AN
INTERNSHIP REPORT

ON

WATER SUPPLY MANAGEMENT SYSTEM PROJECT

BY

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1. INTRODUCTION

1.1 OVERVIEW OF THE PROJECT

The project entitled as **"WATER SUPPLY MANAGEMENT SYSTEM"** for Mineral Water Supply agency. The maintenance of each and every detail manually is a tough and tedious process. The main objective of this project is to computerize the activities performed in the concern. In this system viewing and updating of regular customer details, water bottle supplier details, stock details, sales details and employee details is easy because it reduces manual work.

This system is helpful in maintaining the record of customers. This project is developed in order to help the management to keep their overall records such as staff details and area office details etc., the details are maintained by the secured login.

The administrator can view all the details and the details can also be updated. Thus the project helps the mineral water management to maintain their records. It is developed using **Visual Basic 6.0** and **Microsoft Access 2010**.

The modules of this project are,

- Customer Details
- Employee Details
- Stock Details
- Sales Details
- Supplier Details

MODULE DESCRIPTION

CUSTOMER MODULE

This module is used to maintain the details regarding the customers of the water plant.

EMPLOYEE MODULE

This module is used to maintain the details regarding the employees who work in the water plant.

STOCK MODULE

This module is used to maintain the details regarding the water plant stock present in the warehouse.

SALES MODULE

This module is used to maintain the details regarding the sales occurred during every day and year of the water plants.

SUPPLIER DETAILS

This module is used to maintain the details regarding the water plant suppliers.

2. SYSTEM ANALYSIS

System analysis is a process of gathering and interpreting facts, diagnosing problems and the information to recommend improvements on the system. It is a problem solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minutes detail and analyzed. The system analyst plays the role of the interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the input to the system are identified. The outputs from the organizations are traced to the various processes. System analysis is concerned with becoming aware of the problem, identifying the relevant and decisional variables, analyzing and synthesizing the various factors and determining an optimal or at least a satisfactory solution or program of action.

2.1 EXISTING SYSTEM

In the existing system, all the operations are done only manually and hence take many efforts in the process of information passing. Since all the details have to be maintain to manage the system each and every records like customer details, courier details, and shipping details, return details and payment details have to be maintained. In the existing system though making entries is easy but recollecting information about courier or customer details is a tough task. Hence a new system has to be developed to maintain all the data.

2.1.1 DRAWBACKS OF THE EXISTING SYSTEM

- Manual record is maintained.
- Finding of specific information is a tedious process.
- Daily transactions will not be updated.
- Consumes more time.
- Requires large man power.
- Records will not be safe and secure.

To avoid all these limitations and make the working more accurately the system needs to be computerized.

2.2 PROPOSED SYSTEM

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper security and reduces the manual work. The new system can maintain all the data easily like customer details, employee details, stock details, sales details, etc,. Retrieval of any information from the system is very quick and easy process.

2.2.1 ADVANTAGES OF THE PROPOSED SYSTEM

The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features

- All the details are stored according to their id in every module for easy retrieval.
- Computerized maintenance of records.
- Daily transactions and payment details are updated daily.
- Records are safe and secure.
- Consumes very small amount of time.
- Requires low man power.
- Any information can be fetched easily.
- If any water bottle product had been damaged or not delivered on time or any other reasons, the reason for bottle return will be updated.

2.3 SYSTEM SPECIFICATION

2.3.1 HARDWARE REQUIREMENTS

Processor	:	Intel Pentium Dual core
Hard disk	:	40 GB
CD drive	:	680 MB
Printer	:	Laser Printer (Canon)
Ram	:	256 MB
Mouse	:	Logitech
Monitor	:	17” color monitor
Keyboard	:	110 keys

2.3.2 SOFTWARE REQUIREMENTS

Operating system	:	Windows 7
Front end	:	Visual Basic 6.0
Back end	:	Microsoft Access 2010

2.3.3 ABOUT THE SOFTWARE

ABOUT THE FRONT END

Visual Basic

Visual Basic is an ideal programming language for developing sophisticated professional applications in Microsoft windows. It makes use of the Graphical User Interface for creating robust and powerful applications. The Graphical User Interface uses illustrations to enable users to interact with the applications. This feature makes it easier to comprehend things in a quicker and easier way. Programmers everywhere use this dynamic and efficient tool to create professional quality applications for the windows desktop. With its sleek approach to development, Visual Basic inspires creativity, resulting in programs that look better and work more reliably.

MARVEL functionality provided Visual Basic

Modular Programming – Visual Basic allows modularization through user-defined sub routines and functions. The Visual environment forces a certain amount of modularity. The VBX files provided by the various vendors allow easy access in hung pieces of functionality, with little coding.

Automated Interfaces – Visual Basic supports automated interfaces through argument passing, which allow subroutines and functions to be called from another program.

Rethinking - Visual Basic does for programmers what Windows does for users. It makes their job easier and less tedious. The visual environment allows the programmer to focus much more on the problem at hand rather than the structure of interfaces.

Visual Development Environment – Visual Basic is one of the easiest visual environments to use. All of its controls work in a consistent way. Their properties and events can be easily selected from a list box. It does not force a programmer to remember much more than the basics.

Extensibility – Visual Basic has by far the most complete extensibility of any product on the market. VBX files are being designed and written by a multitude of third-party vendors to interface their own products. While each of these VBX files performs dramatically different functions, all are implemented and used by Visual Basic Programmer in the same way.

Linking – Visual Basic supports all the necessary forms of DDE to link whole applications modularly into a single application. Visual Basic also supports OLE as a client, which allows modular use of data from another program.

Programming Using Visual Basic

Coding in GUI environment is quite a transition from traditional linear programming methods, where the user is guided through a linear path of execution and is limited to a small set of operations. In a GUI environment, the number of options open to the user is much greater, allowing more freedom to the user. Features such as easier comprehension, user-friendliness, faster application development and many other aspects make Visual Basic an interesting tool to work with. Using Visual Basic, we can create powerful, full-featured applications that exploit the key features of Microsoft Windows, including Multiple Document Interfaces.

Visual Basic is not exclusively designed for technical experts. It meets the need of anyone, programmer or not, who has the creative impetus to design a new application. We could still use the tools of VB to shape our program. Working in VB is much more easier than using any other Windows applications.

Program development in VB is a three-step process. Only the final step-coding-requires the expertise and experience of a programmer. The first two steps can be carried out by anyone who has an idea for a program – small or large, simple or complex, single-purpose or multifaceted. The three steps are as follows:

- Designing the appearance of the programs
- Assigning properties to the objectives of the program
- Writing the code to carry out the specific tasks

Multiple Document Interfaces

The Multiple Document Interfaces (MDI) allows a developer to create applications that maintain forms within a single container form. Applications such as Windows Program Manager, Windows File Manager etc., have MDI's. An MDI application allows the user to display multiple documents at the same time, with each document displayed in its own window. Document windows are contained in parent window, which provides a workspace for all windows in the application.

ABOUT THE BACK END

MICROSOFT ACCESS

A database is a collection of data and object related to particular purpose. MS Access is a Relational Database Management System [RDBMS]. A database is a program for storing and manipulating data.

Microsoft Office Access, previously known as Microsoft Access, is a database management system from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface and software-development tools. It is a member of the Microsoft Office suite of applications, included in the Professional and higher editions or sold separately.

Software developers and data architects can use Microsoft Access to develop application software, and "power users" can use it to build software applications. Like other Office applications, Access is supported by Visual Basic for Applications, an object-oriented

programming language that can reference a variety of objects including DAO (Data Access Objects), ActiveX Data Objects, and many other ActiveX components. Visual objects used in forms and reports expose their methods and properties in the VBA programming environment, and VBA code modules may declare and call Windows operating-system functions.

MS Access stores data in its own format based on the Access Jet Database Engine. It can also import or link directly to data stored in other applications and databases.

Entity

This is to describe the conceptual data units or objects represented rectangles.

Relationship

It represents real-world associates among one or more entities. These are represented as diamonds.

Uniqueness and keys

In MS-Access, the Master Database (MDB) file contains number of tables. Each table contains rows and columns. The relational model dictates that every row in a database must be unique.

Primary key

A primary key is made up of one or more attributes whose value uniquely identified each record in the table. In a relationship, a primary key is used to refer to specific records in a table. A primary key is called a foreign key, when it is referred from another table.

Data integrity

Enforcing data integrity involves presenting the consistency and correctness of data stored in the database by,

- Validating the contents of individual fields.
- Validating data in one table with respect to one another.

Data types in Ms Access

The following are the data types are used in MS Access,

- Text

- Currency
- Data/time
- Logical
- OLE Object Picture

Queries

Query is used to extract information from the table based on performing certain conditions. This is mainly used for reports. In this query we can include more than one table at a time.

