. Testing also provides a good indication of software reliability and software quality as a whole. The result of different phases of testing are evaluated and then compared with the expected results. If the errors are uncovered they are debugged and corrected. A strategy approach to software testing has the generic characteristics:

- ❖ Testing begins at the module level and works “outwards” towards the integration of the entire computer based system.
- ❖ Different testing techniques are appropriate at different points of time.
- ❖ Testing and debugging are different activities, but debugging must be accommodated in the testing strategy

5.1 GOALS AND OBJECTIVES

“Testing is a process of executing a program with the intent of finding an error”. A good test case is one that has a probability of finding an as yet undiscovered error. A successful test is one that uncovers an as yet undiscovered error. Our Objective is to design test processes that systematically uncover different classes of errors and do so with minimum amount of time and effort.

5.2 STATEMENT OF SCOPE

A description of the scope of the software testing is developed. All the features to be tested are noted as follows. The basic principles that guides software testing are,

- ❖ All test cases should be traceable top customer requirements. The most severe defects from the customer’s point of view are those that cause the program to fail to meet its requirements.
- ❖ Test case should be planned long before testing begins. Testing plan can begin as soon as the requirement model is complete. Detailed definition of the test cases can begin as soon as the design is solidified. Therefore, the entire test can be planned before any code has been generated.

- ❖ Testing should begin “in the small” and progress towards “in the large”. The first test planned and executed generally focus on the individual modules. As testing progresses testing shifts focus in an attempt to find errors in integrating clusters of modules and ultimately in the entire system

5.3. TEST CASE

Before the project is released, it has to pass through a test cases suit, so that the required functionality is met and previous functionality of the system is also not broken to do this, there is an existing test cases which checks for the previous functionality. New test cases are prepared and added to this existing test suit to check for the added functionality.

Test cases describe an input description and compare the observed output with expected output to know the outcome of the test case. If it is different, then, there is a failure and it must be identified.

Test Cases for different field used.

name: should be a character value till length 50

Test Cases	INPUT (a)	Expected Output
1	123	Invalid Input
2	Cumins	Valid Name
3	Asdfghjklqwertyuiop zxcvbnmasdfghjpoiuyttqwert hello	Invalid Input(out of range)
4	-12	Invalid input

sr: should be a numeric value

Test Cases	INPUT (a)	Expected Output
1	123	Valid Number
2	cumins	Invalid Input

A pictorial representation of this can be shown as follows.

5.5 DEBUGGING

Debugging occurs as a consequence of successful testing i.e. when a test case uncovers an error, debugging is the process that results in identifying the location of error and the removal of error. The poorly understood mental process that connects a symptom to cause is debugging. This process will always have one of the two outcomes:

- ◆ The cause will be found, corrected and then removed or
- ◆ The cause will not be found. In the latter case the person performing debugging may suspect a cause, design a test case to help validate his suspicion, and then work towards the correction of errors in the interactive fashion.

Following three approaches of debugging were used:

- ◆ Debugging by Induction
- ◆ Debugging by Deduction
- ◆ Backtracking

6. IMPLEMENTATION

Once the system was tested, the implementation phase started. A crucial phase in the system development life cycle is successful implementation of new system design. Implementations simply mean converting new system design into operation. This is the moment of truth the first question that strikes in every one's mind that whether the system will be able to give all the desires results as expected from system. The implementation phase is concerned with user training and file conversion.

The term implementation has different meanings, ranging from the conversion of a basic application to a complete replacement of computer system Implementation is used here to mean the process of converting a new or revised system design into an operational one. Conversion is one aspect of implementation. The other aspects are the post implementation review and software maintenance. There are three types of implementation:

- Implementation of a computer system to replace a manual system
- Implementation of a new computer system to replace an existing one.
- Implementation of a modified application to replace an existing one.

6.1MODULE DIAGRAM

7. SCOPE AND LIMITATION

SCOPE OF THE PROPOSED SYSTEM:

The “Cold Storage Information System” software is being developed as an accurate and efficient system for the user. In this system the record of the each request details are preserved along with their transaction related to them. The system is also made secured as all the updation and transaction can be done by the authorized person.

LIMITATION OF THE PROPOSED SYSTEM:

- Database used is SQL Server and every database have a stack limit.
- Manual Errors at the time of entering the data can't be check, only the validation required w.r.t proposed system is checked.

8. CONCLUSION

The objective of this project was to build a program for maintaining the details of all cold storage transactions .The system developed is able to meet all the basic requirements. It will provide the facility to the user so that they can keep tracks of all the stocks being supplied. The management of the Inventory will be also benefited by the proposed system, as it will automate the whole supply procedure, which will reduce the workload. The security of the system is also one of the prime concerns.

There is always a room for improvement in any software, however efficient the system may be. The important thing is that the system should be flexible enough for future modifications. The system has been factored into different modules to make system adapt to the further changes. Every effort has been made to cover all user requirements and make it user friendly.

