

1. INTRODUCTION

1.1 ABSTRACT

Furniture items where a user may select various doors, windows etc., the parts or assembled as per specified parts will be delivered to the users address. The furniture sales automation system project allows users to select from a list of products of various companies and models.

Furniture sales automation system project features and function requirement. Share VB Project ideas and topics with us. Grate and many VB project ideas and topics . Here some VB project ideas for research paper. Here large collection of VB project with source code and database. We many idea to development application like mobile application, desktop software application, web application development. You can find more project topics and ideas on VB. Development ideas on Computer Hardware store management system. You can find Top Downloaded VB projects here. Many project available to download with VB source code and database. Free download Computer Hardware store management system project synopsis available.

The project works as follows:

- User is allowed to login to the website.
- The user needs to create a new account if he/she is not registered.
- The user can then see various links saying woods, mica sheets, windows, etc.
- Once the user clicks on motherboard link, the motherboard selection page is opened.
- Here the user may view a list of woods of various companies, make and models.

- User is allowed to select any product needed and add it to his/her shopping cart.
- The user may then visit any other page(mouse selection, ram selection etc) and shop for those products too.
- Our website allows user to add these products to their shopping cart as needed.

1.2 ORGANIZATION PROFILE

SS FURNITURES is a leading company, which is placed in Madurai to provide best training for **Networking, Server Administration, VMware Administration and Internet Security**. Bright system care gives importance to take care of students career and provide high quality training to all class of people. Our organization not only provide the platform to build up the bright professional career in networking, Server Administration, VMWare Administration and Internet Security but also provides the placement support in reputed companies.

We are proud to be the pioneers in "**Hardware and Networking**". Just when everyone was bent upon Software, we foresaw the tremendous potential in Hardware and Networking, and successfully emerged as one of the best IT Company for Hardware and Networking Solutions and the best institute for Hardware and Networking Training. Today the two sides of its business are equally balanced. The expertise of its training is coupled with a strong commitment to provide the best Hardware and Networking solutions. This has put Bright system care in the unique position of deriving synergies between Network Solutions and IT Training.

An educational and professional development organization working on various divisions including Software Development, Training, Web development, Corporate Training, Business process and Consultancy. They strive to excel a quality out-put in

training individuals, Organization coders, development and business process with Professionals who are best in the business. They provide industrial exposure by making fresher work on real time projects. They have world class quality trainers who have the industry exposure of around 8 years. Hence, it provides the best training in .Net Technologies, J2EE Programming, PHP Programming and Web Designing.

India that provides a series of Web-based and software applications that have helped their customer create successful business ventures through online initiatives. Web provide all the services that a company needs to get online from web designing to web hosting; we design, promote, program and manage leading-edge Web sites and e-business applications. Above all they provide optimized website promotion in major search engines.

Services includes: Professional Web Design, Internet Marketing, Link Building, Ecommerce Solution, Web Application Development, Multimedia Presentations, Customized Software Development, and Business Process Outsourcing- IT/IT

On-line Interactive Learning

We believe in On-line Interactive learning. That is to say, the problems, or doubts which students often face, while sitting before a system, is cleared by our staff as soon as they surface. This way our students learn more.

Get experienced while learning

After extensive learning, we subject our students to some Real Time situations (which is often created by our staff) and student left alone, to handle the situation, to overcome the problem, with his own solutions in this way, he is getting experienced, even before the completion of course and is very much ready to seek the job with tremendous confidence.

Teaching Strategy

There is a saying, which goes like "It takes lot of beatings to make a pot". here we literally follow this method of beatings; Beatings it is now in the beginning to beat the world later. Our training is vigorous. At Bright system care we run strict schedules and conduct several crucial tests so as to prepare you for the challenges you are going to face in the IT world as soon as you step out of IT Core Elite.

Technical Facility

Our labs are enormous and equipped with the latest system available in the industry today. We also have product maintenance engineers who see it to that our systems are fully functional at all times. we have a library, shelving books with latest version and edition covering various topics on Real time situation and Troubleshooting, etc.,

1.3 PROJECT OVERVIEW

The main aim of the project entitled “**FURNITURE SALES AUTOMATION SYSTEM**” is to provide an application for the book shop. This project is developed with many layers, which are: Customer Login, Security process, Employee Details, Book Details, Maintenance of Sales and Maintenance of Purchase details are added in this Book shop management system.

Security purpose mainly included in this book shop management to protect book details and customer records from unauthorized persons. Each user can register their id and enter into the login process.

Admin can enter their login id next they administrative process to enter their process to order books and generate invoice for customer purchase. Here Logged in User can access different forms such as Purchase, Employee Details, Tax Invoice, and Stock Info. The book details available in the stock on request and number of copies available in the book shop.

All the Sales made by the owner can be recorded in the separate database provided by this tool, which would be helpful for him in the future for the development of his establishment. Here the user prepares/generate invoice for the customer. In this form Bill no is incremented automatically each time the purchase is made by the customer.

If necessary the user can allow the discount for the purchase made by the customer and finally Invoice Bill is printed. Here the bill date is Auto generated and it is in the format and the user can edit buying and selling price according to the market. The book can be purchased only if it is available in the stock and all the details are

automatically filled else user has to manually enter the details. All account details should be maintained by the admin for full purchase and returned books and cash details.

MODULES

- **Customer Login**
- **Supplier Process**
- **Product Details**
- **Catlog Model Details**
- **Purchase Details**
- **Sales and Invoice Details**

Customer Details:

New user and existing user are used in this book shop management process. User can enter their login id next they can manage administrative process to enter their process to order the books.