Forms

A form is used to get a record from user in specific format. Using forms we can display records in specific manner. In forms we can set layout properties and data properties. Using forms we can design the fields in text box and check box for selecting a list of options and radio or push buttons used for selecting a single option at a time.

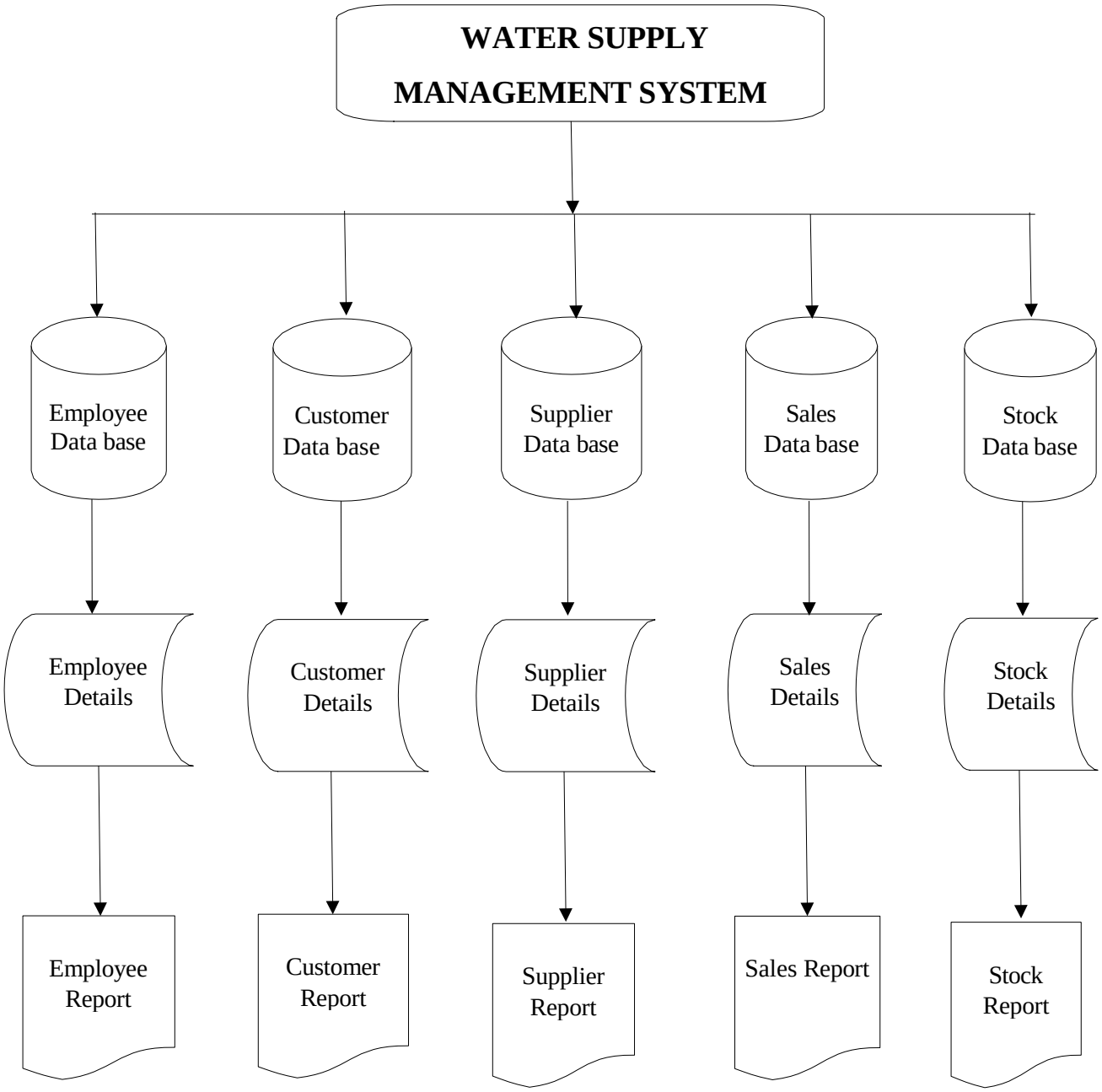
Reports

In MS Access, the records in database are prepared for reports. Each record is set in specific place. In the reports, we can include needed fields only. After viewing the reports, the records can be printed in a specific manner.

3. SYSTEM DESIGN

3.1 DESIGN NOTATIONS

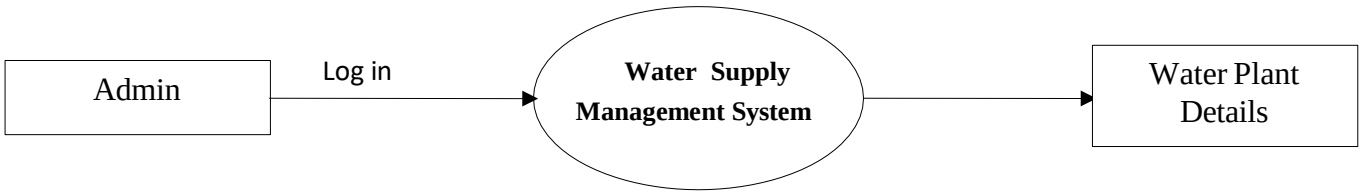
3.1.1 SYSTEM FLOW DIAGRAM



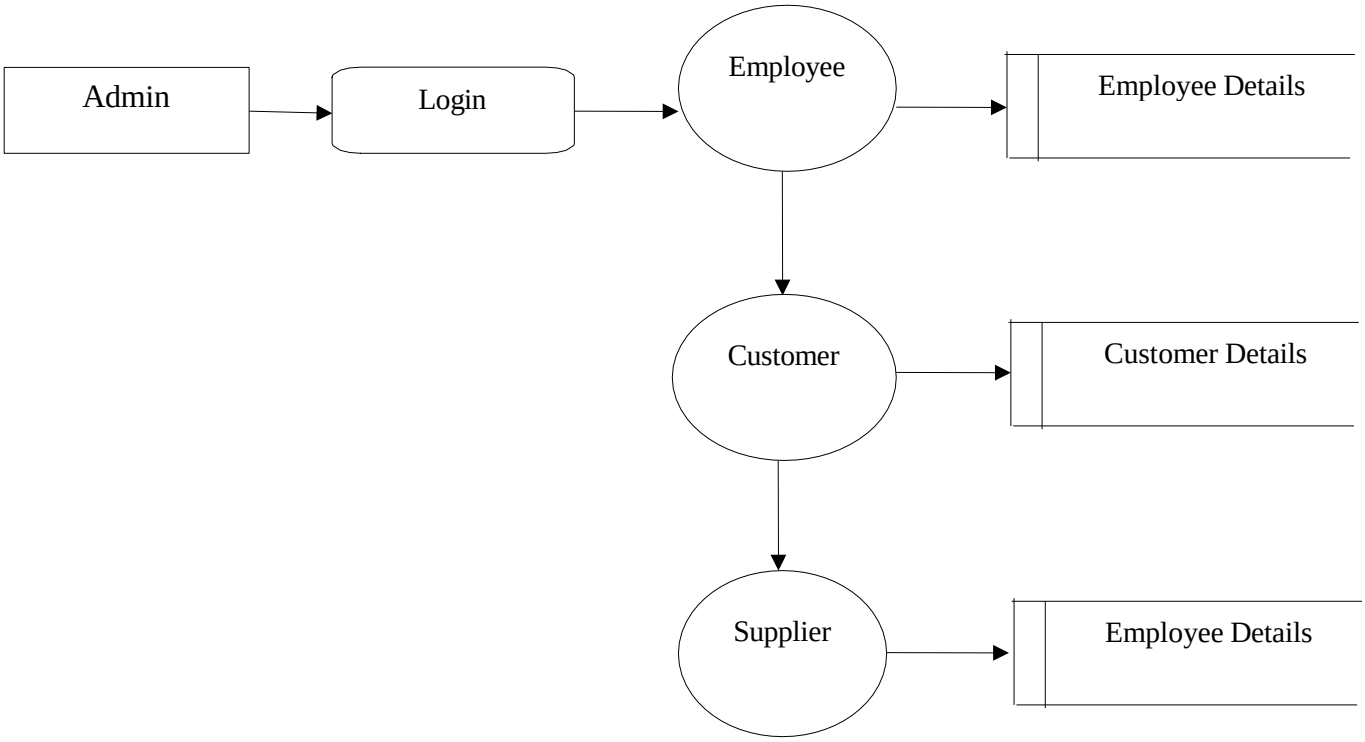
3.1.2 DATA FLOW DIAGRAM

The dataflow diagram (DFD) is one of the most important tools used by system analysts. Data Flow diagrams are made up of a number symbols, which represent system components. Most dataflow modelling methods use four kinds of symbols. These symbols are used to represent four kind of the system components processes, stores ,data flows and external entities Circles in DFD represent processes, data flow represented by a thin line in the DFD and each data store has a unique name and represented by open rectangles and square are rectangle represents external entities.

