

*A DBMS Project on*  
**Airline Reservation System**

*Submitted by*

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# **Airline Reservation System**

## **Abstract**

BlueBliss Airline reservation System is a computerized system used to store and retrieve information and conduct transactions related to travel by BlueBliss airlines. It is aimed at exposing the importance of online reservation system to travel by air and to enhance customer's convenience to book the flights as when they require with the use of this software to make reservations.

The website made with regard to this project will have two parts. First is the user part, next the administrator part. The front end is user part and administrator is the back end. Administrator is used by the BlueBliss Airline authority. It will allow customers to access database and allow new customers to sign up for online access thereby granting membership to the customer. The system allows the airline passenger to search for flights that are available between the two travel cities, namely the "Departure city" and "Arrival city" for a particular departure and arrival dates. The system displays all BlueBliss flight's details such as flight no., name, price and duration of journey along with the availability of seats in a particular flight. Along with this, aesthetic pleasure choices can also be made available for choice like movie choices, food selections etc.

To book a flight the system asks the customer to confirm his profile details. All necessary details needed to book a flight, will be in the customer's profile in advance. When initially obtaining membership to the BlueBliss Online reservation system, some amount of money has to be credited to the user's online account. Money will be deducted from said account when a flight is booked. A recharge portal is also available in the BlueBliss website, further reducing the user's inconvenience.

The main problem this project aims at eradicating is to eliminate manual errors that can be made while booking flights as well as enabling online reservations for the BlueBliss Airlines. This Software allows its users to book tickets at the comfort of their home.

## **CONTENTS**

<b>1. INTRODUCTION</b>	<b>3</b>
1.1 Access Specification	5
<b>2. REQUIREMENT ANALYSIS</b>	<b>5</b>
2.1 Functional Requirements	5
2.2 Non-Functional Requirements	6
2.2.1 Performance/Time	6
2.2.2 Usability	7
2.2.3 Security	7
2.2.4 Reliability and Availability	7
<b>3. CONCEPTUAL MODELS</b>	<b>8</b>
3.1 Entity-Relationship Diagram	8
3.2 Relational Schema	9
<b>4. SYSTEM DESIGN</b>	<b>10</b>
4.1 Design Goals	10
4.2 Design Development	11
4.3 Detailed Design Understanding	11
4.3.1 Data Gathering	11
4.3.2 Merging Front-end and Back-end	11
<b>5. CONCLUSION</b>	<b>16</b>
<b>6. REFERENCES</b>	<b>17</b>

# 1. INTRODUCTION

Globalization has taken over the world by a storm. Now, whether it is for business or pleasure purposes, people are no longer confined to the places within the country, rather choosing to travel out to different states and continents. With various forms of commute to choose from, example bus, train, car, flight, travelling has gotten a whole lot easier. Travel by air is the fastest means to get to one's destination, and in a world where speed is given high priority, this is the means of travel many have decided to choose. Hence undoubtedly, airlines are highly important.

This document aims at designing an Airline reservation system that is a portal to booking tickets from that particular airlines and to allowing them to maintain an e-wallet to enhance the online flight booking experience. A company names “BlueBliss Airlines” is taken for this purpose. Therefore it is important to make a good database design for the company. Their requirements is as follows.

Airline reservation system provides a portal for the passengers to book flight tickets. In order to use this service a passenger ought to register with the Blue Bliss airlines by providing the following details: Name, Date of Birth, Address, their present Contact number, Email ID, as well as to choose a suitable username and password that will be used for authentication purposes for further login sessions. Along with this, a member is required to pay a certain amount of membership fee which will be added to his BlueBliss e-wallet account making money transactions to book flights easier. An online recharge portal is also an available service in the user's account. After registering and verifying their account, the passenger can choose destination and origin at a particular date and see the available flights. When booked, money will be deducted from the account. If an interested customer wants to view flights, they do not have to register, rather they can go into the website as a guest.