Supplier Process:

In manual book keeping all the entries are basically done through entry in the note books, where chances of mistakes are more but in this project the records maintained are more secure as an outsider cannot manipulate the database without knowing the login privilege.

Product Details:

This project provides a provision for maintaining the employee database apart from the maintenance of Book Database. Here Logged in User can access different

forms such as Purchase, Employee Details, Tax Invoice, and Stock Info. And here the user has the right to change password

Catlog Model Details:

The information regarding books i.e., book name, author, publication etc., are provided for the customers for their convenience. As this process is computerized it is easy for the owner to update the list where this process would have been difficult if he had maintained the records manually. Here the customer gets the respective book details available in the stock on request and number of copies available in the book shop.

purchase order:

All the purchase process made by the admin for new and existing customer will be carried out after proper login validation. The form should give their full data after giving their id process at that time customer can purchase their books with date and maintain return date with lack of fine process.

2. SYSTEM ANALYSIS

2.1 SYSTEM ANALYSIS FUNDAMENTALS

Analysis is a detailed study of the various operations performed by a system and relationships within and outside of the system. Analysis is a continuing activity at all stages of the project. It is the process of studying problems to find the best solution to the problem by which the existing system is learned, existing problems are understood.

Objectives and requirements are defined and the solutions are evaluated. Once analysis is completed, the analyst has a firm understanding of what is to be done.

Analysis consists of two phases: planning and requirements definition. They include understanding the customer's problem, performing a feasibility study, developing a recommended solution strategy, determining the acceptance criteria, and planning the development process.

The system definition is typically expressed in English or some other natural language and may incorporate charts, figures, graphs, tables and equations of various kinds.

The exact notations used in the system definition are highly dependent on the problem area. Obviously, one uses different terminology to describe an accounting system than to describe a process control system.

Feasibility Study

Feasibility study is the evaluation of a system regarding its workability, impact on the organization, ability to meet the user needs and effective use of

resources. It is both necessary and prudent to evaluate the feasibility of a project at the earliest possible time. Months or years of effort, thousands and millions of dollars, and untold professional embarrassment can be averted if an ill-conceived system is recognized early in the definition of phase.

Feasibility and risk analysis are related in many ways. If project risk is great, the feasibility of producing quality software is reduced. During product engineering, however, we concentrate our attention on primary areas of interest.

Technical Feasibility

Technical feasibility is the need of hardware and software, which are needed to implement the proposed system in the organization. Technical requirements are to be fulfilled to make the proposed system work. This should be necessarily predetermined so as to make the system more competent.

It is the study that determines whether the work for the project can be done with current equipment, existing software technologies, and available personnel. If new technology is required then, what are the additions to be made? What is the likelihood that it can be developed?

Technical feasibility is the most difficult area to assess at the stage of the system development process. Because objectives, functions and performance are somewhat hazy, anything seems possible if the right assumptions are made.

Economic Feasibility

Economic feasibility deals with the analysis of cost against benefits i.e. whether the benefits to be enjoyed due to the new system are worthy, when compared to the costs to be spent on the system.

Economic justification is generally the “bottom-line” consideration for most system, long-term corporate income strategies, impact on other profit centers or products, cost of the resources needed for development, and potential market growth. Hence this project was economically justified for development in this organization.

Especially in the present scenario, where the objective is towards compatibility, reduced cost is weighed against the ultimate income or benefit derived from the developed system.

Behavioural Feasibility

Behavioural feasibility speaks about how strong a reaction the programmer is likely to have toward or against the development of system. Since the programmers are well exposed to the system, it will be feasible for them to work on. Therefore, the system to be computerized is also behaviourally feasible.

Legal Feasibility

Legal feasibility encompasses a broad range of concerns that include contracts, liability, infringement, and myriad other traps frequently unknown to the technical staff. A determination of any infringement, violation, or liability that could result from the development of the system.

2.2. EXISTING SYSTEM

In this system every work is carried out manually which is time consuming and leads to miss entry of details. Searching and updating records is tedious process. Storage of data needs separate and provide to store the books if not so; it leads to loss of data. This system is also much time consuming and expensive.

The above result in these factors leads to formulate a new system, which could help the organization in all aspects to make things easier, faster and efficient than the existing manual system.

Drawbacks in the existing system

- Manual work
- Security of information is low
- Calculations are difficult
- It needs more time
- Errors occur frequently
- Occupies more resources
- Needs a lot of manpower

2.3 PROPOSED SYSTEM

The existing system is not functioning effectively due to manual processing. Computer dominates major roles in banking activities. Primarily computers are used in banking organization for accomplishing activities at faster rate with up-to date information accuracy and cost reduction.

The proposed system is an effective menu driven package. This package is more powerful than the existing system. The package also aims to provide faster service to the management proposed system thus aim at removing all the complexities in the existing system.

Advantages

1. The system is more user friendly
2. It is equipped with powerful GUI(Graphical User Interface)
3. The interrelated data are grouped into different input screens.
4. Provides a high uniformity among all screens format.
5. The system works in high speed and accuracy.
6. It generates neat formatted report, based on which the decision is possible.
7. It handles bulk amount of data.

