The introduction of the high standard Low Floor Busses, by the, Delhi Transport Corporation in India was a great leap in the history on Indian Public Transportation. With this introduction the government is also introducing Electronic Ticket Machines on the buses. The ticket machines would end the use of the hefty bunches of ticket racks carried by the conductors. It would also end the practice of tearing out tickets and marking fare stages.Instead, the conductor would just have to key in the details about the fare stage and the ticket machine would print out the ticket. The machine weighs only 800 grams and is convenient to carry. The parameters are almost like that of a railway ticket, the only difference being that the machine is portable.The machine can print over 2,300 tickets, including the journey report in order to facilitate inspection by the corporation's checking inspectors. Each machine costs around Rs.10,000 to Rs.12,000. The DTC has budgeted over Rs.2 cores (Rs. 20,000,000) for this innovative step which would have the support of the Information Technology Department.



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Mehtab Alam

# Electronic Ticket Machine

## 1 Touch Tickets, Everywhere!

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# Electronic Ticket Machine

## ABSTRACT

The introduction of the high standard Low Floor Busses, by the, Delhi Transport Corporation in India was a great leap in the history on Indian Public Transportation. With this introduction the government is also introducing Electronic Ticket Machines on the buses. The ticket machines would end the use of the hefty bunches of ticket racks carried by the conductors. It would also end the practice of tearing out tickets and marking fare stages.

Instead, the conductor would just have to key in the details about the fare stage and the ticket machine would print out the ticket. The machine weighs only 800 grams and is convenient to carry. The parameters are almost like that of a railway ticket, the only difference being that the machine is portable.

The machine can print over 2,300 tickets, including the journey report in order to facilitate inspection by the corporation's checking inspectors. Each machine costs around Rs.10,000 to Rs.12,000. The DTC has budgeted over Rs.2 cores (Rs. 20,000,000) for this innovative step which would have the support of the Information Technology Department. In old days the DTC was spending Rs. 85 lakhs on printing tickets. The ticket machines would help prevent loss on account of malpractice. It would also help in providing adequate data to the corporation, particularly with regard to the boarding of passengers from fare stages and important points. This would help the corporation prepare and organize its schedules more efficiently on the basis of traffic demand. Besides, it would provide data on concessions given to various sections. Another additional feature is that the data in the ticket machine could be fed into the computer. More over the depots of the corporation would be fully computerized so we want to add some other modules in our domain for depot's verification.

An Electronic Ticket Machine

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# OVERVIEW OF THE PROJECT

# INTRODUCTION

The ticket machines would end the use of the hefty 1.5-kg ticket racks carried by conductors. It would also end the practice of tearing out tickets and marking fare stages. The Conductor would just have to key in the details about the fare stage and the ticket machine would print out the ticket. The machine weighs only 800 grams and is convenient to carry. The parameters are almost like that of a railway ticket, the only difference being that the machine is portable. The machine can print out 2,300 tickets, including the journey report in order to facilitate inspection by the corporation's checking inspectors.

The ticket machines would help prevent loss on account of malpractice. It would also help in providing adequate data to the corporation, particularly with regard to the boarding of passengers from fare stages and important points. This would help the corporation prepare and organize its schedules more efficiently on the basis of traffic demand. Besides, it would provide data on concessions given to various sections. Another additional feature is that the data in the ticket machine could be fed into the computer. More over the depots of the corporation would be fully computerized so we want to add some other modules in our domain for depot’s verification.

This project is modularized as the following:

i. Management of Route

ii. Trip Details

iii. Bus Details

iv. Bus Stops

v. Bus Ticketing

1. **Management of Routes**

This module include information about how we can manage the routes for a particular bus services so in the case of Route management module we must know the details about route number, number of stops ,fare stages and running time of the particular bus more over we want to manipulate and stored these information successfully.

2. **Trip information**

Each journey is identified as a trip. Each ticket must contain the trip no so that calculation of passenger can be done easily. Here in this section we want to know start time and route no of the bus this information can be manipulate and stored successfully.

3. **Bus Detail**

In this module all bus details are stored and manipulated, in bus detail module contains minimum charge, type, depot, fare increment, bus number, and passenger's states (child or adult) are manipulate and stored.

4. **Bus Stops**

Bus Stops module includes information about what are the main bus stops of a particular bus. This module connected to the route of the bus and it is used to store stop number, stop name and fare stages and Route number

5. **Bus Ticketing**

Ticketing is the most important module in this Project which uses all the tables together and calculates fare for the passengers. Venting the tickets is done using the route number, bus type, beginning stop, end stop, ticket number, persons (Adult/child) rate, date and time also we want to print the all these information. In order to do the calculation data has to be pulled out from stops, bus, trip and route. Number of passengers & the states are entered by the Venter and to produce the tickets.

# OBJECTIVE

The goal of the introduction of the Electronic Ticket Machine on the buses is to reduce practice of tearing out tickets and marking fare stages and journey details of a passenger.

The other goal of the introduction of the system is to reduce the loss on account of malpractice.

The project has the following objectives:

i. To remove the practice of tearing out tickets and marking fare stages for the passengers.

ii. Reduce the loss to the government on account of malpractice.

iii. Carrying the machine would be easier the carrying and maintaining the number of ticket bundles.

iv. Inspection by the corporations would be lot easier.

The system would also help the conductors doing their work quickly and efficiently, in much less time as compared to the current system.

# SYSTEM STUDY AND ANALYSIS

# INTRODUCTION

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 minutest 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.

A detailed study of the process must be made by various techniques like interviews, questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This system is called the existing system. Now the existing system is subjected to close study and problem areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solutions are given as proposals. The proposal is then weighed with the existing system analytically and the best one is selected. The proposal is presented to the user for an endorsement by the user. The proposal is reviewed on user request and suitable changes are made. This is loop that ends as soon as the user is satisfied with proposal.

Preliminary study is the process of gathering and interpreting facts, using the information for further studies on the system. Preliminary study is problem solving activity that requires intensive communication between the system users and system developers. It does various feasibility studies. In these studies a rough figure of the system activities can be obtained, from which the decision about the strategies to be followed for effective system study and analysis can be taken.

Here in the project E-Ticketing, a detailed study of existing system is carried along with all the steps in system analysis. An idea for creating a better project was carried and the next steps were followed.

# FEASIBILITY STUDY

An important outcome of the preliminary investigation is the determination that the system requested is feasible. Feasibility study is carried out to select the best system that meets the performance requirements.