When a passenger is done with account registration, an email is sent to the Email ID that the user has provided. When the user follows the link sent via email to confirm his account, that is when said account is verified. This is a requirement within the airline system to ensure the user's credibility.

### **1.1 Access Specification**

There are only 3 types of Users for The Airline reservation System. The Admin User, who is responsible for updating changed flight details, adding new flights when they are charted, deleting a flight experiencing inconveniences and cannot make the flight. This user is responsible for viewing the feedback given by the passenger.

The second type of user is the registered passenger. They can view their profile details, book flights, choose between existing flights between flights available for the inputted destination and date. They can recharge their membership account.

The third user is the guest passenger. This user has limited access. He/she cannot book flights as they do not have membership accounts. They can only view flights that are available for the entered constraints. This is the extent of the guest user's access.

## **2. REQUIREMENT ANALYSIS**

### **2.1 Functional Requirements**

This web application can be viewed either in guest mode or registered user mode.

For guest user:

- The guests' can search for flights available after entering origin, destination, date of journey and number of passengers in the *home* page. The relevant flights would then be displayed. In order to book a particular flight the guest should have to register with the website.
- The guests' can view about the website in *About Us* page. It has information about the website, its features and contact details.

- In order to avail all the features of Bluebliss the guests' should register themselves by providing all the required details in register page. A confirmation link would then be sent to the mail id of the user. Once account is activated the user can login with the credentials provided.

For registered users:

- The users can enter the details such as origin, destination, date of journey and number of passengers in the *home* page ,then they would be redirected to a page which displays the relevant flights with details such as origin, destination, flight-no, date of journey, fare, departure time, arrival time and number of passengers.
- If user is comfortable with a particular flight and seats are available they can proceed to next page in which details of passengers are entered along with food preferences. Total fare for all the passengers is also displayed in this page. Once the user confirms all the details entered he/she can proceed to payment where all the details entered would be displayed. Once payment is confirmed mail is sent to the user containing ticket information.
- Users can view about the website in *About Us* section which also has contact details.
- Users can view and update their personal details and change password in *Account* section of the website.Users' also have an e-wallet associated with their account through which tickets can be booked.In case their account is out of balance recharge option is available in this section. Additionally in this section the user can view their booking history.
- Users can give their feedback on website in the *feedback* section.
- *Logout* redirects to login page.

For admin:



- Admin has an *Admin login* page with which they can login to their account. Admin can add , delete and update flight details in this page. Also feedback given by the customers is displayed here. *Logout* redirects to the login page.

## **2.2 Non-Functional Requirements**

### **2.2.1 Performance/Time**

The query processing and the retrieval of the result takes around 5 seconds in total. Since the queries entered by users can vary, the processing time can vary slightly.

### **2.2.2 Usability**

Usability is a crucial feature of our system. The web interface is user friendly such that anyone using it for the first time will be able to use the functionalities and it should solve their purpose.