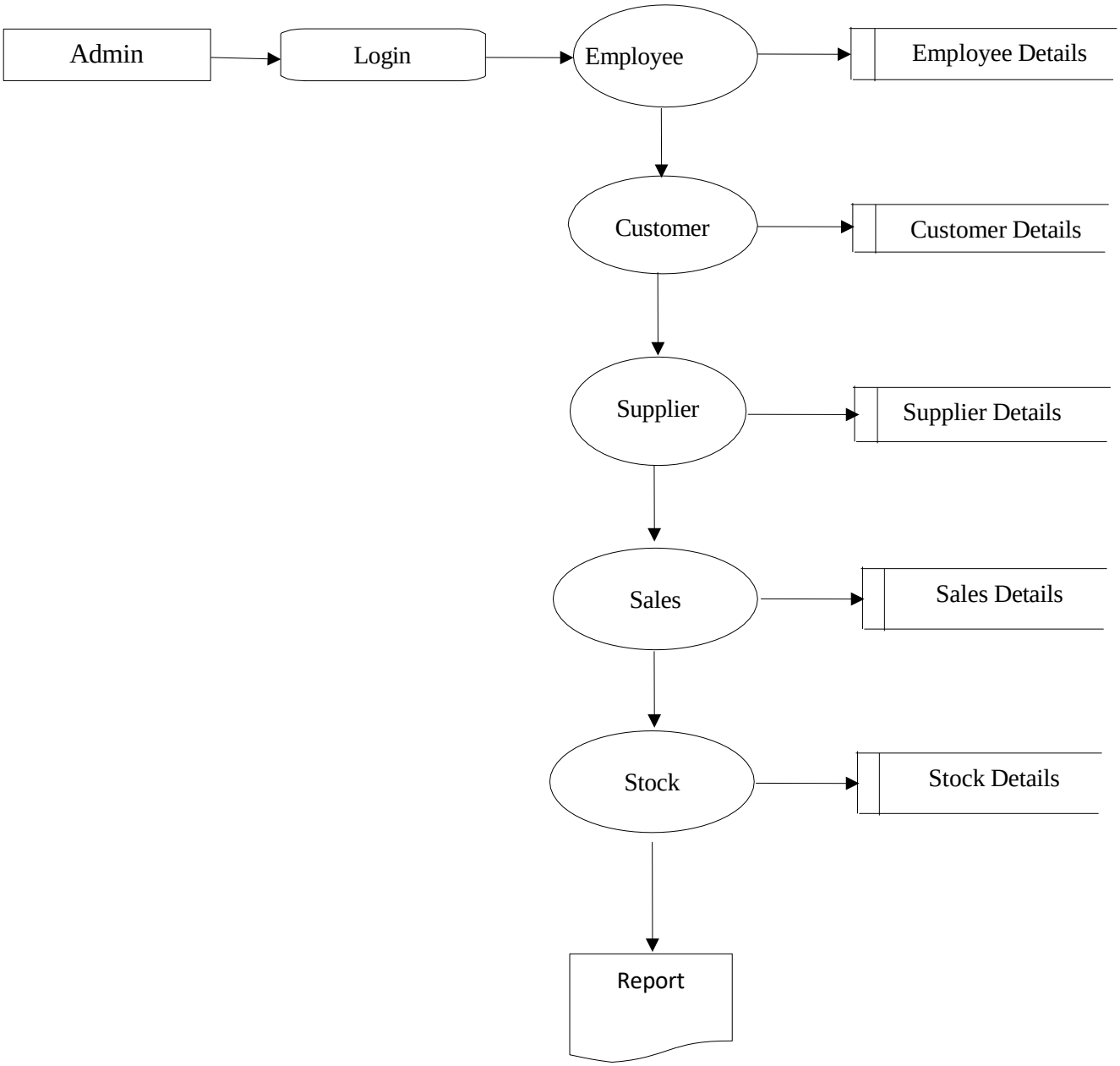
Level 0



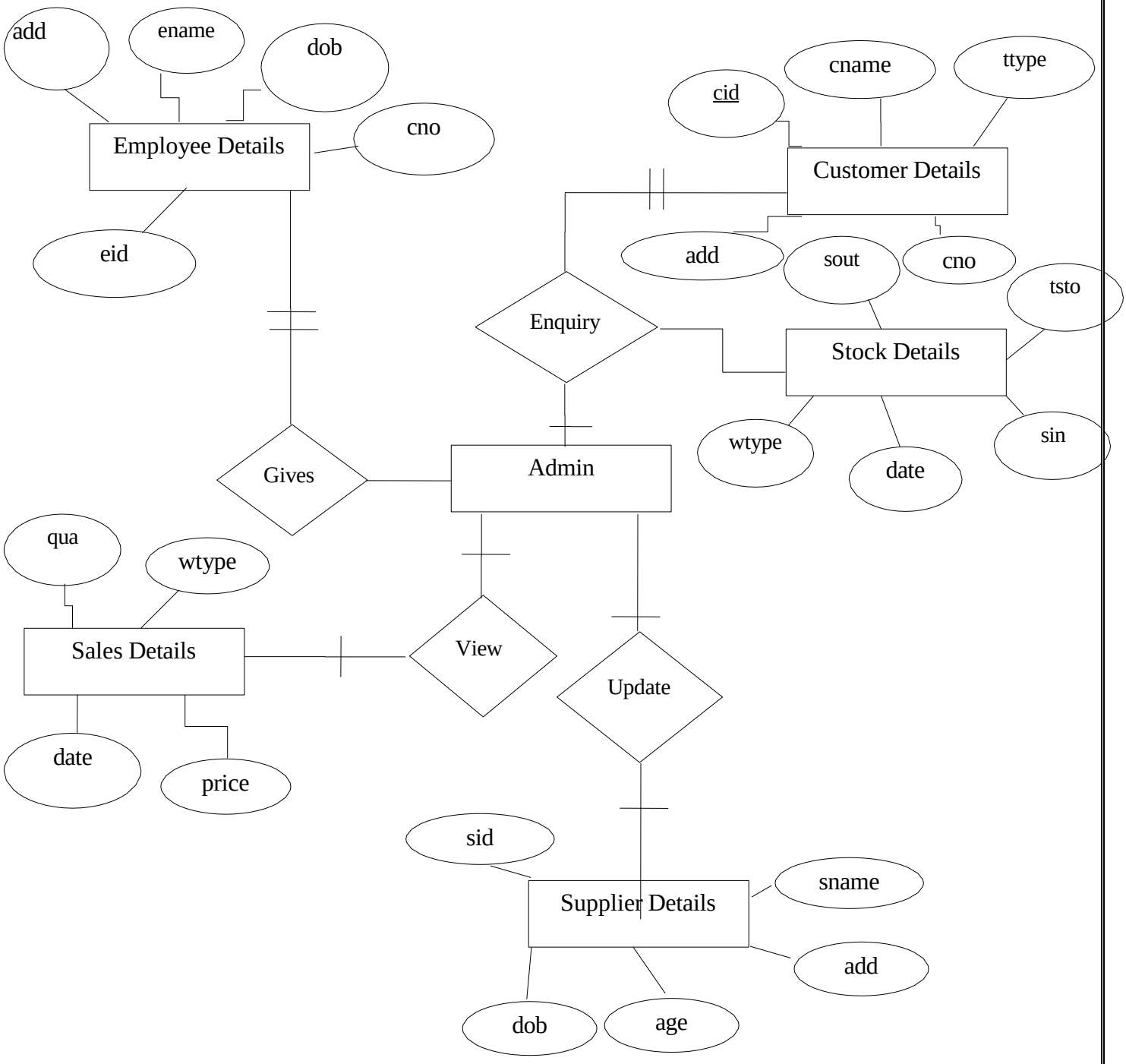
Level 1


Admin
Login
Employee
Employee Details
Customer
Customer Details
Supplier
Employee Details

Level 2


Admin
Login
Employee
Employee Details
Customer
Customer Details
Supplier
Supplier Details
Sales
Sales Details
Stock
Stock Details
Report

3.1.3 ENTITY RELATIONSHIP DIAGRAM



3.2 DESIGN PROCESS

Design should improve the system's relationship with the user and help in decision-making. It is primarily required to communicate the user's input from client side to the server where a program will be run to process the input. Once the output requirements are determined, the system design can decide what to include in the system.