Feasibility study is both necessary and prudent to evaluate the feasibility of the project at the earliest possible time. It involves preliminary investigation of the project and examines whether the designed system will be useful to the organization. Months or years of effort, thousand for millions of money and untold professional embarrassment can be averted if an in-conceived system is recognized early in the definition phase. Feasibility studies aim to objectively and rationally uncover the strengths and weaknesses of the existing business or proposed venture, opportunities and threats as presented by the environment, the resources required to carry through, and ultimately the prospects for success. In its simplest terms, the two criteria to judge feasibility are cost required and value to be attained. As such, a well-designed feasibility study should provide a historical background of the business or project, description of the product or service, accounting statements, details of the operations and management, marketing research and policies, financial data, legal requirements and tax obligations.

Generally, feasibility studies precede technical development and project implementation.

The different types of feasibility are:

i. Technical feasibility

ii. Operational feasibility

iii. Economical feasibility

iv. Legal feasibility

v. Schedule feasibility

## 1. Technical feasibility

Technical Feasibility deals with the hardware as well as software requirements. Technology is not a constraint to type system development. We have to find out whether the necessary technology, the proposed equipment's have the capacity to hold

the data, which is used in the project, should be checked to carry out this technical feasibility.
The technical feasibility issues usually raised during the feasibility stage of investigation includes these.

This software is running in windows 7 Operating System, which can be easily installed.
The hardware required is Pentium based server.
The system can be expanded.

2. **Behavioral Feasibility**

This feasibility test asks if the system will work when it is developed and installed.

Operational feasibility in this project:

- The proposed system offers greater level of user-friendliness.
- The proposed system produces best results and gives high performance.
- It can be implemented easily.

So this project is operationally feasible.

3. **Economical feasibility**

Economical Feasibility deals about the economical impact faced by the organization to implement a new system. Financial benefits must equal or exceed the costs. The cost of conducting a full system, including software and hardware cost for the class of application being considered should be evaluated.

Economic Feasibility in this project:

- The cost to conduct a full system investigation is possible.
- There is no additional manpower requirement.
- There is no additional cost involved in maintaining the proposed system.

4. **Legal feasibility**

Determines whether the proposed system conflicts with legal requirements, e.g. a data processing system must comply with the local Data Protection Acts.

5. **Schedule feasibility**

A project will fail if it takes too long to be completed before it is useful. Typically this means estimating how long the system will take to develop, and if it can be completed in a given time period using some methods like payback period. Schedule feasibility is a measure of how reasonable the project timetable is. Given our

technical expertise, are the project deadlines reasonable? Some projects are initiated with specific deadlines. You need to determine whether the deadlines are mandatory or desirable.

# OTHER FEASIBILITY FACTORS

1. **Market and real estate feasibility**

Market feasibility studies typically involve testing geographic locations for a real estate development project, and usually involve parcels of real estate land. Developers often conduct market studies to determine the best location within a jurisdiction, and to test alternative land uses for given parcels. Jurisdictions often require developers to complete feasibility studies before they will approve a permit application for retail, commercial, industrial, manufacturing, housing, office or mixed-use project. Market Feasibility takes into account the importance of the business in the selected area.

2. **Resource feasibility**

This involves questions such as how much time is available to build the new system, when it can be built, whether it interferes with normal business operations, type and amount of resources required, dependencies,

3. **Cultural feasibility**

In this stage, the project's alternatives are evaluated for their impact on the local and general culture. For example, environmental factors need to be considered and these factors are to be well known. Further an enterprise's own culture can clash with the results of the project.

4. **Financial feasibility**

In case of a new project, financial viability can be judged on the following parameters:
Total estimated cost of the project
Financing of the project in terms of its capital structure, debt equity ratio and promoter's share of total cost
Existing investment by the promoter in any other business
Projected cash flow and profitability

# OUTPUT

The feasibility study outputs the **feasibility study report**, a report detailing the evaluation criteria, the study findings, and the recommendations.

# HARDWARE AND SOFTWARE REQUIRMENT

## HARDWARE REQUIREMENTS

Hardware requirement are the basic need of the system or the package, which is been developed and will be deployed upon the system, which should have these basic components or fulfill these basic hardware needs of these package.

The following hardware is recommended for the user.

| | |
|---|---|
| Processor | Intel Pentium IV 2.4 GHZ or above |
| Clock speed | 500 MHZ |
| RAM | 32MB or above |
| System bus | 32 bits |
| Monitor | Color monitor |
| Hard disk | 8 GB or above |
| CD Drive | Any CD ROM |
| Input device | Key board, Mouse |

## SOFTWARE SPECIFICATION

| | |
|---|---|
| Operating System | MS WINDOWS XP SP2 |
| Front End | Visual Studio 2012, ASP.Net |
| Back End | SQL Server |
| Additional Software | DOTNet framework 3.5 |

# EXISTING SYSTEM

Existing system refers to the system that is being followed till now. The existing system requires more computational time, more manual calculations, and the complexity involved in Selection of features is high. The other disadvantages are lack of security of data, Deficiency of Data accuracy, Time consuming etc. To avoid all these limitations and make the working more accurately the system needs to be computerized. Here in the Electronic bus ticketing, a detailed study of existing system is carried along with all the steps in system analysis.

## DRAW BACKS OF EXISTING SYSTEM

Here in the Electronic bus ticketing, a detailed study of existing system is carried along with all the steps in system analysis. An idea for creating a better project was carried and the next steps were followed.

i. Lack of security of data

ii. More man power

iii. Time consuming

iv. Consumes large volume of paper work

v. Needs manual calculations

vi. No direct role for the higher officials

vii. Damage of machines due to lack of attention.

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

# 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 existing system has several disadvantages and many more difficulties to work well. The proposed system tries to eliminate or reduce these difficulties up to some extent. The proposed system will help the user to reduce the workload and mental conflict. The proposed system helps the user to work user friendly and he can easily do his jobs without time lagging.

## ADVANTAGES OF 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:

i. Insure data accuracy

ii. Minimize manual data entry

iii. Minimum time needed for the various processing

iv. Greater efficiency

v. Better Service

vi. Minimum time required

vii. The ticket machines would help prevent loss on account of malpractice

viii. It would also help in providing adequate data to the corporation, particularly with regard to boarding of passengers from fare stages and important points.

ix. This would help the corporation prepare and organize its schedules more efficiently on the basis of traffic demand.

x. It would provide data on concessions given to various sections.

xi. Another additional feature is that the data in the ticket machine could be fed into the computer.

# SYSTEM DESIGN

# INTRODUCTION

System Design is the most creative and challenging phase in the system life cycle. Design is the first step into the development phase for any engineered product or system. Design is a creative process. A good design is the key to effective system. System design is a solution *how to approach* the creation of a new system. System design transforms a logic representation of what is required to do into the physical specification. The specification is converted into physical reality during development.