### **2.2.3 Security**

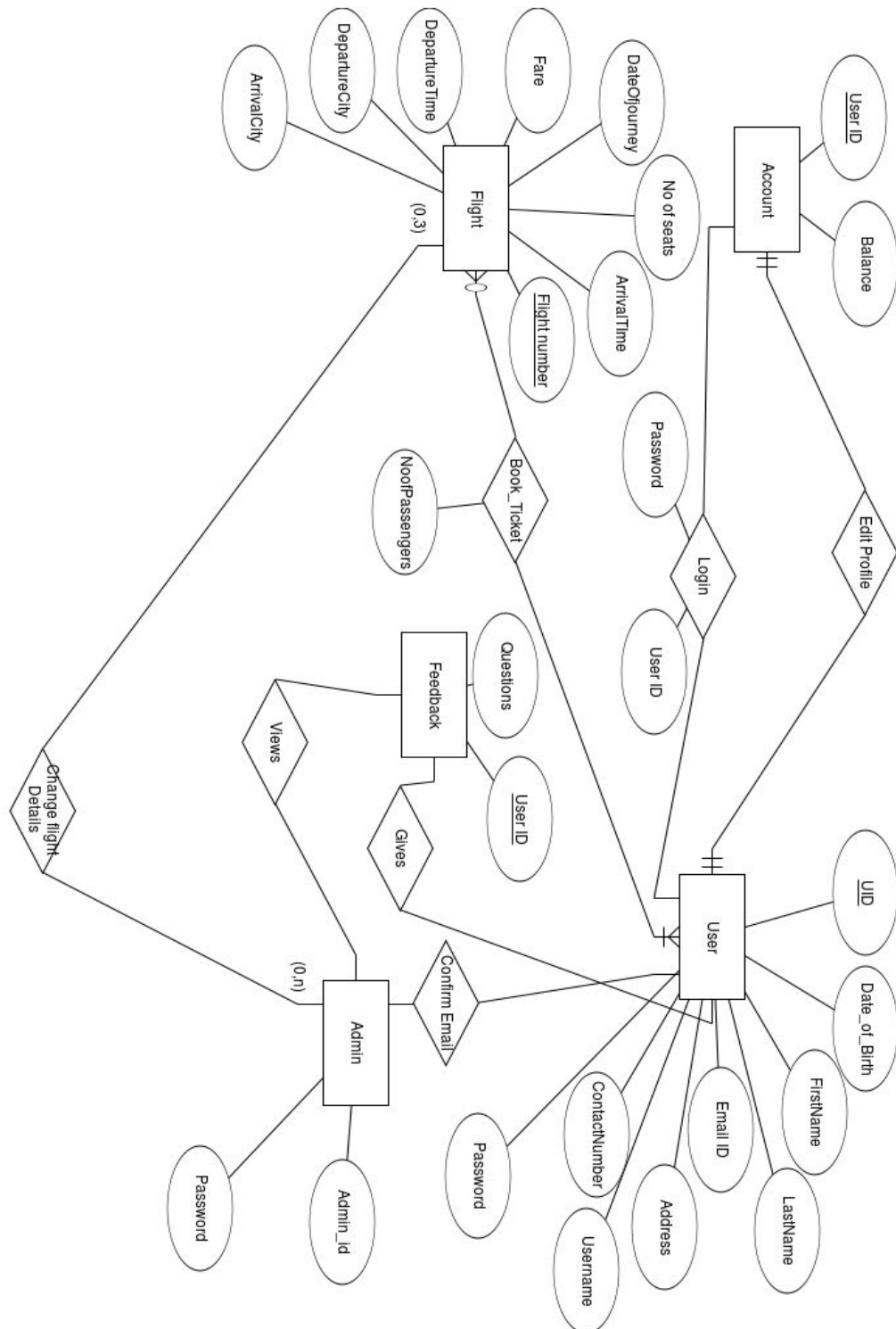
Secure login feature is implemented so as to make sure that no user can access other users' personal details. Confidential information of user such as password cannot be viewed by the admin in the database as it is hashed using MD5 cryptographic hash function, thereby ensuring security and integrity.

### **2.2.4 Reliability and Availability**

This system ensures that the details of the flights given for a particular set of inputs given by the user are accurate. The website is available to the users as and when required.

### 3. CONCEPTUAL MODELS

#### 3.1 Entity-Relationship Diagram



### 3.2 Relational Schema

Relational schema is a logical definition of a table and can be derived from the above ER Diagram. It defines the name of table and the attributes of columns in a table.

#### **Flight1:**

Origin	Destination	Flight no	Departure time	Arrival time	Fare	Date of journey	No.of seats
--------	-------------	--------------	-------------------	-----------------	------	--------------------	----------------

#### **Register:**

User id	First name	Last Name	Date of Birth	Address Line 1	Address Line 2
---------	------------	-----------	---------------	----------------	----------------

Contact No	Email	Username	Password	Status
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#### **Account:**

User id	Balance
---------	---------

#### **Admin:**

Admin id	Admin Password
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#### **Book Ticket:**

User id	Flight no	Fare	No. of tickets booked
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**Feedback:**