3. SYSTEM SPECIFICATION

3.1 HARDWARE SPECIFICATION

Processor : Core 2 Duo

Speed : 2 GHz

Hard disk capacity : 500GB

RAM capacity : 2GP RAM

Keyboard : 104 keys

Mouse : Logitech

Monitor : 15" Monitor

3.2 SOFTWARE SPECIFICATION:

Operating system : Windows 7

Front end : Visual Basic 6.0

Back End : MS Access

3.2.1 INTRODUCTION TO THE OPERATING SYSTEM

Each and every system has its own operating system. An operating system is the master control program that runs the computer and acts as a scheduler. It controls the flow of signal from CPU to various parts of the computer. It is the first program loaded into the computer's memory after the computer is switched on. Popular operating system includes MS-DOS, OS/2, Windows 95, XP, Windows7 NT and UNIX.

OVERVIEW OF WINDOWS 7

Windows 7 is the Microsoft Corporation's latest upgrade to its operating system known as Windows. Windows 7 uses the graphical user interface, which determines how to interact with the computer. Windows 7 is a highly evolved product, tightly integrated with the graphical user interface (GUI), it is very possible to the internet.

FEATURES OF WINDOWS 7

There are several features, which accomplish Windows 7. It has several enhancements added to the Windows 7 version. In this internet connections can be viewed using internet explorer.

OBJECTIVES OF WINDOWS 7





- Graphical User Interface (GUI)
- Desktop
- Graphical Device Interface
- Dynamic Data Exchange
- Object Linking and Embedding

GRAPHICAL USER INTERFACE

The graphical user interface increases ease of use and its intuitive design makes learning windows easy. Windows is an event driven operating system and the user's interactions in terms of events and messages. An operating system identifies these events for what they signify and pass it on to the actual application towards which the event is directed in the form of message.

DESKTOP

Desktop is an area seen when the Windows XP is started. The four main features seen in desktop area are;

-  Shortcut icons
-  Task bar
-  Start button
-  Time and Status

GRAPHICAL DEVICE INTERFACE

The graphical device interface provides a set of standard function that let applications communicate with graphics device including displays and printers, without knowing anything about the devices.

3.2.2 ABOUT VISUAL BASIC

Microsoft Visual Basic operating system the quickest and easiest way to create application for the graphical user interface environment. Visual Basic makes things more productive by providing appropriate tools for different areas of graphical user interface's development coding in graphical user interface.

Visual Basic 6.0 is the easier way to create single user a client/server applications for Microsoft windows.

OBJECTIVES OF VISUAL BASIC 6.0

- ☞ Visual Basic 6.0 programming environment
- ☞ Working with forms
- ☞ Developing an application
- ☞ Variables, data types and modules
- ☞ Procedures and control structures
- ☞ Arrays in Visual Basic

Using the above objective of Visual Basic 6.0, a complete code for a program can be written.

INTEGRATED DEVELOPMENT ENVIRONMENT (IDE)

One of the significant changes in Visual Basic 6.0 is the integrated development environment (IDE). IDE is terms that are commonly used in the programming words to describe the interface and the environment that we use to create our applications. The

IDE is also commonly referred to as the design environment of the program. **The Visual**

Basic IDE components

- Menu bar
- Tool bar
- Project explorer
- Properties windows
- Form layout window
- Tool box
- Form designer
- Object browser

MULTIPLE DOCUMENT INTERFACE (MDI)

The multiple document interface allows us to create an application that maintains the multiple forms within a single container form. Applications such as Microsoft Excel and Microsoft Word for windows have multiple document interface.

A multiple document interface allows the user display multiple document at the same time, with each document displayed in its own window document. Windows or contained in a parent windows, which provides a work space for all the document windows in the applications. For example, Microsoft Excel allows us to create and display window is confined to area of the Microsoft Excel parent window.

CREATING MULTIPLE DOCUMENT INTERFACE APPLICATION

We must use the following procedure to create a multiple document interface form and its child forms.

To create a multiple document interface application.

- Create a multiple document interface form, from the insert menu, and choose multiple document interface form.
- Create the applications child forms. To create a multiple document interface form, create a new form (or open an existing one) and set its multiple document interface child property to true.

MENU BAR

The menu bar displays the commands that are required to build an application. The main menu items have the sub menu items that can be chosen when needed.

TOOL BAR

The tool bars in the tool box provides quick access to the commonly used commands and a button in the tool bar clicked once to carry out the action represented by it. There are various tool bar buttons used for various purposes, they are listed below:

- Add form
- Add module
- Open project
- Save project
- Menu editor and so on.

PROJECT EXPLORER

The project explorer window is below the tool bar at the right most corner of the screen. The project explorer serves as a quick reference to the various elements of a project namely form, classes and modules. In addition to forms, the project explorer window also lists code modules and classes.

PROPERTIES WINDOW

The properties window is docked under the project explorer. The properties window exposes various characteristics of selected objects. Each and every form in an application is considered as an object, each object in Visual Basic has characteristics such as color and size. All these characteristics of an object are called its properties. All of these properties are displayed in the properties window.

TOOL BOX

The tool box contains a set of controls that are used to place on a form at design time there by creating the user interface area. Additional controls can be included in the tool box by using components, menu item on the project menu.

OBJECT BROWSER

The object browser allows us to browse through the various properties, events and methods that are made available to us. Selecting object browser from the view menu accesses it.

DAO (DATA ACCESS OBJECT)

This new data access technology features a simple object model, better integration with other Microsoft and non-Microsoft technologies, a common interface for both local and remote data access, remote and disconnected record sets, a user-accessible data binding interface and hierarchical record set.