## LOGICAL DESIGN

The logical flow of a system and define the boundaries of a system. It includes the following steps:

i. Reviews the current physical system – its data flows, file content, volumes, frequencies etc.

ii. Prepares output specifications – that is, determines the format, content and frequency of reports.

iii. Prepares input specifications – format, content and most of the input functions.

iv. Prepares edit, security and control specifications.

v. Specifies the implementation plan.

vi. Prepares a logical design walk through of the information flow, output, input, controls and implementation plan.

vii. Reviews benefits, costs, target dates and system constraints.

## PHYSICAL DESIGN

Physical system produces the working systems by define the design specifications that tell the programmers exactly what the candidate system must do. It includes the following steps.

i. Design the physical system.

ii. Specify input and output media.

iii. Design the database and specify backup procedures.

iv. Design physical information flow through the system and a physical design Walk through.

v. Plan system implementation.

vi. Prepare a conversion schedule and target date.

vii. Determine training procedures, courses and timetable.

viii. Devise a test and implementation plan and specify any new hardware/software.

ix. Update benefits, costs, conversion date and system constraints.

## DESIGN/SPECIFICATIONS ACTIVITIES

i. Concept formulation.

ii. Problem understanding.

iii. High level requirements proposals.

iv. Feasibility study.

v. Requirements engineering.

vi. Architectural design.

# INPUT DESIGN

Input Design deals with what data should be given as input, how the data should be arranged or code, the dialog to guide the operating personnel in providing input, methods for preparing input validations and steps to follow when error occur. Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system. It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.

When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow.

# OUTPUT DESIGN

A quality output is one, which meets the requirements of the end user and presents the information clearly. The objective of output design is to convey information about past activities, current status or projections of the future, signal important events, opportunities, problems, or warnings, trigger an action, confirm an action etc. Efficient, intelligible output design should improve the system's relationship with the user and helps in decisions making. In output design the emphasis is on displaying the output on a CRT screen in a predefined format. The primary consideration in design of output is the information requirement and objectives of the end users. The major formation of the output is to convey the information and so its layout and design need a careful consideration.

# DATA FLOW DIAGRAM

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modeling its process aspects. Often they are a preliminary step used to create an overview of the system which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design).

A DFD shows what kinds of data will be input to and output from the system, where the data will come from and go to, and where the data will be stored. It does not show information about the timing of processes, or information about whether processes will operate in sequence or in parallel (which is shown on a flowchart).

Data Flow Diagram serves two purposes:

i. To provide annunciation of how data are transformed as they move through the system.
ii. To depict the functions that transforms the data flow.

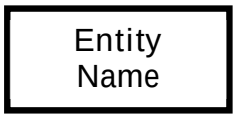
DFDs are an excellent mechanism for communicating with the customer during requirement analysis and are widely used for the representation of external and top-level internal design specification. In the latter situations, DFDs are quite valuable for subsystem, files and data links. The DFD methodology is quite effective, especially when the required design is unclear. In the process, many levels of DFDs are created depending upon the level of details needed

The Level 0 DFD is also called Context Level DFD. It depicts the overview of the entire system. The major external entities, a single process and the output stores constitute the level-0 DFD. Though this diagram does not depict the system in detail, it represents the overall inputs, process and output of the entire system at a very high level.

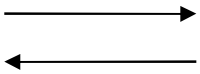
The Level 0 DFD is now expended into a level 1 model. It should be noted that information flow continuity is maintained between level 0 and level 1. The process represents at DFD level 1 further refined into lower levels. This further refinement is continued until an easily implement able program component is reached.