Q1_Ch1	Q2_Ch1	Q3_Ch1	Q4_Ch1	Q5_Ch1	Q6_Ch1	Q7_Ch1
--------	--------	--------	--------	--------	--------	--------

Q1_Ch2	Q2_Ch2	Q3_Ch2	Q4_Ch2	Q5_Ch2	Q6_Ch2	Q7_Ch2
--------	--------	--------	--------	--------	--------	--------

Q1_Ch3	Q2_Ch3	Q3_Ch3	Q4_Ch3	Q5_Ch3	Q6_Ch3	Q7_Ch3
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**Login:**

Username	Password
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## 4. SYSTEM DESIGN

The design of the system can be divided into the following two parts.

- a) Data Gathering
- b) Merging Front-end and Back-end

### 4.1 Design Goals

The following are the design goals kept in mind while the Airline reservation Website was being made.

- This website must be responsive across all websites.
- This design must be rendered using PHP and MySQL database with html, css3, bootstrap and JavaScript in the front end.

- The code ought to be readable and well designed, meeting all the functional and nonfunctional requirements as specified above.

## **4.2 Design Development**

The front end part of the website runs on Apache Server and is developed using raw Html, css and Javascript. Bootstrap also plays a role in the animation of the website. The back end is completely based on PHP and MySql server.

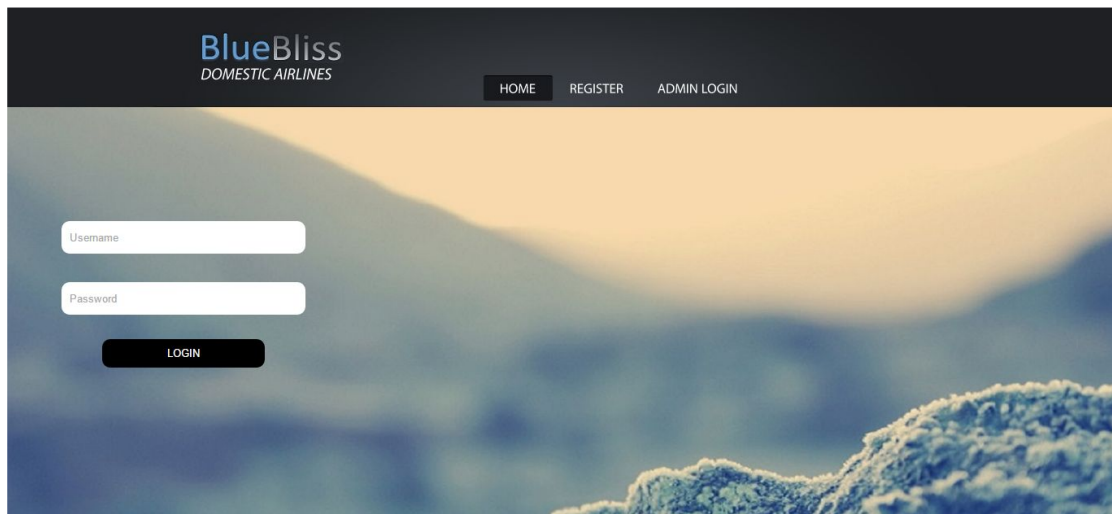
## **4.3 Detailed Design Understanding**

### **4.3.1 Data Gathering**

The website being developed requires a dynamic data set that needs to be changed every three days. For this purpose, web scraping has been done on real time flight schedules used by current leading airlines. Data is scraped from the following link <http://www.spicejet.com/Schedules.aspx>. All the data retrieved from the website is stored in a MySql Database for the purpose of easy retrieval and querying. Data received from the website is stored in the table called Flight1 whose relation schema has been discussed above.

### **4.3.2 Merging Front-end and Back-end**

The page that a visitor first encounters on the BlueBliss website is the Login page. A navigation bar is provided on top which can be selected depending on the User's Access. If the user is a member, he/she can login through their account. If the visitor is a guest, then the home button can be chosen and Similarly, if it is the Admin, an Admin login is also provided. New visitors that wish to be members can register by going to the register button in the navigation bar.