DATA ENVIRONMENT

The Data Environment designer provides an interactive, design-time environment for creating DAO objects.

DAO DATA CONTROL

The new OLE DB aware data source control that functions much like the intrinsic data and remote Data controls, in that it allows us to create a database application with minimum code.

OLE DB SUPPORT

OLE DB is a set of COM interface that provide application with uniform access to data stored in device information source relational & non –relational.

DATA REPORT

Allow us to use drag and drop to Quickly create reports from any record set , including hierarchical record set .

TEXT BOX

A TEXT Box control, sometimes called an edit field or edit control, displays information entered at design time, entered by the user, or assigned to the control in code at run time.

TIMER

A timer control can execute code at regular intervals by causing a timer event to occur. The TIMER control, invisible to the user, is useful for background processing.

LABEL

A LABEL control is a graphical control and we can use to display text that a user can't change directly.

COMBO BOX

A Combo box control combines the features of a Text Box control and a LIST Box control users can enter information in the text box portion or select an item from the list box of the control.

DBLIST

The Data List control is a data bound List box that is automatically populated from a field in an attached data source, and optionally updates a field in a related table of another data source.

3.2.3 ABOUT MS ACCESS

The back end is used to store the data's on the database table. In the back end databases can be created and its links to the front end using several types of database connectivity options such as DAO, ADO etc.

DATABASES AND DATABASE MANAGEMENT SYSTEMS (DBMS)

A database is simply a grouping of related information organized for easy processing and retrieval. The actual data in a database is stored in tables. A table is made up of columns (fields) and rows (records). The rows contain identically structured pieces of information and can be termed as records. Otherwise a record is a collection of columns that contain values.

The database management system accomplishes the task of storing and retrieving the large volumes of data in databases with the large volume of data in databases with the help of high level commands. The DBMS hides low level details, such as how data are stored in a database and frees the programmer to concentrate on managing information, rather than on the specifics of manipulating links among them.

In this software development we are using a back end as Microsoft Access.

MICROSOFT ACCESS

This database let us to store and organize information in sets of tables. After creating a database, we can look at each item of information in a form as though it were recorded on an index card. We can perform calculations and statistics such as

totals and average, and we can sort the information, find specific items and create reports.

Tables are the basic building blocks of a database. In addition to tables, a database can include queries forms, reports and other components, all of which allows us to view and manipulate database information in a variety of ways.

OVERVIEW OF MS-ACCESS

ENTITY

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

RELATIONSHIPS

It represents real-world associates among one or more entities and is 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 modal dictates that every row in a database must be unique. If your database allows duplicate rows, you will be forever lost.

PRIMARY KEY

A primary key is made up of one or more attributes whose value or values uniquely identify each record in a table. In a relationship, a primary key is used to refer

to specific records in one table from another table. A primary key is called a foreign key when it is referred to, from another table.

DATA INTEGRITY

Enforcing data integrity involves preserving the consistency and correctness of data stored in your database by

- ★ Validating the contents of individual fields
- ★ Validating data in one table with respect to one another
- ★ Verifying field with respect to another

DATA TYPE IN MS-ACCESS

There are different data types in Access

- Numeric
- Text
- Currency
- Date/time
- Logical

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. From the queries we can get a result.

4. SYSTEM DESIGN

System design is the process or art of defining the architecture, components, modules, interface, and data for a system to satisfy specified requirements. One could see it as the application of systems theory to product development.

There is some overlap and synergy with the disciplines of system analysis, system architecture and system engineering. System design is therefore the process of defining and developing a system to satisfy specified requirement of the market or a customer.

The system design document describe how to transform the requirements and the functional design into more technical system design specification .This design involves conceiving and planning out in the mind and making a drawing, pattern, of sketch of.

It includes three types of activities: External Design, Architectural Design, and Detailed Design. The architectural design and detailed design collectively referred to as internal design.

The external design involves specifying the externally observable characteristics of a software product and the internal design involves specifying the internal structure and processing details of the system.

The fundamental concepts of the system design include abstraction, structure, information hiding, modularity, concurrency, verification, and design aesthetics.

4.1 INPUT DESIGN

The input design is the process of entering data to the system. The input design goal is to enter to the computer as accurate as possible. Here inputs are designed effectively so that errors made by the operations are minimized.

The inputs to the system have been designed in such a way that manual forms and the inputs are coordinated where the data elements are common to the source document and to the input. The input is acceptable and understandable by the users who are using it.

Input design is the process of converting user-originated inputs to a computer-based format input data are collected and organized into group of similar data. Once identified, appropriate input media are selected for processing.

The input design also determines the user to interact efficiently with the system. Input design is a part of overall system design that requires special attention because it is the common source for data processing error. The goal of designing input data is to make entry easy and free from errors.

4.2 OUTPUT DESIGN

The output from the system is either by screen or by hard copies. Output design aims at communicating the results of the processing of the users. The reports are generated to suit the needs of the users. The reports have to be generated with appropriate levels.

4.3 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 constitute a record. The record contains all the information, specific to a particular item.