## SYMBOLS USED IN DFD

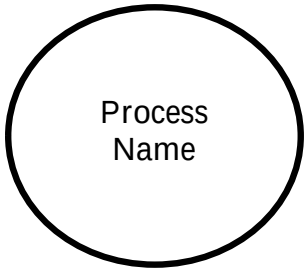
An external entity




Dataflow



Processes

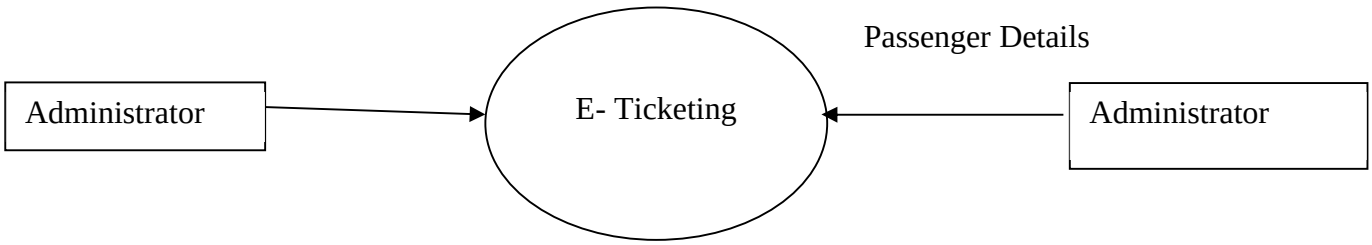



Data Store

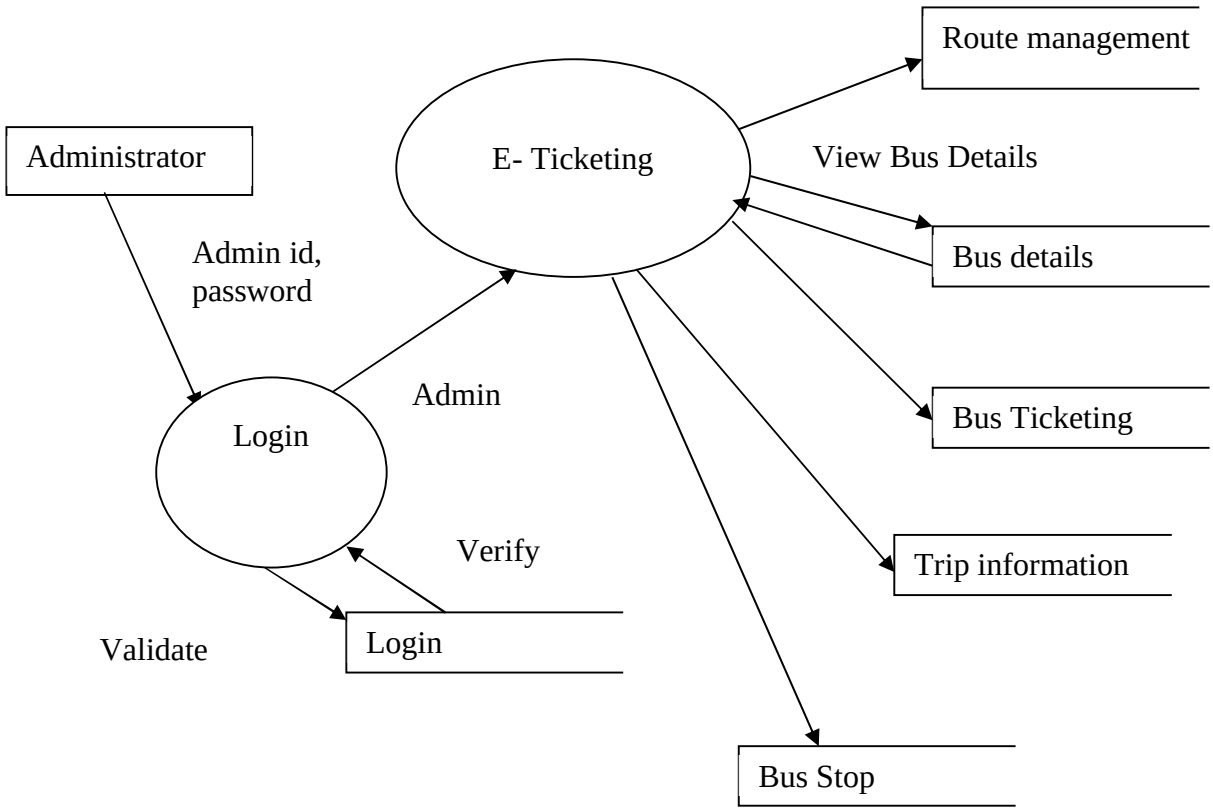

## CONTEXT LEVEL DIAGRAM

This level shows the overall context of the system and its operating environment and shows the whole system as just one process. It does not usually show data stores, it only shows that the data is stored and access from the database.

# CONTEXT LEVEL DFD



# LEVEL 1 DFD ADMINISTRATOR



# DATABASE DESIGN

A database is an organized mechanism that has the capability of storing information through which a user can retrieve stored information in an effective and efficient manner. The data is the purpose of any database and must be protected.

The database design is a two level process. In the first step

i. User requirements are gathered together and a database is designed which will meet these requirements as clearly as possible. This step is called Information Level Design and it is taken independent of any individual Database Management System (DBMS).

ii. In the second step, this Information level design is transferred into a design for the specific DBMS that will be used to implement the system in question. This step is called Physical Level Design, concerned with the characteristics of the specific DBMS that will be used.

A database design runs parallel with the system design. The organization of the data in the database is aimed to achieve the following two major objectives.

i. Data Integrity

ii. Data independence

# DATABASE TABLE DESIGN

## BOOKINGS DATABASE

bookings: Query(...TA\DATABASE.MDF) | Default.aspx

| | bookingid | serviceid | jdate | seatno | passengername | gender | age | phoneno | bookingdate |
|---|---|---|---|---|---|---|---|---|---|
| ▶ | 6 | 0 | 11/29/2012 12:00:00 A... | 3 | mehtab Alam | m | 21 | 9876543210 | 11/29/2012 9:43... |
| | 2 | 1 | 2/22/2010 12:00:00 AM | 1 | Mr. Larry | M | 65 | 3434343 | 2/22/2010 8:20:... |
| | 3 | 1 | 2/22/2010 12:00:00 AM | 2 | Mr. Steve | M | 55 | 34534343 | 2/22/2010 8:21:... |
| | 4 | 0 | 11/29/2012 12:00:00 A... | 1 | maddy | m | 19 | 9555219876 | 11/29/2012 8:40... |
| | 5 | 0 | 11/29/2012 12:00:00 A... | 2 | mehtab alam | m | 0 | | 11/29/2012 9:23... |
| | 7 | 0 | 11/29/2012 12:00:00 A... | 4 | mehtab | m | 21 | 9555219876 | 11/29/2012 9:51... |
| | 8 | 0 | 11/29/2012 12:00:00 A... | 5 | mehtab | m | 21 | 9555219876 | 11/29/2012 9:51... |
| * | NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |

## FEEDBACK DATABASE

feedback: Query(...TA\DATABASE.MDF) | Default.aspx

| | feedbackid | serviceid | jdate | seatno | feedback | df |
|---|---|---|---|---|---|---|
| * | NULL | NULL | NULL | NULL | NULL | NULL |

## BUSES DATABASE

buses: Query(mad...TA\DATABASE.MDF) | Default.aspx

| serviceid | jdate | vehicleno | availableseats |
|---|---|---|---|
| 1 | 2/20/2013 12:00... | NULL | 40 |
| 1 | 2/21/2013 12:00... | 2/20/2013 12:00:00 AM | |
| 1 | 2/22/2013 12:00... | NULL | 38 |
| 1 | 2/23/2013 12:00... | NULL | 40 |
| 1 | 2/24/2013 12:00... | NULL | 40 |
| 1 | 2/25/2013 12:00... | NULL | 40 |
| 2 | 2/20/2013 12:00... | NULL | 30 |
| 2 | 2/21/2013 12:00... | NULL | 30 |
| 2 | 2/22/2013 12:00... | NULL | 29 |
| 2 | 2/23/2013 12:00... | NULL | 30 |
| 2 | 2/24/2013 12:00... | NULL | 30 |
| 2 | 2/25/2013 12:00... | NULL | 30 |
| 3 | 2/20/2013 12:00... | NULL | 40 |
| 3 | 2/21/2013 12:00... | NULL | 40 |
| 3 | 2/22/2013 12:00... | NULL | 40 |
| 3 | 2/23/2013 12:00... | NULL | 40 |
| 3 | 2/24/2013 12:00... | NULL | 40 |
| 3 | 2/25/2013 12:00... | NULL | 40 |
| 4 | 2/20/2013 12:00... | NULL | 40 |
| 4 | 2/21/2013 12:00... | NULL | 40 |
| 4 | 2/22/2013 12:00... | NULL | 40 |
| 4 | 2/23/2013 12:00... | NULL | 40 |
| 4 | 2/24/2013 12:00... | NULL | 40 |
| 4 | 2/25/2013 12:00... | NULL | 40 |

## SERVICES DATABASE

services: Query(...ATA\DATABASE.MDF) | Default.aspx

| serviceid | fromcity | tocity | noseats | sttime | runningtime | bustype | frequency | fare |
|---|---|---|---|---|---|---|---|---|
| 1 | New Delhi | Allahabad | 40 | 6:30pm | 12:00 | AC | daily | 750 |
| 2 | New Delhi | Jaipur | 30 | 8:30pm | 12:00 | Non AC | daily | 950 |
| 3 | New Delhi | Kanpur | 40 | 5:30pm | 15:00 | AC | daily | 850 |
| 4 | New Delhi | Srinagar | 40 | 9:30pm | 8:00 | AC | daily | 450 |
| 5 | New Delhi | Lucknow | 40 | 5:30pm | 15:00 | AC | daily | 1000 |
| NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |

# SOFTWARE DESCRIPTION

## OVERVIEW OF ASP.Net AND SQL SERVER

### i. The Control Properties

Before writing an event procedure for the control to response to a user's input, you have to set certain properties for the control to determine its appearance and how it will work with the event procedure. You can set the properties of the controls in the properties window or at runtime.