*BlueBliss Airline Login page.*

### *1. Register*

When the user registers, the new member's details are automatically added to the register table. Details like Full name, contact number, email id, address and an account login and password must be filled only upon which the user's account is registered and a confirmation link is sent to the registered email. On going to the sent link, the account will be approved.

### *2. Login*

The returning member of the BlueBliss Airlines can login via the page shown above. As soon as the user enters his/her Username and password, it is compared with the username and the MD5 hashed password values in the register table. When the entered values match, user is logged into their account and the following page is displayed.

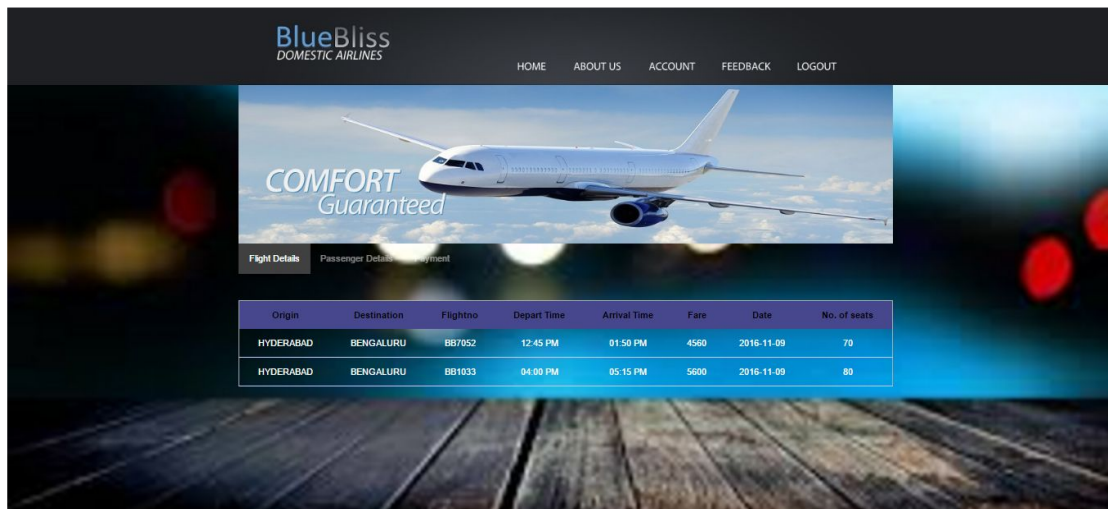


Here in this page, the top navigation bar provides multiple options. The About us page has details about the BlueBliss Airlines and gives details about its founders. The account page holds information about the user's account. The user can View their details, update their profile, Check booking history, recharge their account e-wallet.

When the user chooses to view his details, SQL query retrieves information from the register table and renders them onto the webpage. Similarly when the user updates his profile details, they are reflected in the same register table. Bookticket table holds information about an individual's booking history. In order to recharge the e-wallet or to view its balance, any changes made will be reflected solely in the account table, which holds all the information about the member's e-wallet.

When the feedback button on the navigation bar is selected, the user can give his feedback on his/her experience with the BlueBliss Airlines. This is directly updated in the feedback table.

In the image shown above, user can enter any origin, or destination of their choice with any selected date to view all flight details that match their specifications. After clicking go, the following page is displayed.



Here all the possible rows matching with the entered values is displayed from the flight1 table. The rows are clickable and the flight most suitable to the passenger's needs can be selected. Once the flight is selected, it goes to the following page.

Origin	Destination	Flightno	Departure	Arrival	Fare	Date
HYDERABAD	BURU		04:00 PM	05:15 PM	5600	2016-11-09

FirstName	LastName	Age	Gender
			Male
			Male
			Male
			Male
			Male

Choose your food preferences:

- ☐ Continental
- ☐ North-Indian
- ☐ South-Indian
- ☐ Not required

Here while initially choosing the origin and the destination, the number of passengers are also entered. Here the passengers details are to be entered. After the appropriate fields are entered, user can click next to go the following page.