Table Design:

Name: Customer

Field Name	Data type
Cus_id	Text
Cus_name	Text
Cus_add	Text
Cus_phone	Number
Cus_mail	Text
Cus_join	Date/time
Cus_proof	Text
Cus_proofno	number

Name :Supplier_entry

Field Name	Data type
Id_No	Text
Company name	Number
Company no	Text
Contact name	Text
address	Number
city	Number
Postal code	Text
Email id 1	Text
Email id 2	Text
Web address	Text
Fax no	Text

Name: Product

Field Name	Data Type
Id_no	Number
Serial no	Text
Model	Text
Name	Number
Mrp	Text

Name: Catlog Model

Field Name	Data type
Com_id	Number
Com_model	Text
Com_name	Text
Com_rate	Number
Com_mail	Text
Com_web	Text
Com_contact	number

Name: Purchase

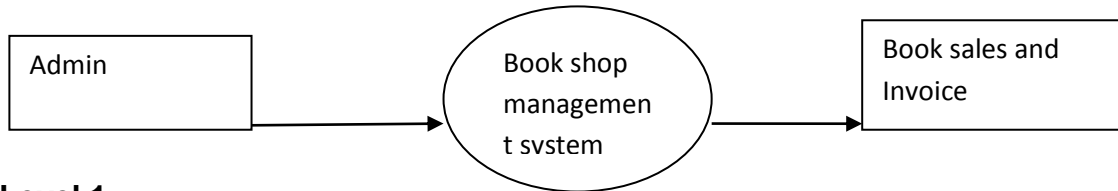
Field name	Data type
PO_id	NUMBER
PO_DATE	DATE/TIME
Po_bookid	Number
Po_bookqty	Text
Po_bookamount	Text

Name:Sales

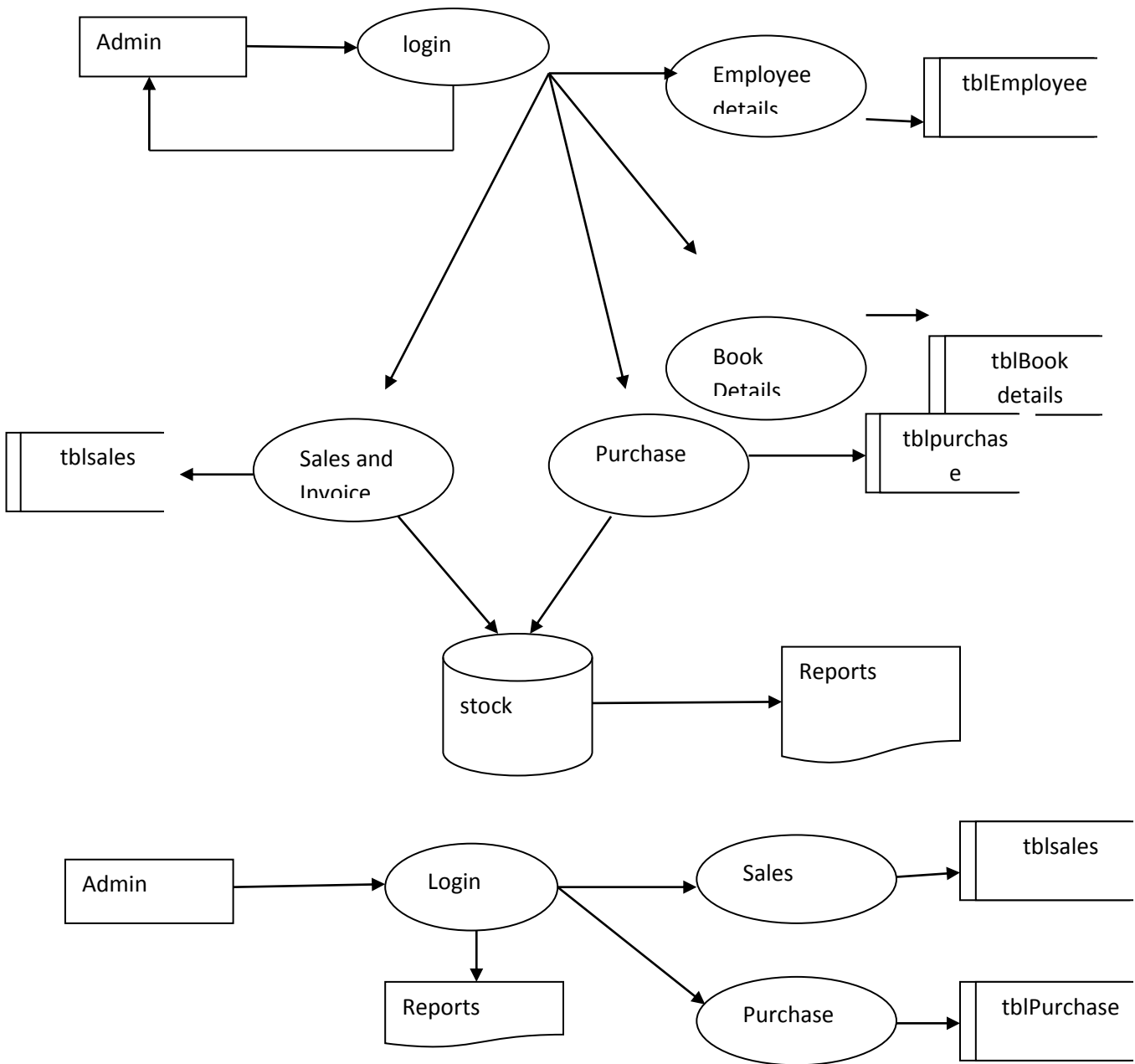
Field_name	Data_type
Sales_id	Number
Sales_date	Date/time
Cus_name	Text
Sal_bookid	Text
Sal_qty	Text
Sal_price	number