The most creative and challenging phase of the system life cycle is system design. System design is a process of developing specifications for a candidate system that meet the criteria established in the system analysis. Design requires a full understanding of the problem and hence there is need for analysis of requirement and resources.

3.2.1 INPUT DESIGN

Data Structuring is defined through a process called normalization. Data are grouped in the simplest way, so that later changes can be made with a minimum impact on the data structure. The normalization of these entities into attributes linked by common data elements to form relationships improves the effectiveness of database management system.

Mineral Water Distribution System considered the following facts while designing the input. They are

- Types of inputs user going to enter.
- User may do an error while entering the input data or values.
- Automatic validation process to the input data should undergo
- Make user easy to understand what to enter.
- User can fail to spot one or two fields without entering the data in that fields.

A good input design should have the following qualities above mentioned. Here in Mineral Water Distribution System all these qualities are included while designing the input forms. Mineral Water Distribution System has the following input forms they are

- Customer Details
- Employee Details
- Supplier Details
- Stock Details

- Sales Details

Customer Details [fig:3]

This module is used to maintain the details regarding the customers of the water plant.

Employee Details [fig:4]

This module is used to maintain the details regarding the employees who work in the water plant.

Supplier Details [fig:5]

This module is used to maintain the details regarding the water plant suppliers.

Stock Details [fig:8]

This module is used to maintain the details regarding the water plant stock present in the warehouse.

Sales Details [fig:6]

This module is used to maintain the details regarding the sales occurred during every day/week and year of the water plants.

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3.2.2 OUTPUT DESIGN

The important objective of a system is to generate reports based on queries; outputs form computer systems are primarily to communicate the result of processing to the users. The output design should be well formatted, so that it contains all the required information and should be well formatted and avoiding all complexity in getting information resulting from processing.

The output design was done so that the result of processing could be communicated to the users. The accuracy requirement of the data was also defined in the output.

REPORTS

The Data Report is known as an ActiveX Designer, meaning that it is a specialized ActiveX object that integrates into the VB environment. Data report enable one to easily

display a print preview screen, with print and export buttons. To add information to the report, first draw the report control in the appropriate section of the report and then set its properties, just like any other control. The Data Report includes some predefined placeholders, which allow including several dynamic elements on a report.

Several screens can perform it. Computer output is most important and direct source of information to the user. Efficient, intelligible output design should improve the system's relationship with the user and help in decision making. A major form of output is the hard copy from the printer.

The various output screens in the project are

Customer Details Report [fig:9]

This module is used to maintain the details regarding the customers report of the water plant.

Employee Details Report [fig:10]

This module is used to maintain the details regarding the employees report who work in the water plant.

Supplier Details Report [fig:11]

This module is used to maintain the details regarding the water plant suppliers report.

Stock Details Report [fig:12]

This module is used to maintain the details regarding the water plant stock report.

Sales Details Report [fig:13]

This module is used to maintain the details regarding the sales occurred during every day/week and year of the water plants.

3.2.3 DATABASE DESIGN

The database design involves creation of tables. Tables are represented in physical database as stored files. They have their own independent existence. A table consists of rows and columns. Each column corresponds to a piece of information called field. A set of fields constitutes a record. The record contains the entire information specific to a particular item.

TABLE DESIGN

Table Name: Customer Details

Field Name	**Data type**	**Size**	**Description**
cid	Number	10	Customer ID
cname	Text	20	Customer Name
Gen	Text	10	Gender of the Customer
ttype	Text	10	Transaction Type
Add	Text	50	Address of the Customer
mno	Number	10	Mobile Number

Table Name: Employee Details

Field Name	**Data type**	**Size**	**Description**
Eid	Number	10	Employee ID
ename	Text	10	Employee Name
Age	Number	15	Age of the Employee
Doj	Date/ Time	10	Date of Joining
Qua	Text	10	Qualification of the Employee
Sal	Number	10	Salary of the Employee
Add	Text	50	Address of the Employee
mno	Number	10	Mobile Number

Table Name: Stock Details

Field Name	Data type	Size	Description
wtype	Text	20	Water Bottle Type
date	Date/Time	10	Date of the Product Manufactured
Add	Text	20	Address of the Ware House
Sin	Number	10	Stock Present inside the Ware House
sout	Number	10	Stock Send out from the Ware House
Tst	Number	10	Total Stock present in the Ware House
size	Text	10	Size of the Water Bottle

Table Name: Sales Details

Field Name	Data type	Size	Description
Sid	Number	10	Sales ID
wtype	Text	15	Water Bottle Type
cid	Number	15	Customer ID
size	Text	10	Size of the Water Bottle
Qua	Number	10	Quantity of the Water Bottle
price	Number	10	Price of the Water Bottle
Pay	Number	10	Total Payment for the Water Bottle
Date	Date/Time	10	Date of the Sales

Table Name: Supplier Details

Field Name	Data type	Size	Description
Sid	Number	10	Supplier ID
Sname	Text	10	Supplier Name
Age	Number	15	Age of the Supplier
Doj	Date/ Time	10	Date of Joining
Qua	Text	10	Qualification of the Supplier
Dis	Number	10	Distric of the Supplier
Noc	Text	20	Number of Customers
Mno	Number	10	Mobile Number

4. SYSTEM TESTING AND IMPLEMENTATION

4.1 SYSTEM TESTING

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. Testing is a process of executing a program with the intent of finding errors. The user tests the developed system and change is made according to their needs. The testing phase involves the testing of developed system using various kinds of data.

The term implementation has different meanings, ranging from the basic application, to a complete replacement of a computer system. Implementation used here is to mean the process of converting a new system design into an operational one. Conversion is one aspect of implementation.

SYSTEM DEVELOPMENT

Maintenance is the engine of the system development. It holds the software industry captive, trying up programming resources. Analysts and programmers spent far more time problems, than they do writing them. Maintenance is not as rewarding and exciting as developing a system. Software maintenance is the process of modifying a software or component after its delivery in order to correct faults, improve the performance and other attributes, or to adapt to the changed element.

Maintenance covers a wide range of activities including correcting the coding and design errors, updating the documentation and test data and upgrading the user support. An aging process calls for periodic maintenance of hardware and software. Maintenance is always necessary to keep the software useful and reusable.

4.1.1 TESTING METHODOLOGIES

After each program passes its own test, it is linkage to the other programs is scrutinized with a program integration test. This ensures that the program work together as intended. Before the implementation phase the designed system should be tested with raw data to ensure that all modules of the system work correctly and satisfactorily. If some bug is found they can be removed before the implementation phase. The testing has the four kind of testing that is as follows.

UNIT TESTING

In unit testing, each program unit is tested individually. So any errors in a unit are debugged. Sample data is given for unit testing. The testing was carried out during programming stage itself. In this testing each and every module of the program is tested individually. It also checked if any text box is empty. This condition was tested successfully by pressing enter key without entering any character. During unit testing, the tester locates the errors locates errors in coding and logic that are contained within a single module alone. This condition was tested successfully by pressing enter key without entering any character.

INTEGRATION TESTING

In this testing all modules of the application are combined together and test running is made. This ensures the co-ordinate between different modules of the program. All the modules are combined and tested as whole. Here correction is difficult because the isolation of causes is complicated by the vast expanse of the entire program. Thus in the integration testing step, all the uncovered for the next testing steps.

VALIDATION TESTING

Validation tests can be defined in many ways, but a simple definition is that validation succeeds when software functions in a manner that can be reasonably expected by client. The rough data is given to all the application modules where they contain the table to enter the data. It is then tested with the real data and an error in the application is observed. This testing is done until all the errors are corrected. In validation testing the user give the input are tested as valid or invalid before it in stored in the database. In this project the patient name should be entered only in alphabets. If the user types other than the alphabets the error message will be displayed.

OUTPUT TESTING

After performing the validation tests the next step is the output testing of the proposed system. No system is useful, if it does not produce the required output format in the specified format. Considering the format required by the user tests outputs generated or displayed by the system under consideration. Here all, the output format is Data. The output format on the screen is found to be the user needs. For the hard copy also the output as specified requirements by user. Hence output comes out as specified requirements by user. Hence output testing does not result in any corrections in the system.

ACCEPTANCE TESTING

The acceptance testing is the final stage of testing. The user does this. The development is given to the user and tests the system with live data. The various possibilities of the data are entered and response from the system is tested. Once the client signs off the acceptance testing, and then we can successfully implement the system. It is performed to ensure that they are satisfied with their performance.

4.2 SYSTEM IMPLEMENTATION

The implementation view of software requirements presents the real world manifestation of processing function and information structures. In some case, a physical representation is developed as the first step in software design.

The analyst must recognize the constraints imposed by predefined system elements in and consider the implementation view of function and information when such view is appropriate.