### ii. The Text Box

The text box is the standard control for accepting input from the user as well as to display the output. It can handle string (text) and numeric data but not images or pictures. String in a text box can be converted to a numeric data by using the function Val(text).

### iii. The Label

The label is a very useful control for Visual Basic, as it is not only used to provide instructions and guides to the users, it can also be used to display outputs. One of its most important properties is Caption. Using the syntax label. Caption, it can display text and numeric data. You can change its caption in the properties window and also at runtime.

### iv. The Command Button

The command button is one of the most important controls as it is used to execute commands. It displays an illusion that the button is pressed when the user click on it. The most common event associated with the command button is the Click event.

### v. The Picture Box

The Picture Box is one of the controls that is used to handle graphics. You can load a picture at design phase by clicking on the picture item in the properties window and select the picture from the selected folder. You can also load the picture at runtime using the LoadPicture method.

### vi. The Image Box

The Image Box is another control that handles images and pictures. It functions almost identically to the picture box. However, there is one major difference, the image in an Image Box is stretchable, which means it can be resized. This feature is not available in the Picture Box. Similar to the Picture Box, it can also use the LoadPicture method to load the picture.

vii. **The List Box**

The function of the List Box is to present a list of items where the user can click and select the items from the list. In order to add items to the list, we can use the AddItem method.

**viii. The Check Box**

The Check Box control lets the user selects or unselects an option. When the Check Box is checked, its value is set to 1 and when it is unchecked, the value is set to 0. You can include the statements Check1.Value=1 to mark the Check Box and Check1.Value=0 to unmark the Check Box, as well as use them to initiate certain actions.

ix. **The Option Box**

The Option Box control also lets the user selects one of the choices. However, two or more Option Boxes must work together because as one of the Option Boxes is selected, the other Option Boxes will be unselected. In fact, only one Option Box can be selected at one time. When an option box is selected, its value is set to "True" and when it is unselected; its value is set to "False". In the following example, the shape control is placed in the form together with six Option Boxes. When the user clicks on different option boxes, different shapes will appear. The values of the shape control are 0, 1, and 2,3,4,5 which will make it appear as a rectangle, a square, an oval shape, a rounded rectangle and a rounded square respectively.

x. **The Directory List Box**

The Directory List Box is for displaying the list of directories or folders in a selected drive. When you place this control into the form and run the program, you will be able to select different directories from a selected drive in your computer.

## Database File

This is the main file that encompasses the entire database and that is saved to the hard-drive or floppy disk.
Example: StudentDatabase.mdb

i. Table: A table is a collection of data about a specific topic. There can be multiple tables in a database.
ii. Field: Fields are the different categories within a Table. Tables usually contain multiple fields.
iii. Datatypes: Datatypes are the properties of each field. A field only has 1 datatype.

# SYSTEM TESTING AND IMPLEMEN-TATIONS

# TESTING

Testing is a process of executing a program with the interest of finding an error. A good test is one that has high probability of finding the yet undiscovered error. Testing should systematically uncover different classes of errors in a minimum amount of time with a minimum amount of efforts. Two classes of inputs are provided to test the process:

i. A software configuration that includes a software requirement specification, a design specification and source code.

ii. A software configuration that includes a test plan and procedure, any testing tool and test cases and their expected results.

## TYPES OF TESTING

Testing is divided into several distinct operations:

i. Unit Testing

Unit test comprises of a set tests performed by an individual program prior to the integration of the unit into large system. A program unit is usually the smallest free functioning part of the whole system. Module unit testing should be as exhaustive as possible to ensure that each representation handled by each module has been tested. All the units that makeup the system must be tested independently to ensure that they work as required.

ii. Integration Testing

Integration testing is a system technique for constructing the program structure while at the same time conducting tests to uncover errors associated with interfacing. The objective is to take unit tested modules and build a program structure that has been dictated by design. Bottom-up integration is the traditional strategy used to integrate the components of a software system into functioning whole. Bottom-up integration consists of unit test followed by testing of the entire system. A sub-system consists of several modules that communicated with other defined interface.

iii. Validation Testing

After validation testing, software is completely assembled as a package, interfacing errors that have been uncovered and corrected and the final series of software test; the validation test begins. Steps taken during software design and testing can greatly improve the probability of successful integration in the larger system. System testing is actually a series of different tests whose primary purpose is to fully exercise the compute –based system.

iv. Recovery Testing

It is a system that forces the software to fail in a variety of ways and verifies that the recovery is properly performed.

v. Security Testing

It attempts to verify that protection mechanisms built into a system will in fact protect it from improper penetration. The system's security must of course be tested from in vulnerability form frontal attack.

vi. Stress Testing

Stress tools are designed to confront programs with abnormal situations. Stress testing executes a system in a manner that demands resources in abnormal quantity and volume.

vii. Black Box Testing

Black box testing is done to find out the following information as shown in below:

- Incorrect or missing functions.
- Interface errors.
- Errors or database access.
- Performance error.
- Termination error.