4.4. Data Flow Diagram:

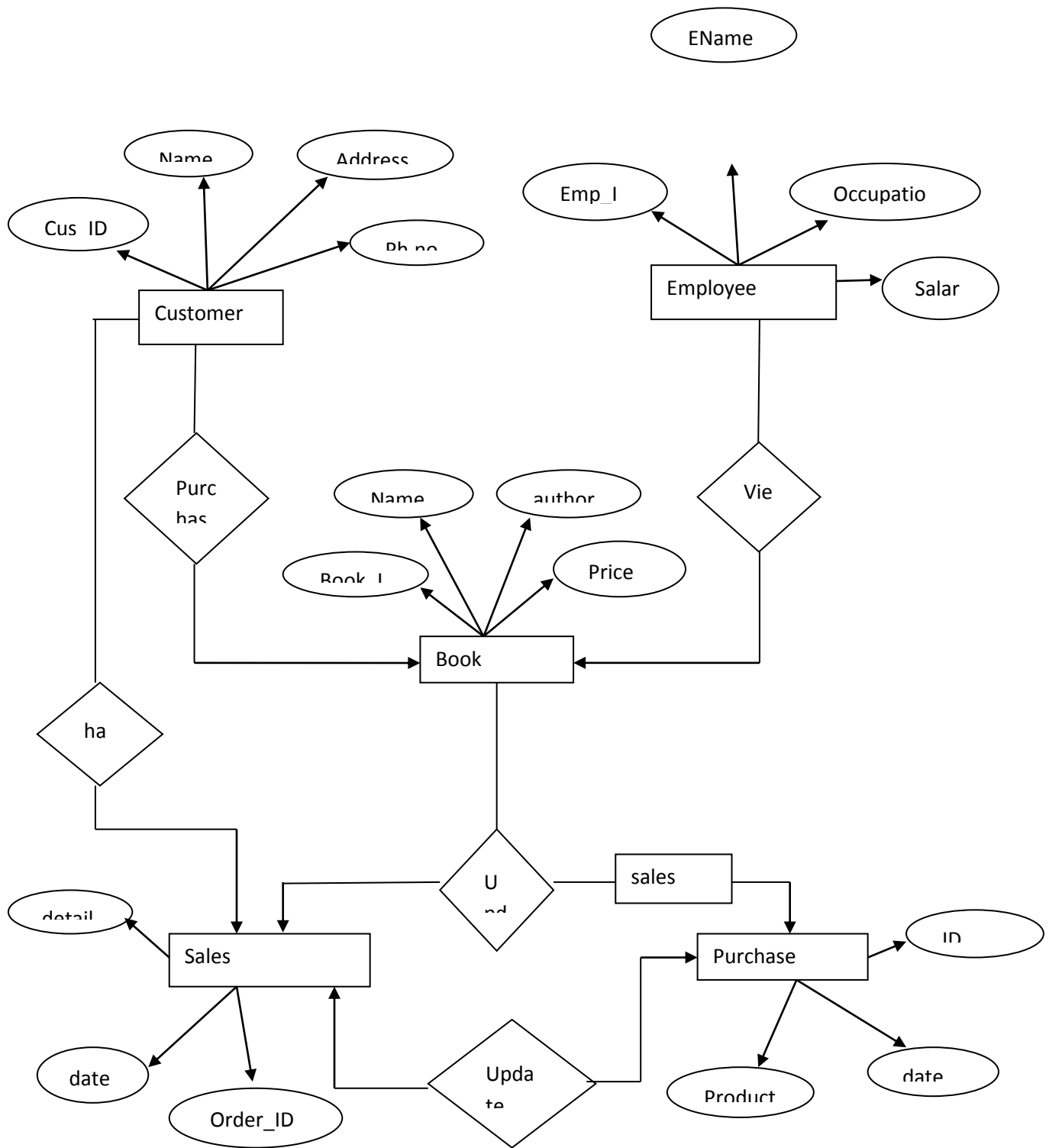
Level 0



Level 1



4.5 ER-DIAGRAM



4.6 CODE DESIGN

5. SYSTEM TESTING IMPLEMENTATION

5.1 SYSTEM TESTING

Testing is the analysis of source/executable code and the controlled execution of executable code to reveal defects that compromise a Java program's executable integrity. Defects often lead to erratic behavior or the premature termination of an executing program. The Software testing process commences once the program is created and the documentation and related data structures are designed. Software testing is essential for correcting errors. Otherwise the program or the project is said to be not complete. Software testing is a process of checking whether the developed system is working according to the original objectives and requirements. The system should be tested experimentally with test data so as to ensure that the system works according to the required specification. Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. After the coding phase, computer programs are available that can be executed for testing purposes. This implies that testing not only has to uncover errors introduced during coding, but also errors introduced during the previous phases.

Software Testing Fundamentals

Testing presents an interesting task for software engineers. Earlier in the software process, the engineer attempts to build software from an abstract concept to a tangible implementation.. The engineer creates the series of test cases that are intended to “demolish” the software that has been build.

To test any program we need to have a description of its expected behavior and a method of determining whether the observed behavior conforms to the expected behavior for this we need a *test -oracle*. A test-oracle is a mechanism; different from the program itself that can be used to check the correctness of the output of the program for the test cases. Human-oracle is human beings who mostly compute by hand what the output of the program should be. Human-oracle can make mistake. So test -oracle is defined in the tool to automate testing and avoids mistakes.