IMPLEMENTATION PROCEDURES

System implementation is the process of making the newly designed system fully operational. The system is implemented after careful testing. Implementation is a stage in the project where theoretical design is turned into working system in order to maximize efficiency and productivity. The most critical stage in achieving a new system is in getting the approval from the system manager. The newly designed system put into work process, after the testing is over. The system will be implemented in phase along with existing system and it take over happens when the full testing is defined to be perfect, till then the parallel run is done.

The implementation stage is a system project in its own right. It involves careful planning, investigation of the current system and its constraints on implementation, design of method to active the change over procedures and evaluation of change over methods.

5. CONCLUSION AND FUTURE ENHANCEMENT

5.1 CONCLUSION

This project **"WATER SUPPLY MANAGEMENT SYSTEM"** is designed and developed as per the requirements of the information passing for customer and higher officials during needed situation. The implementation of this package is to maintain the required details in the system. This package has a number of facilities to solve the people's difficulties in getting the product related information.

This project makes way to store and manipulate the details of customer, employee, supplier details and collection details. The reports like customer report, sales report and stock report generated by this system have proved to be useful and acceptable by the user.

5.2 FUTURE ENHANCEMENT

This system is very flexible and changes can be made without much difficulty. Future extension in this system can be made to add the features in Internet advertisements.

Likewise, the system also informs the user about various aspects of mass media ad's, Electronic media ad's, Outdoor ad's and gives periodical reports and when required. This system is developed using powerful tools and technology. So, even after the development phase, new applications can be applied and integrated very easily with the existing system.

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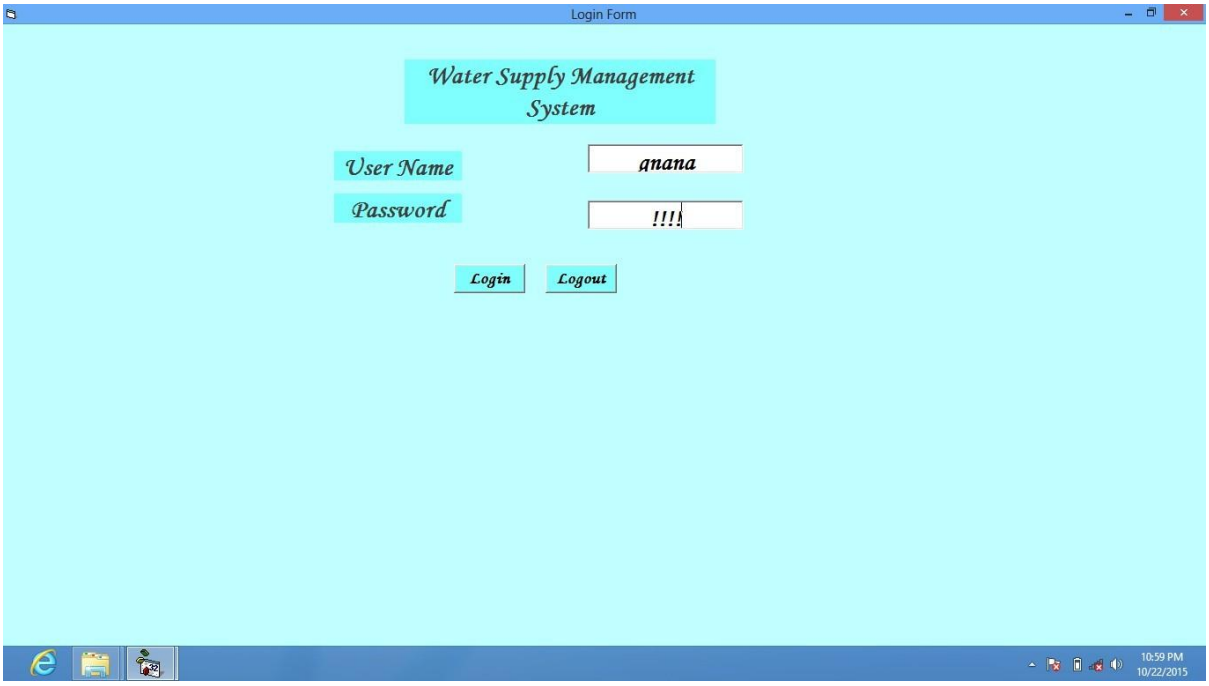
APPENDIX

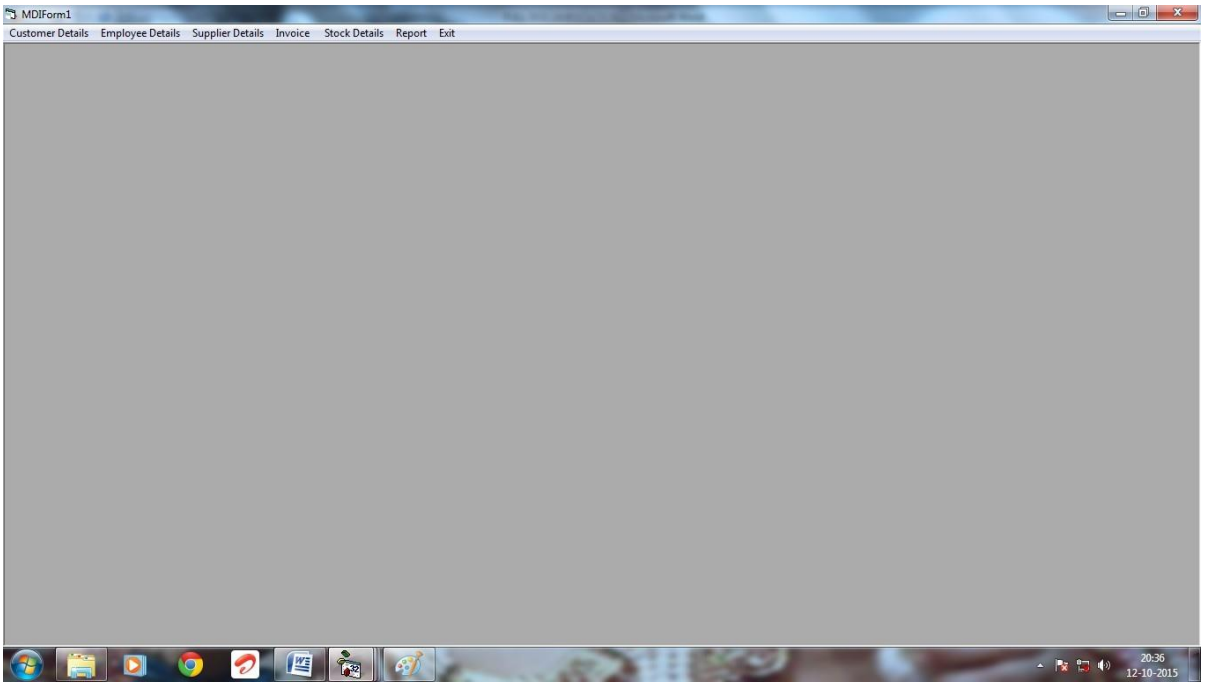
SCREEN SHOTS

LOGIN FORM



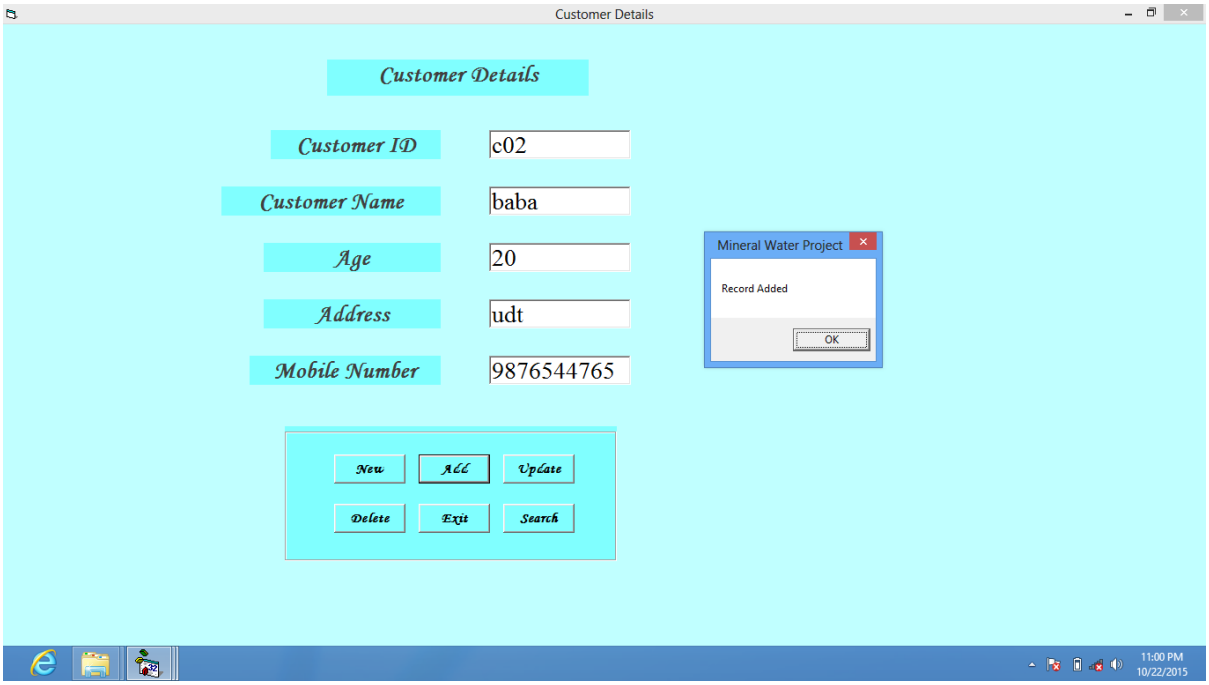
[fig:1]

