

# **CHAPTER 1**

## **OVERVIEW OF THE PROJECT**

### **1.1 INTRODUCTION**

Telephone billing system project is to present the requirement of the Computerization of Billing System. The project thus calculates the telephone bills automatically. It does almost every work which is related to automatic telephone billing connection system via- new connection , customer record modification, viewing customer records & all works related to rate of bills, meter readings in addition to bill calculation and bill generation.

“Telephone Billing System” is developed as per seeing the increasing requirement to speed up the work and incorporate a new work culture. Thus a new software has been proposed to reduce manual work, improving work efficiency, saving time and to provide greater flexibility and user-friendliness as the system previously followed was totally manual one with lots of errors. Since it is directly associated with the database, so there is very little maintainability problem with this tool. Since there is very limited usage of separate forms, this tool is very much portable. This tool uses several canvases on the same form. This tool is very much flexible for future enhancements. The main objective while implementing the project

Telephone Billing System were to minimize the work and at the same time increase the speed of the work done and also the information retrieval will become easy. In this project the maintenance of database as well as overall project will become easy. The purpose of the project is to develop a system which is user friendly, easy to use maintain and satisfies all the requirements of the user of the specified system. Security measure will be adopted, by maintaining the login of username and the password. Data redundancy will be greatly reduced because this new system is built using Visual Basic 6.0 as front-end. It entails looking into duplication of efforts bottlenecks and inefficient existing procedures.

## **1.2 MODULE DESIGN**

Our project is implemented using the following modules.

- Input Design.
- Output Design.
- Table Design.

### **1.2.1 INPUT DESIGN**

Input design is the process of converting user-originate inputs to a computer-based format. The goal of design input data is to make data entry as easy, logical and free. The most common source of data processing errors is inactive input data. Effective design of the input data minimizes the error made by data entry operators. Verification and validation is the most important in input design. User-friendly input design enables quick error detecting and correction. We can prevent the user entering invalid data into the databases by warning, neglecting or messaging appropriately. The user is then allowed to input correct data. Some help provisions may aid the user to point out the error. In this system inputs are collected from terminals through keyboard.

### **1.2.2 OUTPUT DESIGN**

Output design has been an ongoing activity from the very beginning of the project. The objective of the output design is to convey the information of all past activities, current status and to emphasize important events. The output generally refers to the results and information that is generated from the system. In the output design phase one or more output media can be selected. Out of which the most common ones are CRT displays and print out. Here only CRT display has been attempted. A rapid enquiry is obtained from CRT displays. From design is made interesting and attractive.

### **1.2.3 TABLE DESIGN**

In this table design we are created tables such as customer records table, call rates table, customer metre reading table, bill record table and the user login table for the easy and effective understanding. The purpose of the project is to develop a system which is

user friendly, easy to use , maintain and satisfies all the requirements of the user of the specified system.

## 1. CUSTOMER RECORDS

Custname	Text
Custadd	Text
Custphno	Number

## 2. CALL RATES

Local	Number
Mobile	Number
STD	Number
ISD	Number
MonthlyRental	Number

## 3. CUSTOMER METER READING

Custphno	Text
MLocal	Number
Mmobile	Number
Mstd	Number
Misd	Number

## 4. BILL RECORD

custname	Text
Custphno	Text
Custadd	Text
Localmt	Number
Mobilemt	Number
STDmt	Number
ISDmt	Number

## 5. LOGIN

LOGIN_ID	AutoNumber
LOGIN_NAME	Text
LOGIN_PASSWORD	Text

## **CHAPTER 2**

### **SYSTEM ANALYSIS**

#### **2.1 EXISTING SYSTEM**

The existing system was a manual one. Whatever be the process involved in the system were done through register (files) . There were lots of complexities involved in the system. When any customer takes new connections then separate files were maintained. Updating of data was very tedious job. It was not easy to do several administrative works like managing rates of calls, addition or modification of metered calls & customer entries.

#### **2.2 DRAWBACKS OF EXISTING SYSTEM**

In the existing system all the office works was done manually. The manual work processes was time consuming and hence slow. Following are the main drawbacks of the existing system:

- The existing system is totally manual thus there are chances of error in Processing.
- The basic and major drawbacks in the existing system are the speed of retrieval of data from files, which leads to delay.
- Maintenance of data is very cumbersome and laborious job.
- The manual jobs such as calculation are more error prone.
- There are plenty of chances of duplicity of data and information.
- Updating is very tedious job.
- There is no central database from where one can get different statistical data at one place.