Testing objectives

The testing objectives are summarized in the following three steps

- ✍ Testing is a process of executing a program with the intent of finding an error.
- ✍ A good test case is one that has high probability of finding an as-yet undiscovered error.
- ✍ A successful test is one that uncovers an as yet undiscovered error.

Exhaustive is not possible

The number of path permutations for even a moderately sized program is exceptionally large. For this reason, it is possible to execute every combination of paths during testing. It is possible, however, to adequately cover program logic and to ensure that all conditions in the procedural design have been exercised. To be more effective, testing has highest probability of finding errors.

The following are the attributes of the good test:

- ✍ A good test has high probability of finding an error.

- ✍ A good test is not redundant.
- ✍ A good test should be “best of breed”.
- ✍ A good test should be neither too simple nor too complex.

TESTING STRATEGIES

System testing is stage of implementation which is aimed at ensuring that the system works accurately and efficient before live operation commences. Testing is vital to the success of the system. System testing makes a logical assumption that if all the parts of the system are correct, the goal will be successfully achieved.

The testing steps are:

- ✍ Unit Testing
- ✍ Integration Testing
- ✍ Validation Testing
- ✍ Output Testing
- ✍ User acceptance Testing

Unit testing

Unit testing focuses verification efforts on the smallest unit of software design, the module. This is also known as “Module Testing”. The modules are tested separately. This testing is carried out during programming stage itself. Unit testing specifies paths in the module’s control structure to ensure complete coverage and maximum error detection. This test focuses on each module individually, ensuring that it functions properly as a unit.

According to the project, the given java source code is tested for used and unused variables, different java source codes are taken as input and variables are listed within each and every class and tested for their correctness.

The number of loops in the given java source code are checked for the correctness of line numbers. Memory consumed by the Java source code during the compilation and execution of coding is found.

Integration-testing

Data can be lost across the interface, one module can have an adverse effect on others. Integration testing is a systematic testing for constructing program structure. While at the same time conducting tests to uncover errors associated within the interface. Integration testing addresses the issues associated with the dual problems of verification and program construction. After the software has been integrated a set of high order sets are conducted. The objective is to take unit tested modules and combine them test it as a whole. Thus, in the integration-testing step, all the errors uncovered are corrected for the next testing steps.

Validation Testing

The outputs that come out of the system are as a result of the inputs that go in to the system. So, for the correct and the expected outputs the inputs that go in to the system should be correct and proper. So this testing is done to check if the inputs are correct and they are validated before it goes in to the system for processing.

Output Testing

After performing the validation testing, the next step is output testing of the proposed system, since no system could be useful if it does not produce the required output in the specified format. Asking the users about the format required by them tests the outputs generated or displayed by the system under consideration. Hence the output format is considered in 2-ways-one is on screen and another is printed format.

System Testing

A system testing does not test the software but rather the integration of each module in the system. It also tests to find discrepancies between the system and its original objective, current specifications, and system documentation.

System testing is actually a series of different tests whose primary purpose is to fully exercise the computer-based system. Although each test has a different purpose, all work to verify that system elements have been properly integrated and perform allocated functions.

Performance Testing

Performance testing is designed to test the run-time performance of software within the context of an integrated system. It requires both hardware and software instrumentation. It is often necessary to measure resource utilization in an exacting fashion.

Procedure Testing

Determine the clarity of the documentation on operation and the user of the system by having users do exactly what manual request. In case of this project work system testing and unit testing are mainly used.

Test Plan

Before going for testing, first we have to decide the type of testing. For this impact system unit testing is carried out. Before going for testing, the following things are taken into consideration.

- ✍ To ensure that information properly flows in and out of the program.
- ✍ To find out whether the local data structures maintains its integrity during all steps in an algorithm execution.
- ✍ To ensure that the module operates properly at boundaries established to limit or restrict processing.
- ✍ To find out whether all statements in the module have been executed at least once.
- ✍ To find out whether error-handling paths are working correctly or not.

Check for validations

Unit Testing

Unit testing focuses verification effort on the smallest unit of software design (i.e.), the module. The unit testing is always white-box oriented and the step can be conducted in parallel for modules.

Preparation of Test Data

Taking various kinds of test data does the above testing. Preparation of test data plays a vital role in the system testing. After preparing the test data the system under study is tested using that test data. While testing the system is by using test data errors are again uncovered by using above testing steps and corrections are also noted for future use.

Using Live Test Data

Live test data are those that are actually extracted from organization files. After a system is partially constructed, programmers or analysts often ask users to key in a set of data from their normal activities. Then, the systems person using this data as a way to partially test the system. It is difficult to obtain live data in sufficient amounts to conduct extensive testing. And, although it is realistic data that will show how the system will perform for the typical processing requirement, assuming that the live data entered are in fact typical, such data generally will not test all combinations or formats that can enter the system. This bias toward typical values then does not provide a true systems test and in fact ignores the cases most likely to cause system failure.

Quality Assurance

Quality assurance consisting of the auditing and reporting functions of management for the system. The goal of quality assurance is to provide management with the data necessary to be informed about the product quality, thereby gaining insight and confidence that product quality is meeting its goals. For the confirmation of quality

of the application the functional and performance requirements and characteristics are documented and reviewed a per the management decision.

Generic Risks

The risk is an unwanted event that has negative consequences. Project will engage in risk management to understand and control the risk on their projects. We can distinguish risks from other project events by looking for three things.

- A loss associated with the event
- The likelihood that the event will occur
- The degree to which we can change the outcome.