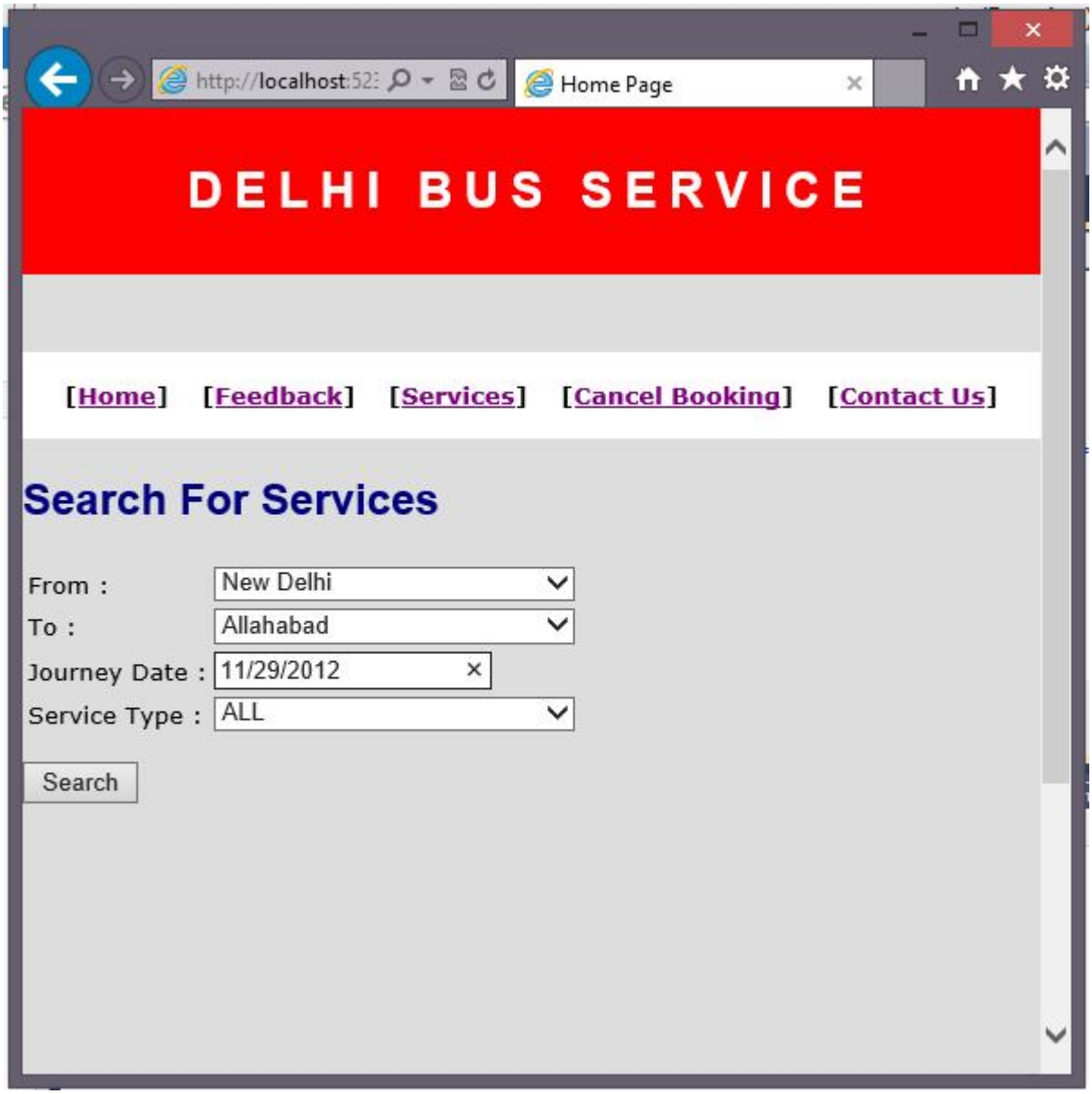
The mentioned testing is carried out successfully for this application according to the user's requirement specification.

viii. Test Data Output

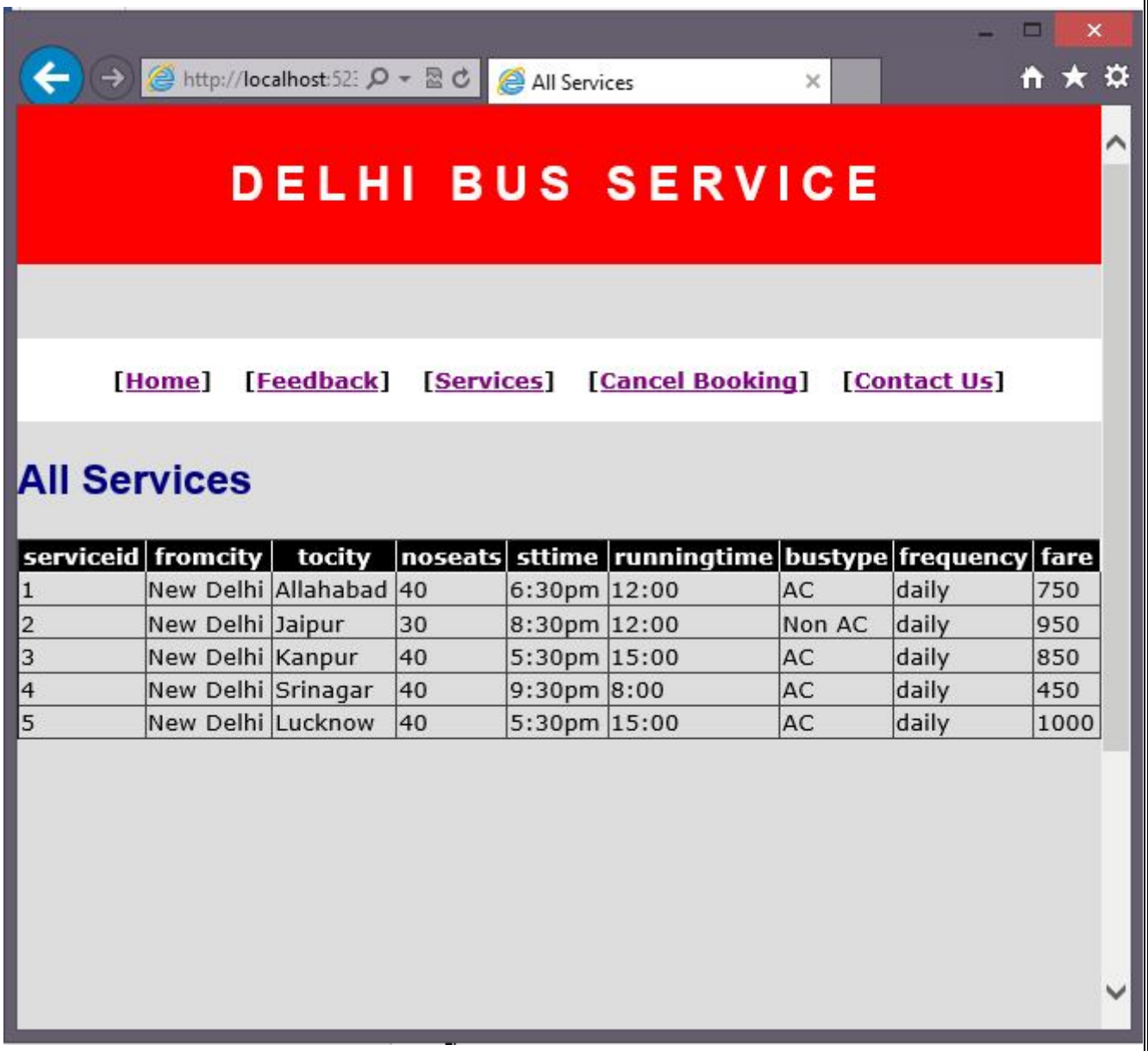
After preparing test data, the system under study is tested using the test data. While testing the system using test data, errors are again uncovered and corrected by using above testing and corrections are also noted for future use.