Since existing system was totally manual which has lots of complexities, shortcomings in itself and all the data was being stored in registers, files .Thus to overcome the limitations of existing system, the new computerized system needed, so that information can be provided to the user more quickly and more accurately.

## **2.3 PROPOSED SYSTEM**

The new system titled “TELEPHONE BILLING SYSTEM” was hence proposed to remove all the drawbacks discussed above. Information is a vital ingredient for the operation and management of any organization. Thus any system should have the ability to provide error free filtered information after processing the required data. This system has been taken up with a view for developing a more sophisticated system that can be easily handled by any kind of users. The proposed system aims at efficient and timely information for decision-making, integrate with other functions, and reduce redundant work.

### **Important features of this proposed system**

- Consistent user interface with high economic features built into it.
- System design in modular and structured way so as to make the integration with other subsystems easier.
- User has complete control as it provides and accept only appropriate and valid data.
- User-friendly error messages are provided wherever necessary.
- Addition, deletion, modification of records as when needed.
- Providing connections to new customers.
- Bill generation for customers.

## **2.4 OBJECTIVES OF THE PROPOSED SYSTEM**

- To reduce workload of staff.
- To reduce the delay in processing time.
- To reduce the delay in bill generation.
- To provide the user-friendliness in all possible ways.
- To provide greater flexibility.
- Make maintenance changes easy.
- To store data in a centralized location to reduce redundancy and increase consistency.

## **2.5 SOFTWARE SPECIFICATION**

### **2.5.1 HARDWARE REQUIREMENTS**

Processor	:	X86 Compatible processor with 1.7 GHz Clock speed
RAM	:	512 MB or more
Hard disk	:	20 GB or more
Monitor	:	VGA/SVGA
Keyboard	:	104 Keys
Mouse	:	2 buttons/ 3 buttons

### **2.5.2 SOFTWARE REQUIREMENTS**

Operating System	:	Windows 2000/XP
Front end	:	Visual Basic 6.0
Back end	:	MS ACCESS

## **CHAPTER 3**

### **SYSTEM IMPLEMENTATION**

#### **3.1 ABOUT VISUAL BASIC 6.0**

Visual Basic 6.0 is an enjoyable language due to its visual environment. Building a windows program in Visual Basic requires dragging and dropping graphic objects on to the screen from a toolbox. Thus Visual Basic is the efficient GUI tools to develop some exciting windows-based application.

Visual Basic 6.0 is much more than just a programming language. The programming language forms the background of all that takes place in a running Visual Basic program. The language is a secondary consideration to the user interface. A windows program offers a high degree of user interaction using the graphical elements that forms the objects on the window the user sees .If the user interface is not correct, user will not like the program.

Visual Basic lets one add menus, text boxes, command buttons, option buttons (for making exclusive choice), check boxes, list boxes, scroll bars and file and directory boxes to black windows. One can use Visual Basic to communicate with other applications, running under windows. Visual Basic offers: More Internet features, better support for data base development, more language feature to make programming job easier.

#### **SOME TOOLS OF VISUAL BASIC 6.0**

- Data access features allow creating databases, front-end applications and scalable server side components for most popular databases formats including Microsoft SQL server and other enterprise level databases.
- Active X technology allows using functionality provided by other applications such as Microsoft Word, Microsoft Excel and other applications and objects could be created using the Professional Enterprise editions of Visual Basic.
- Internet capabilities make it easy to provide access to documents and applications across the Internet or Intranet server applications.

The finished applications are a true .exe files that uses a Visual Basic virtual machine that can be freely distributed.

## **SIGNIFICANCE FEATURES OF VISUAL BASIC 6.0**

**Toolbox:** The Tool Box window differs from the tool bar. The Tool Box is a collection of tool that acts as a repository of controls we can place on forms. Some tools are Selection Pointer, Picture Box, Label, Text Box, Frame Button, Command Botany, Check Box, Option Button etc.

### **Text Boxes:**

It is used to display text or to accept user input. Most of the code is written to process the information users enter into them. Several properties of text boxes are as follows: -

#### **Text:**

The text property in text box is the analog of the caption property for a command button or a form; it controls text the users see. It determines whether text on the control such as label or command button, is left justified, centered, or right justified on the control. The Alignment property take one of the three values: 0-Left justify, 1-Right justify, 2-Center.

#### **Max Length:**

This property specifies the maximum number of characters that the text box will accept. A value of 0 indicates that the user can enter a value of any length.