5.2 VERIFICATION AND VALIDATION

This system has been verified and validated by using the

- ❖ Test Data
- ❖ Live Data

Verified with Test Data

In this case of testing, the data were developed artificially and these data are applied to the system. The result of the system was checked, whether it satisfies the specification of the system. Each module in this system has been tested independently and finally tested as a package.

Verified with live data

In this case, the real data are applied to the system and its result was checked with original results that was calculated manually.

The goals of verification and validation activities are to assess and improve the quality of the work products generated during development and modification of software. Quality attributes of interest include correctness, completeness, consistency, reliability, usefulness, usability, efficiency to standards and overall cost effectiveness.

Verification is a rigorous mathematics demonstration that source code conforms to its specification. Validation is the process of evaluating software at the end of the software development process to determine the compliance with requirements.

5.3 SYSTEM IMPLEMENTATION AND MAINTANENCE

Implementation is the stage in the project where the theoretical design is turned into working system. This is the most crucial stage in achieving a new successful system and in giving confidence of the new system for the users that it will work efficiently. Implementation of software refers to the final installation of the package in its real environment, to the satisfaction of the intended users and the operations of the system. In many organizations someone who will not be operating it, will commission the software development project. The people who are not sure that the software is meant to make their job easier. In the initial stage they doubt their software but we have to ensure that the resistance does not build up as

- ✍ The active user must be aware of the benefits of using the system.
- ✍ Their confidence in the software is build up.
- ✍ Proper guidance be imparted to the user so that he is comfortable in using the application.

Implementation procedures

The implementation procedures involves careful planning, investigation of the current system and the constraints on implementation, design of methods to achieve the changeover, an evaluation of change over methods. Initially a preliminary implementation plan is prepared to schedule and manage many different activities that must be completed for a successful system implementation. The preliminary plan serves as a basis for the initial scheduling and assignment of resources to important implementation activities. The preliminary plan has been updated throughout the implementation phase in order to reflect the current state. A complete implementation

plan includes the following items: selection of quality personnel, system training plan, system test plan, equipment installation plan, system conversion plan, overall implementation plan. Apart from planning major task of preparing the implementation procedures are education and training to the users. The more complex the system being implemented, the more involved be the system's analysis and design effort required just for implementation. An implementation coordinating committee based on policies of individual organization is appointed. The implementation process begins with preparing a plan for implementation of the system.

User Training

To achieve the objective and benefits expected from computer based system it is essential for the people who will be involved then in understanding the overall system and its effect on the organization, and in being able to carry out effectively their specific tasks. As system become more complex the need for education and training is more and more important. Training the user is one of the most important jobs of the developer. User are informed of hoe the whole system works its objectives, new documentation, files etc. for this purpose system and user manuals were prepared. In system manuals, details about the system, which were used to develop, were specified. In user manuals, data flow diagram, menu and screen formats are given. The user for the system are shown the screens and they are thought how to operate the system.

6. MAINTENANCE

The maintenance phase of the software cycle is the time in which a software product performs useful work. After the system is successfully implemented, it should be maintained in a proper manner.

6.1 Corrective Maintenance

Even with the best quality assurance activities, it is likely that they customer will uncover defects in the software. Corrective maintenance changes the software to correct defects.

6.2 Adaptive Maintenance

System maintenance is an important aspect in the software development life cycle. The need for system maintenance is for it to make adaptable to the changes in the environment. There may be social, technical and other environmental changes that affect the system, which is being implemented.

6.3 Enhancement Maintenance

Software product enhancements may involve providing new functional capabilities, improving user displays and mode of interaction, upgrading the performance characteristics of the system. Only through proper system maintenance procedures, the system can be adopted to cope up with these changes.

This project is also requires maintenance on the system side. These should be analyzed for the correctness of its interaction among themselves.

Utmost in the software maintenance is an understanding of program variables. The software maintenance cannot be performed without a complete understanding of program variables. PAT processes to locate and highlight the variables used in the source code. This process is extended to all variables. PAT output includes system configuration details variables impact analysis and can save valuable resources (time).

7. FUTURE ENHANCEMENT

SCOPE FOR FUTURE ENHANCEMENT

The project entitled “**Computer Sales & Service Automation System**” is developed successfully from all the modules. The main advantage of the implementation of this project reduces the time consumption during the manual work. Further; it is very faster and economical to the concern based on the computerization process. It is very economical due to the time saving and quicker process. The process done based on our project is very easier for the users to access it. The calculations done at the computer is very accurate and reliable. It may be stored and referred in the future for the development of the concern with the modern technological enhancements.

- In Future this application is converted into online application. It will allow the user to use this application in anywhere at any time.
- The online booking system will be added in future for booking building through online.

8. CONCLUSION

The world of computers is not static. It is always subject to change. The technology today will become out-dated the very next day. To keep abstract of the technological improvements the system need refinements, so it is concluded, it will be improved for further enhancements, whenever the user needs an additional feature into it.

The project title “**Computer Sales & Service Automation System**” is developed successfully with various modules. This project is categorized into some basic modules, they are, Customer Login, Supplier Process, Sales Details, Cat log Details, Maintenance of Purchase, Sales and Invoice. For every module there should be one report is available

The system was tested with all possible samples of data and the performance of the system proves much effective and the data maintenance and manipulation is achieved practically.

The system has been developed in Visual Basic .net 2008 to reduce the response time and ensure flexibility. The system also gives opportunity for further development and enhancement of the existing system.

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