# SCREEN SHOTS

## HOME PAGE (BOOKING)

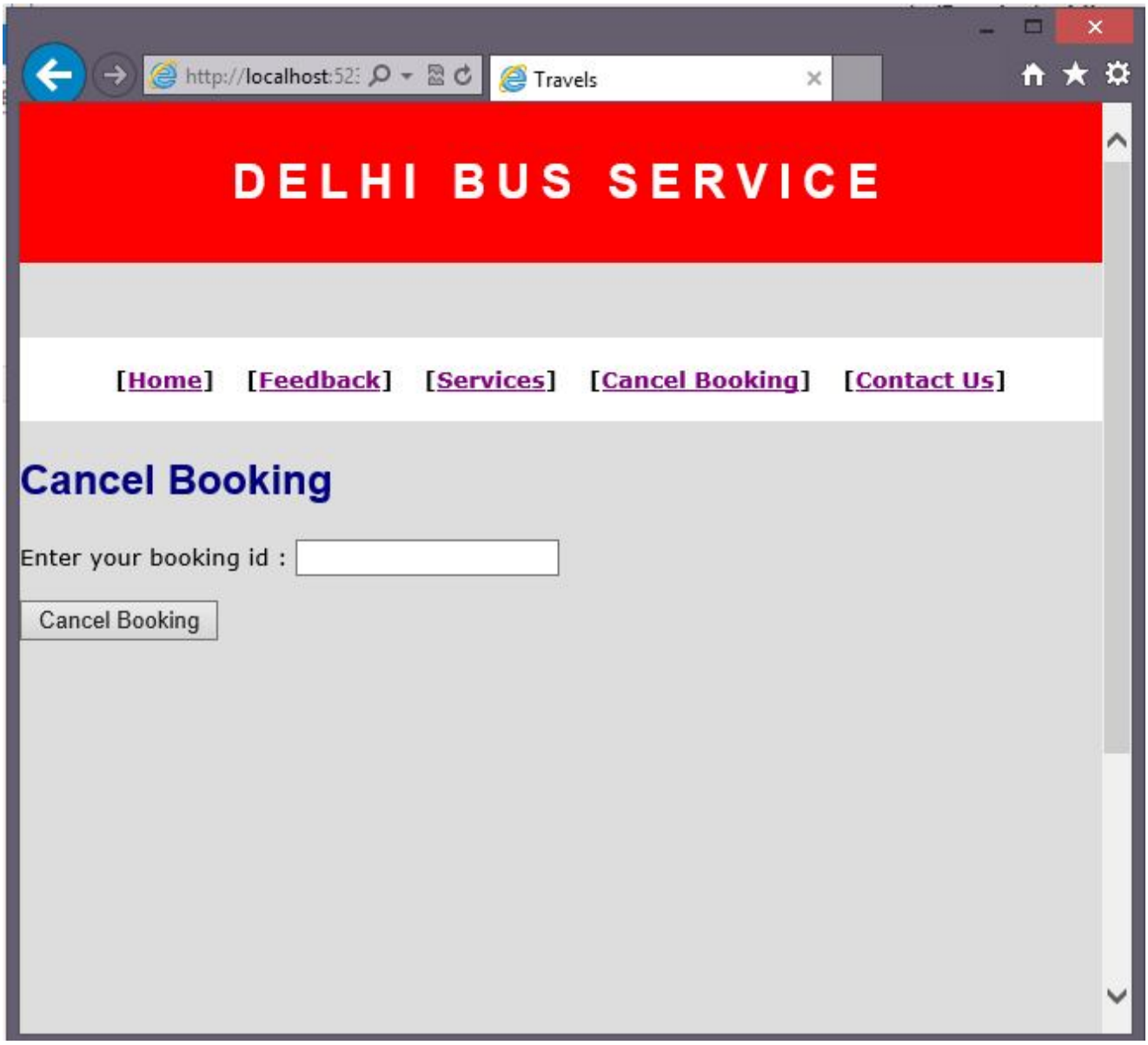


## ALL SERVICES




| serviceid | fromcity | tocity | noseats | sttime | runningtime | bustype | frequency | fare |
|---|---|---|---|---|---|---|---|---|
| 1 | New Delhi | Allahabad | 40 | 6:30pm | 12:00 | AC | daily | 750 |
| 2 | New Delhi | Jaipur | 30 | 8:30pm | 12:00 | Non AC | daily | 950 |
| 3 | New Delhi | Kanpur | 40 | 5:30pm | 15:00 | AC | daily | 850 |
| 4 | New Delhi | Srinagar | 40 | 9:30pm | 8:00 | AC | daily | 450 |
| 5 | New Delhi | Lucknow | 40 | 5:30pm | 15:00 | AC | daily | 1000 |