- ❑ **Goal achieved:** The System is able provide the interface to the user so that he can replicate his desired data. .
- ❑ **User friendliness:** Though the most part of the system is supposed to act in the background, efforts have been made to make the foreground interaction with user as smooth as possible. Also the integration of the system with Cold Storage Information System project has been kept in mind throughout the development phase.

9. USER MANUAL & SCREEN SHOTS

9.1. USER MANUAL

In the system there are mainly five user interface using which a user is able to

- Login
- Hirer entry
- Loading
- Unloading
- View report

LOGIN:

This allows the user to enter into the system. User has to enter User ID and Password along with captcha. If invalid User ID or Password or captcha is entered then alert message of invalid data is flashed.

MENU INTERFACE:

If User ID and Password both are correct then user enters into Menu Interface.

This Interface contains Menus for various operations to be performed .These processes are:

- Hirer: - For entering cold store 'hirer' details in the database.
- Loading: - For recording loading details of cold storage.
- Unloading: - For recording loading details of cold storage.
- Report: - To view the Output/Store transactions.

SUBMENUS:

Hirer

Steps:

- 1) Enter Name of the cold storage.
- 2) Enter Address of the cold storage.
- 3) Select District from the drop-down menu
- 4) Select Block from the drop-down menu
- 5) Enter Village of the cold storage.
- 6) Enter P.O. of the cold storage.
- 7) Enter Phone no. of the cold storage.

Click SUBMIT to enter in the database or RESET to clear the fields

Loading

Steps:

- 1) A unique SR no is assigned
- 2) Select Hirer name from dropdown menu
- 3) Transaction date is generated as per system
- 4) Store details and store rent is populated in respective textboxes
- 5) Select Commodity from dropdown menu
- 6) Select No. of bags/sacks from dropdown menu

Click LOAD to enter loading stock details in the database

Unloading

Steps:

- 1) Enter SR no
- 2) Click PROCEED, if transaction against the entered SR takes place then
- 3) Select Hirer name from dropdown menu
- 4) Transaction date is generated as per system
- 5) Store details and store rent is populated in respective textboxes

- 6) Select Commodity from dropdown menu
- 7) Select No. of bags/sacks from dropdown menu

Click UNLOAD to enter loading stock details in the database

Report

Steps:

- 1) Select Hirer name.

If any transactions took place then complete loading and unloading details report is displayed

Click LOGOUT to complete the operations.

9.2 SCREEN SHOTS

Main User Interface of Cold Storage Information System

Directorate of Agricultural Marketing

Government of West Bengal

Cold Storage Stock Information

Welcome admin [Logout](#) Today : 11 July 2013

[Hirer](#)[Loading](#)[Unloading](#)[View Report](#)

Designed & developed by

Admin page after secured log-in

Directorate of Agricultural Marketing

Government of West Bengal
Cold Storage Stock Information

Welcome admin [Logout](#) Today : 11 July 2013

[Hirer](#)[Loading](#)[Unloading](#)[Report](#)

Hier Entry Form

Name

Village

Address

P.O.

District

Block

Ph. No.

[Submit](#)[Reset](#)

Designed & developed by

Hirer entry page, details of cold store hirer is entered

Directorate of Agricultural Marketing

Government of West Bengal
Cold Storage Stock Information

Welcome admin [Logout](#) Today : 11 July 2013

[Hire](#)[Loading](#)[Unloading](#)[Report](#)

Loading Details

SR No**Name****Transaction Date****Name Bireswar Cold Storage**

Bireswar Cold Storage, VIII & P.O. Kotalpur Bankura
Village-Kotalpur PO-Kotalpur Bankura **Block1** Contact no +91-123456789

Commodity**No. of bags/sacks****Rent ₹****Quantity of Load**

in ql.

[Load](#)[Back](#)

Total ₹ 1000

Designed & developed by

Stock loading page, where transaction details of loading in a store is entered

Directorate of Agricultural Marketing

Government of West Bengal
Cold Storage Stock Information

Welcome admin [Logout](#) Today : 11 July 2013

[Hirer](#)[Loading](#)[Unloading](#)[Report](#)

Unloading Details

SR No

[Proceed](#)

Transaction Date

11-07-2013

Name

Commodity

Number of bags/sacks

Rent ₹

Quantity of Load

in ql.

[Unload](#)[Back](#)

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Directorate of Agricultural Marketing

Government of West Bengal
Cold Storage Stock Information

Welcome admin [Logout](#) Today : 11 July 2013

[Hirer](#)[Loading](#)[Unloading](#)[View Report](#)

Hirer name

Transaction details of **Bireswar Cold Storage** Dist- Bankura **Block1**

sr	qty_load	date	cmdty
1	5	04-07-2013	Potato
3	10	04-07-2013	Potato

sr	qty_unload	date	cmdty
1	5	04-07-2013	Potato

Designed & developed by

Transaction report page, where entire transactions of a store can be viewed that occurred.

10 . ANNEXURE

10.2 BIBLIOGRAPHY

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