MDI FORM



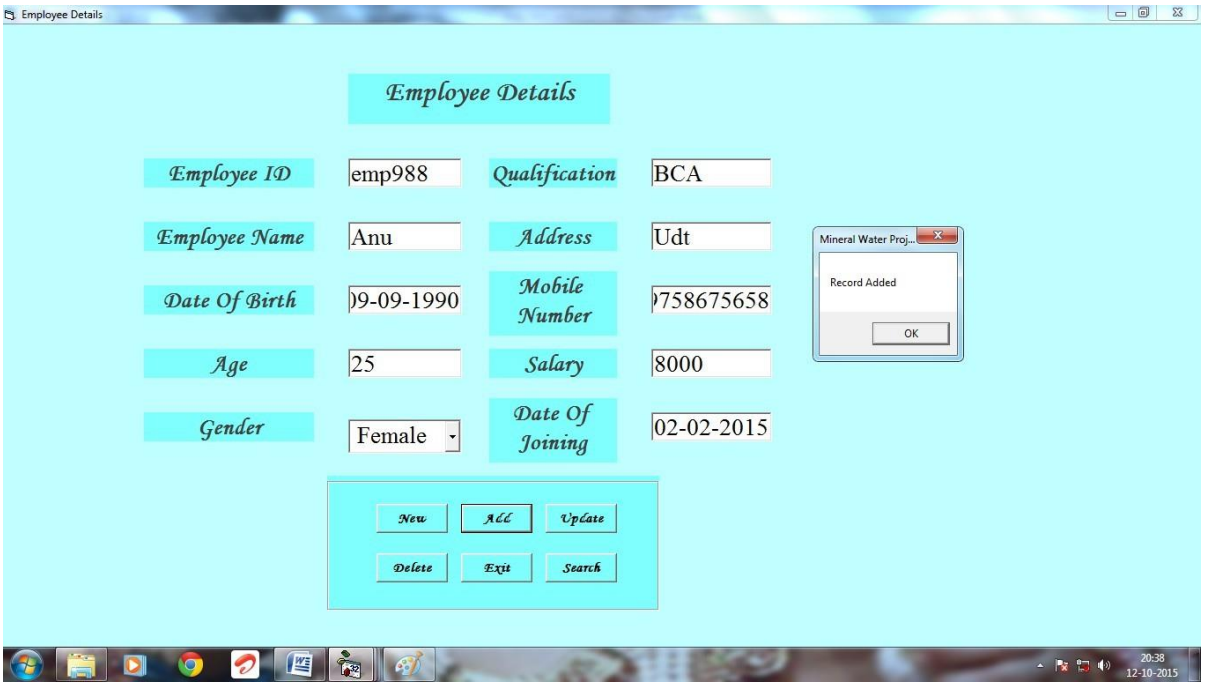
[fig:2]

CUSTOMER DETAILS



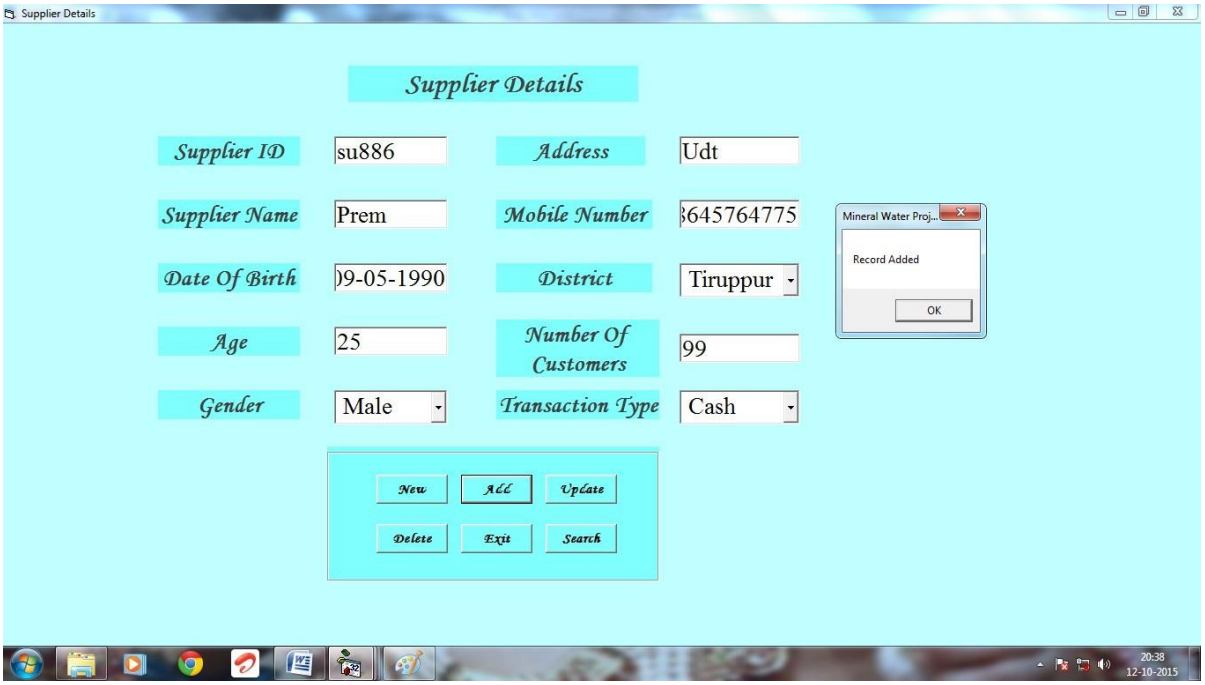
[fig:3]

EMPLOYEE DETAILS



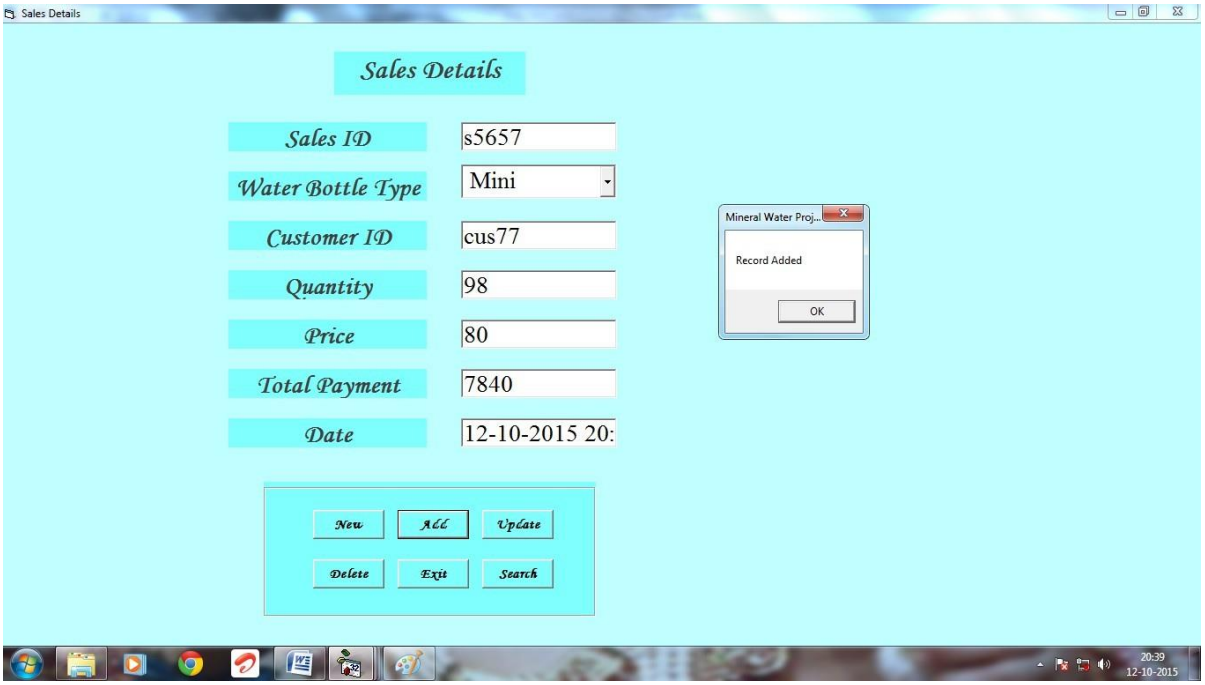
[fig:4]