BlueBliss  
DOMESTIC AIRLINES

HOME ABOUT US ACCOUNT FEEDBACK LOGOUT

COMFORT  
Guaranteed

Flight Details Pass Payment

Origin	Destination	Flightno	Departure	Arrival	Fare	Date
HYDERABAD	BENGALURU	BB1033	04:00 PM	05:15 PM	5500	2016-11-09

FirstName	LastName	Age	Gender
a	r	23	Male
q	s	12	Male

Your food Preferences  
Food:North-Indian

Total fare: 11200

CONFIRM

The total fare is shown and when the passenger clicks continue, the flight details are send in the registered email.All the information used is in bookticket table.

### 3. Admin

When the admin logs into his/her account by going into the Admin/Login page navigated from the login page, this page will be rendered onto the browser.

BlueBliss  
DOMESTIC AIRLINES

LOGOUT

Add flights

- Update flight details
- Delete flight details
- View Feedback

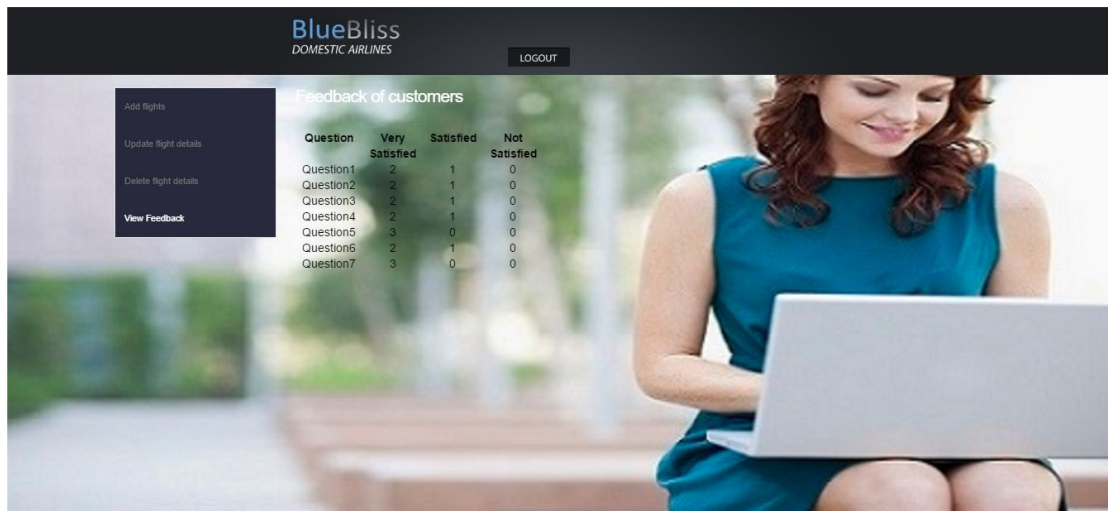
New Flight Details

New Origin	New Destination	New Flight no
New departure	New Arrival	New Fare
New Date	No. of Seats	

CONFIRM

The admin can Add new flights, Update existing flight details as well as delete flights. The changes that the admin makes in these three pages are directly reflected in the flightl table.

Another option is provided in the side navigation bar as shown above. That is the check feedback. The admin is also provided with functionality to view the feedback details given by various users of BlueBliss. It can be seen as shown below.



The feedback details are rendered onto the webpage from the feedback table.

## 5. CONCLUSION

This project has aimed and achieved to make an Online airline reservation system for the BlueBliss Airlines. The user can thus book tickets at the comfort of his/her home and additional security measures are taken to ensure the safety of the User's account and the misuse of their e-wallet. The website provides all the functionalities as that of a real time ticket booking web portal and ensures user satisfaction with easy to use interface. The BlueBliss Airline Reservation System has achieved all the expected design goals and makes use of the data in the database using SQL queries in an efficient manner.

## 6. REFERENCES

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