## CANCEL BOOKINS



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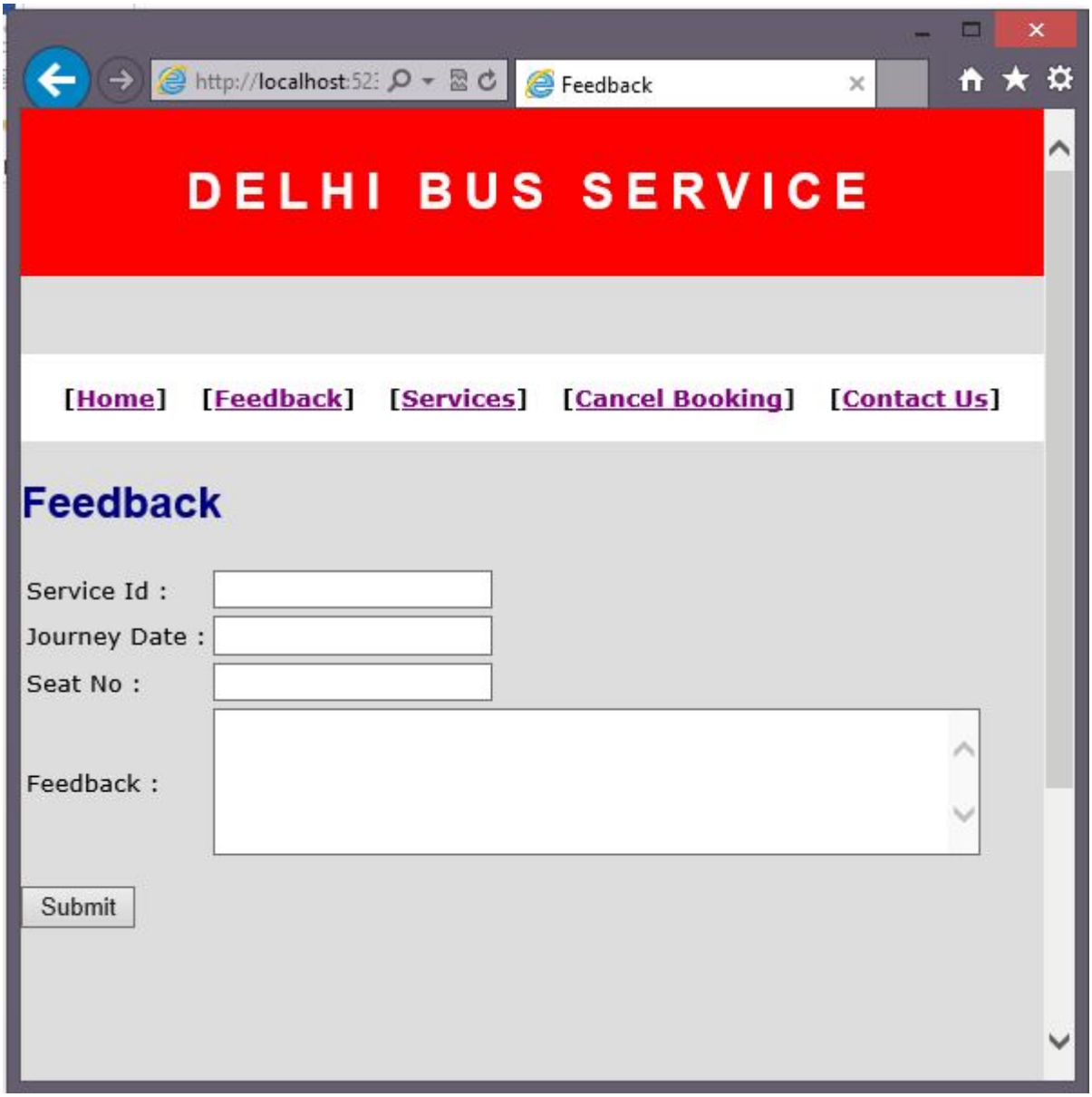
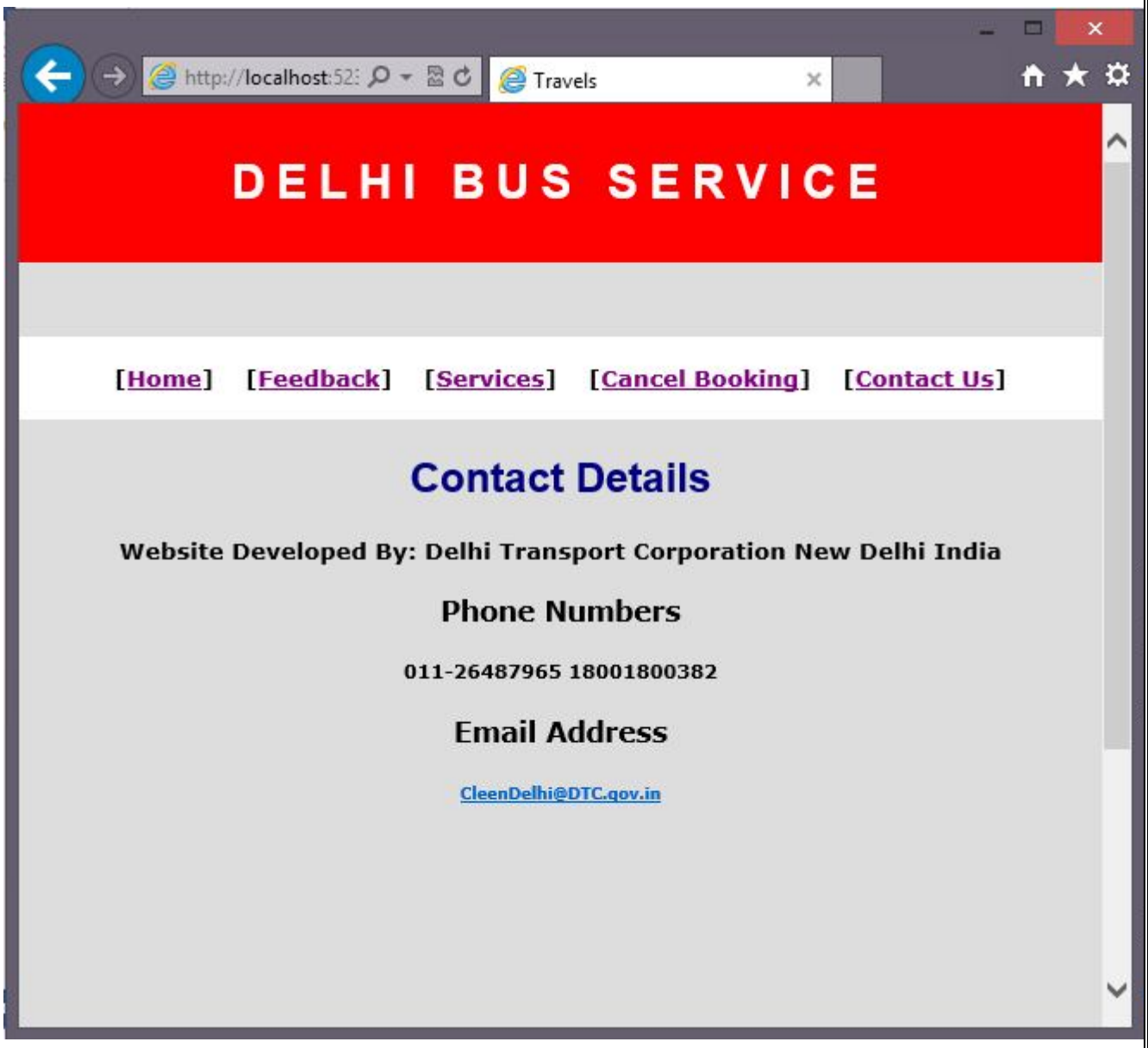


## CONTACT US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Travels
DELHI BUS SERVICE
[Home] [Feedback] [Services] [Cancel Booking] [Contact Us]
Contact Details
Website Developed By: Delhi Transport Corporation New Delhi India
Phone Numbers
011-26487965 18001800382
Email Address
CleenDelhi@DTC.gov.in

# CONCLUSION & FUTURE ENHANCEMENT

The project E-Ticketing is completed, satisfying the required design specifications. The system provides a user-friendly interface. The software is developed with modular approach. All modules in the system have been tested with valid data and invalid data and everything work successfully. Thus the system has fulfilled all the objectives identified and is able to replace the existing system. The constraints are met and overcome successfully. The system is designed as like it was decided in the design phase. This software has a user-friendly screen that enables the user to use without any inconvenience. The ticket machines would end the use of the hefty 1.5-kg ticket racks carried by conductors. Instead, the conductor would just have to key in the details about the fare stage and the ticket machine would print out the ticket. The machine weighs only 800 grams and is convenient to carry. The parameters are almost like that of a railway ticket, the only difference being that the machine is portable. It would also help in providing adequate data to the corporation, particularly with regard to the boarding of passengers from fare stages and important points. This would help the corporation prepare and organize its schedules more efficiently on the basis of traffic demand. Besides, it would provide data on concessions given to various sections. Another additional feature is that the data in the ticket machine could be fed into the computer.

The application has been tested with live data and has provided a successful result. Hence the software has proved to work efficiently.

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