SUPPLIER DETAILS



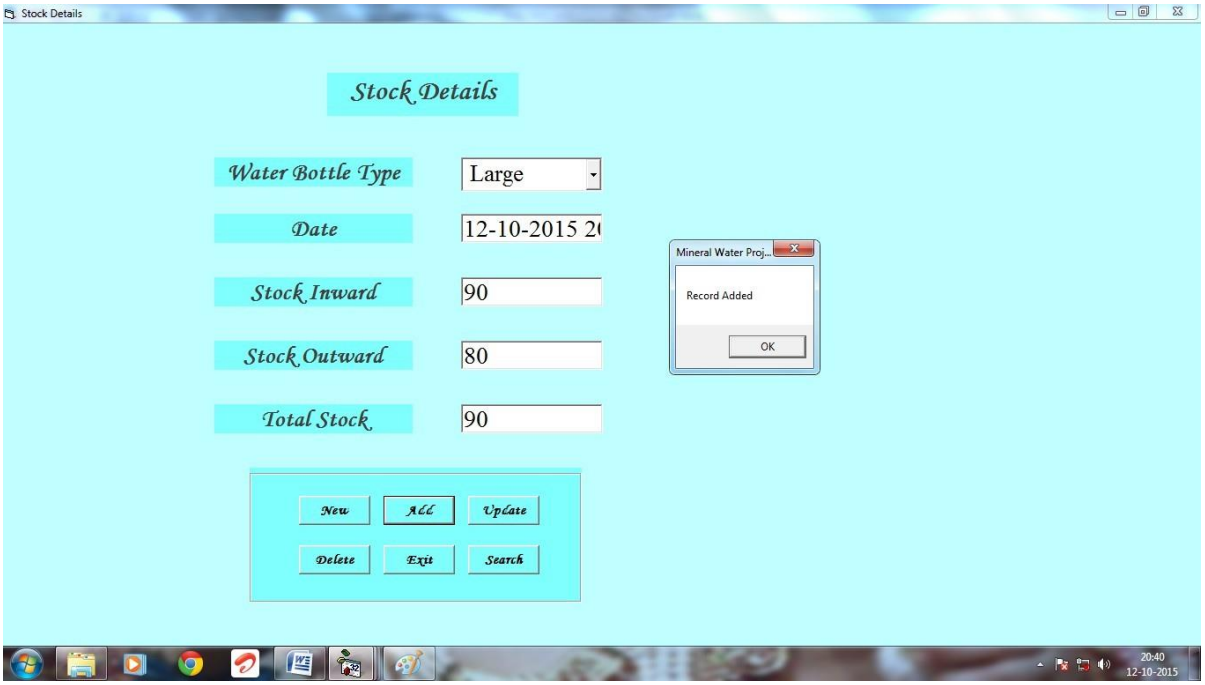
[fig:5]

SALES DETAILS



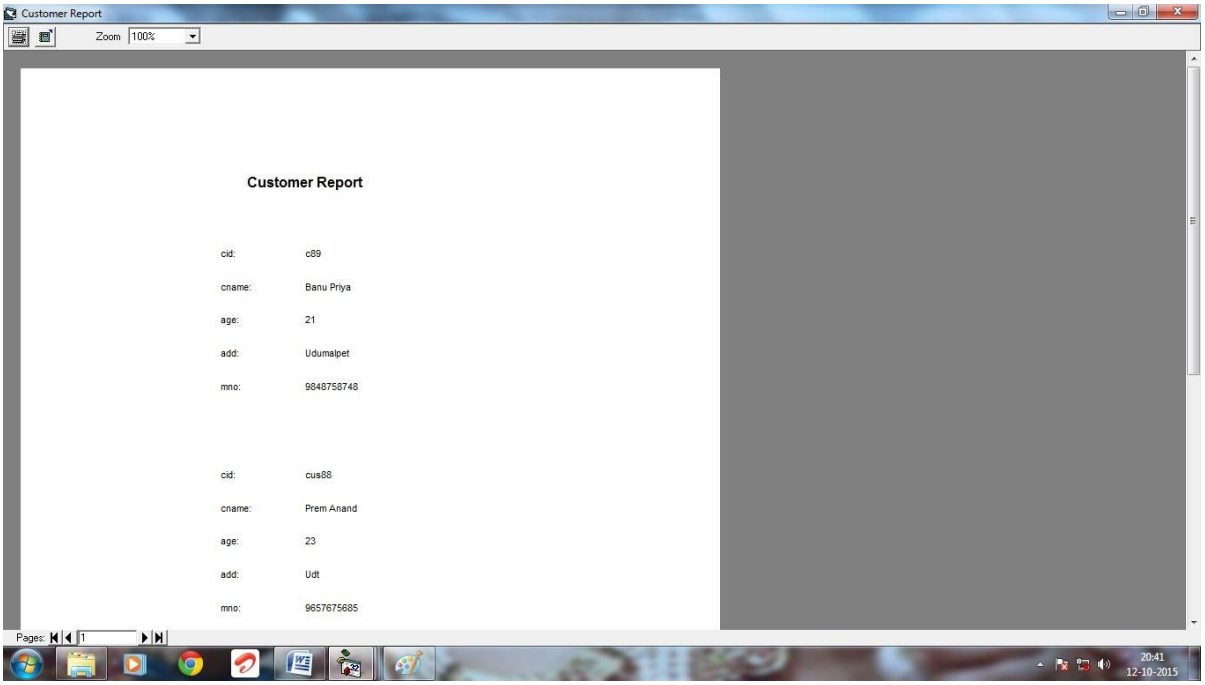
[fig:6]

STOCK DETAILS



[fig:8]

CUSTOMER REPORT

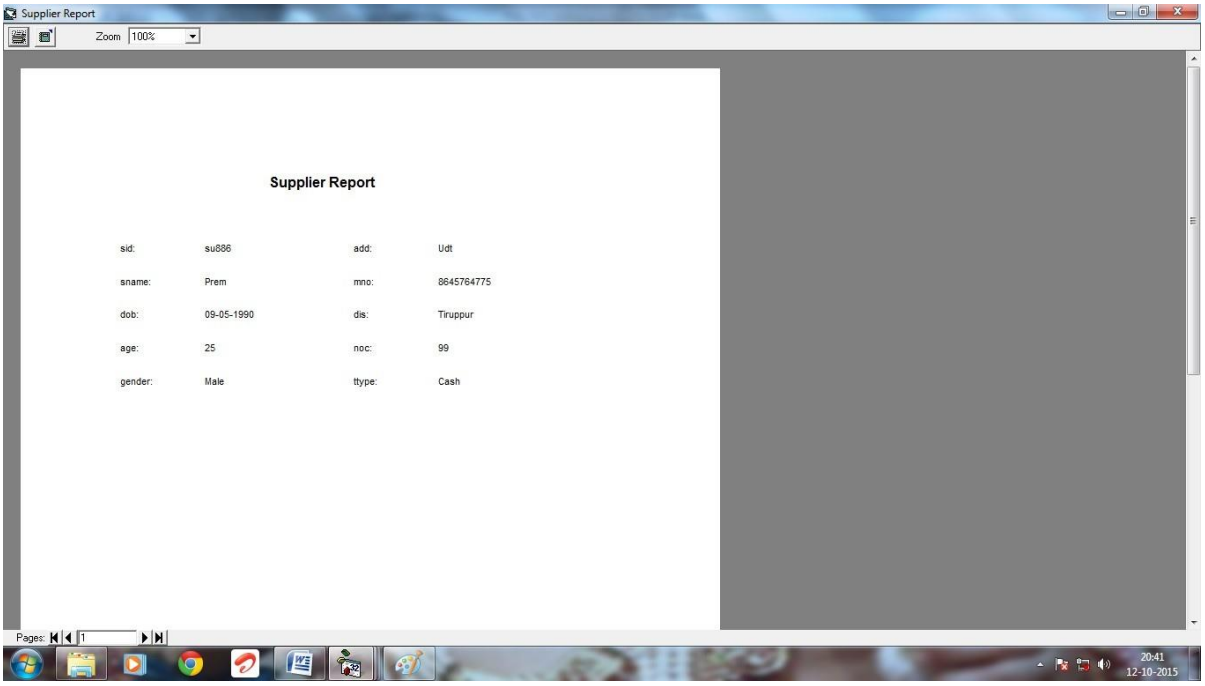


[fig:9]