#### **Locked:**

This property determines whether the user can enter a value or change the default value of the text box. If true, the user cannot change the text box value until the program, at run time assigns a false to this property.

#### **Labels:**

Use Labels to display information programmer does not want the user to be able to change. Most common use for Labels is to identify a text box or other control by describing its contents. Another common use is to display help information.

#### **Message Boxes:**



Message boxes display information in the dialog box superimposed on the form. They want for the user to choose a button before return to the application box.

## **3.2 ABOUT MICROSOFT ACCESS**

### **Database:**

A database is a set of data, organized for easy access. The database is the actual data. It is the database that you will be accessing when you need to retrieve data.

### **Data Dictionary:**

The data dictionary is a set of tables Access uses to maintain information about the database. The data dictionary contains information about tables, indexes, clusters, and so on.

### **DBA (Database Administrator):**

The DBA is the person responsible for the operation, configuration, and performance of the database. The DBA is charged with keeping the database operating smoothly, ensuring that backups are done on a regular basis and installing new software. Other responsibilities might include planning for future expansion and disk space needs, creating databases and tablespaces, adding users and maintaining security, and monitoring the database and retuning it as necessary. Large installations might have teams of DBAs to keep the system running smoothly; alternatively, the tasks might be segmented among the DBAs.

### **DBMS or RDBMS:**

The Database Management System is the software and collection of tools that manages the database. A Relational Database Management System is a DBMS that is relational in nature. This means that the internal workings access data in a relational manner. Access is an RDBMS.

### **Query**

A query is a read-only transaction against a database. A query is generated using the SELECT statement. Users generally distinguish between queries and other transaction types because a query does not change the data in the database.

## **CHAPTER 4**

### **SYSTEM DESIGN**

#### **4.1 INTRODUCTION**

System design is the second step in the system life cycle, in which overall design of the system is achieved. The functionalities of the system is designed and studied in this phase. The first step is designing of program specification. This determines the various data inputs to the system, data flow and the format in which output is to be obtained. Design phase is a transmission phase because it is a transition from user oriented document to computer data. The activity in the design phase is the allocation of functions to manual operations, equipment and computer programs. Flow charts prepared in the study time received and decomposed until all functions in the system perform evidently.

Design is a multistep process that focuses on data structures, software architecture, procedural details( algorithms etc) and links between the modules. The design process goes through logical and physical stages. In logical design reviews are made linking existing system and specification gathered. The physical plan specifies any hardware and software requirement, which satisfies the local design.

Modularization of task is made in the mode. The success of any integrated system depends on the planning of each and every fundamental module. Usually a project is revised in step by step sequence. Inter phase management of such module is also important. Software design methodology changes continually as new methods, better analysis and broader understanding evolve.

Various techniques for software design do exist with the availability of criteria for design quality. Software design leads three technical activities-design, code and test. The techniques for software design do exist with the availability of criteria for design quality. Software design leads three technical activities-design, code and test that are required to build

and verify software. Each activity transforms information, which validates the software. The design system converts theoretical solution introduced by the feasibility study into a logical reality.

## **4.2 DESIGN STRATEGY**

The design strategy is a vital aspect of the system to be developed. The design of the software reflects the basic understanding of the problem. For designing a good system what we have to be is to get correct definition of the problem and analyze the problem thoroughly.

The design of a system should be such that if a small portion is changed. The rest of the system should be unaffected. This is the flexibility of the system. Greater the system flexibility greater will be the system reliability. While carrying out the job of designing of a new system one has to consider many factors. These factors include the drawbacks and limitations of the present manual system as well as of the features and advantages of the proposed system. It should be designed in such a manner that even a layman can run it without any difficulty.

An important quality of a software must enjoy is “user friendliness”. It can be achieved in many ways like providing menu, giving context sensitive help, doing automatic validation to input data, etc. Another main factor is speed efficiency. In order to achieve speed efficiency, the program should be designed accordingly and the user is provided with a compiled copy of the software package with necessary data file format rather than source code.

Design of input and output formats is equally important for any design. The output format should be designed in such a way that it must reflect all the required information in detail. The design of the database itself such as type of data stored, size of data etc. Some of the decisions made during database design are:

- Which data items are to be recorded and in which database.
- Length of each record, based on the characteristics of the data items on which it is based.
- Data who's unauthorized change must be prevented.

- Data, which must be avoided from redundancy.
- Maintenance of data integrity etc.
- Avoid over writings.
- Prevents invalid data access and changes.

## 4.3 PROJECT DESCRIPTION

### 4.3.1 DATAFLOW DIAGRAM