EMPLOYEE REPORT

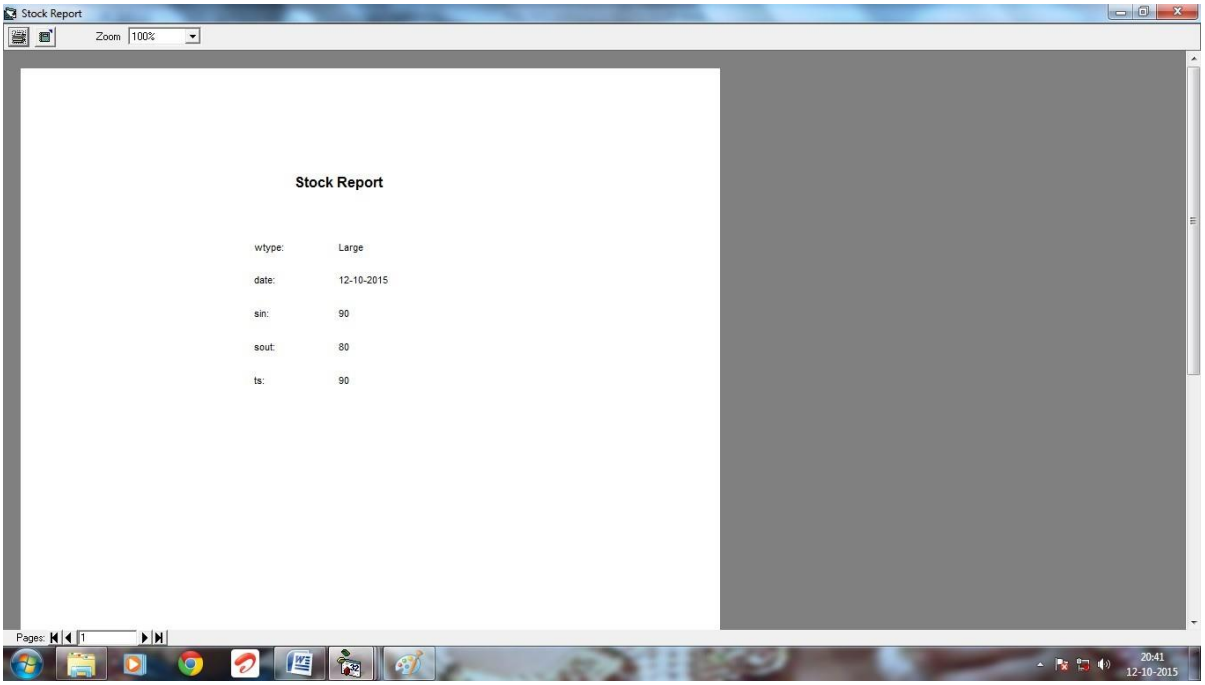
[fig:10]

SUPPLIER REPORT



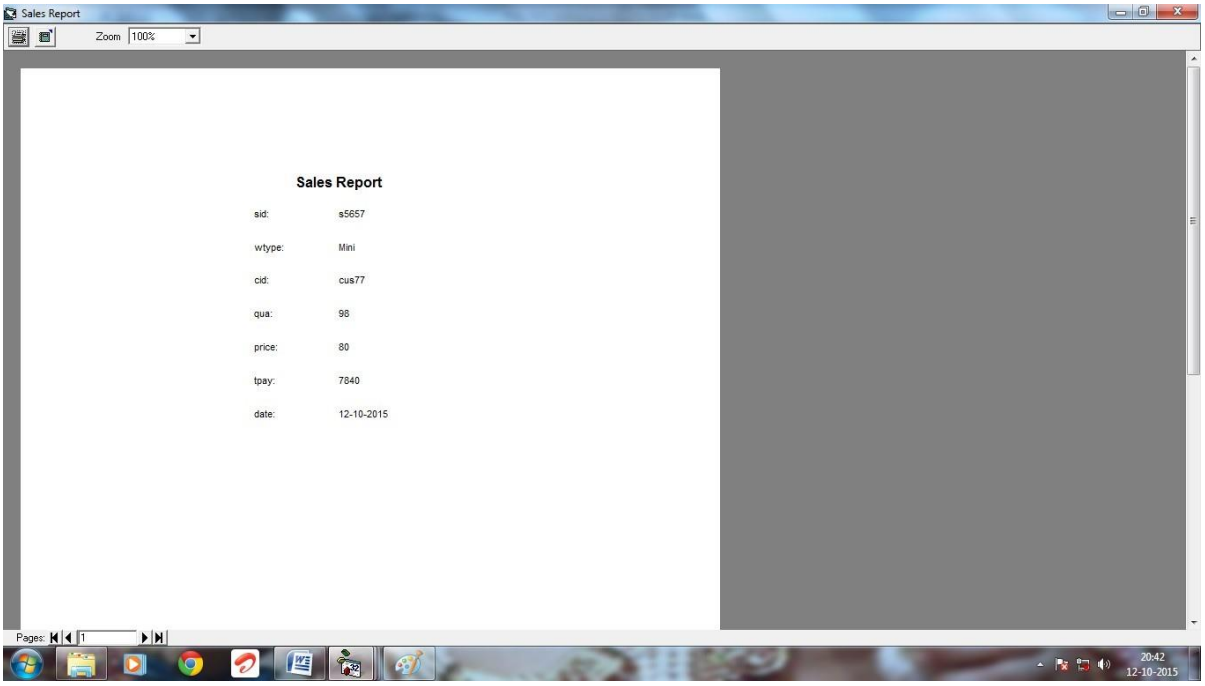
[fig:11]

STOCK REPORT



[fig:12]

SALES REPORT



[fig:13]

SAMPLE CODINGS

```
Dim cn As New ADODB.Connection
Dim rs As New ADODB.Recordset
Private Sub Command1_Click()
Text1.Text = ""
Text2.Text = ""
Text3.Text = ""
Text4.Text = ""
Combo1.Text = ""
Combo2.Text = ""
End Sub
Private Sub Command2_Click()
rs.AddNew
rs("date") = Text1.Text
rs("wtype") = Combo1.Text
rs("sid") = Text2.Text
rs("cid") = Text3.Text
rs("pay") = Text4.Text
rs("ttype") = Combo2.Text
rs.AddNew
MsgBox ("Record Added")
Text1.Text = ""
Text2.Text = ""
Text3.Text = ""
Text4.Text = ""
Combo2.Text = ""
Combo1.Text = ""
End Sub

Private Sub Command3_Click()
rs.Update
```

```
rs("date") = Text1.Text
rs("wtype") = Combo1.Text
rs("sid") = Text2.Text
rs("cid") = Text3.Text
rs("pay") = Text4.Text
rs("ttype") = Combo2.Text
rs.Update
MsgBox " Ur Record Updated."
Text1.Text = ""
Text2.Text = ""
Text3.Text = ""
Text4.Text = ""
Combo2.Text = ""
Combo1.Text = ""
End Sub
Private Sub Command4_Click()
Dim var1 As String
Dim str1 As String
rs.MoveFirst
var1 = UCase(Trim(Text1.Text))
str1 = "date='" & var1 & "'"
rs.Find (str1)
If (rs.EOF) Then
   MsgBox ("Record not Found")
Else
   Call
getdata End If
End Sub
 n
Private Sub Command5_Click()
rs.Delete
```

```
MsgBox "Current Record Deleted "
End Sub
Public Sub getdata()
Text1.Text = rs("date")
Combo1.Text = rs("wtype")
Text2.Text = rs("sid")
Text3.Text = rs("sid")
Text4.Text = rs("pay")
Combo2.Text = rs("ttype")
End Sub
Private Sub Command6_Click()
Unload Me
End Sub
Private Sub Form_Load()
cn.Open "Provider=Microsoft.Jet.OLEDB.4.0;Data Source=G:\CSC\CONFIRM CS\Mineral Water
Project\Database\Mineral.mdb;Persist Security Info=False"
rs.Open "Collection", cn, adOpenDynamic, adLockOptimistic
Text1.Text = Now
Combo1.AddItem ("Mini")
Combo1.AddItem ("Medium")
Combo1.AddItem ("Large")
Combo2.AddItem "Cash"
Combo2.AddItem "Cheque"
Combo2.AddItem "Credit Card"
Combo2.AddItem "Debit Card"
Combo2.AddItem "Demand Draft"
End Sub
```