



# Bilkent University

## Department of Computer Engineering

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### CS 353 - Database Management Systems

Airline Company Data Management System

## Final Report

## Group 16

Mert Aytöre	21400923
Oğuz Demir	21201712
Ayşe Berceste Dinçer	21300957
Mehmet Furkan Şahin	21201385

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## 1.0 Project Description

Airline Company Data Management System is a web-based application for maintaining reservations of an airline company. The system includes information about cities, airports, planes, flights, routes, reservations, sold/cancelled tickets, sales and promotions, pilots and flight attendance. Using this data, the system allows to view flight details, make/cancel reservations, buy/sell tickets.

This project establishes an online reservation application for an airline company to easily and efficiently manage flight reservations. Therefore, the system offers services to automate reservation and purchasing operations. Customers are able to complete the entire reservation process from the system and they can always access to updated information through the system. The application is also useful for maintaining integrity and accuracy. Considering thousands of customers, crew and flights; the information is controlled precisely to eliminate any problem or inconsistency with the help of the system.

Airline Company Data Management System serves to three different user domains: customer, manager, and salesperson. The interface and the functionalities of the system is different for each user.

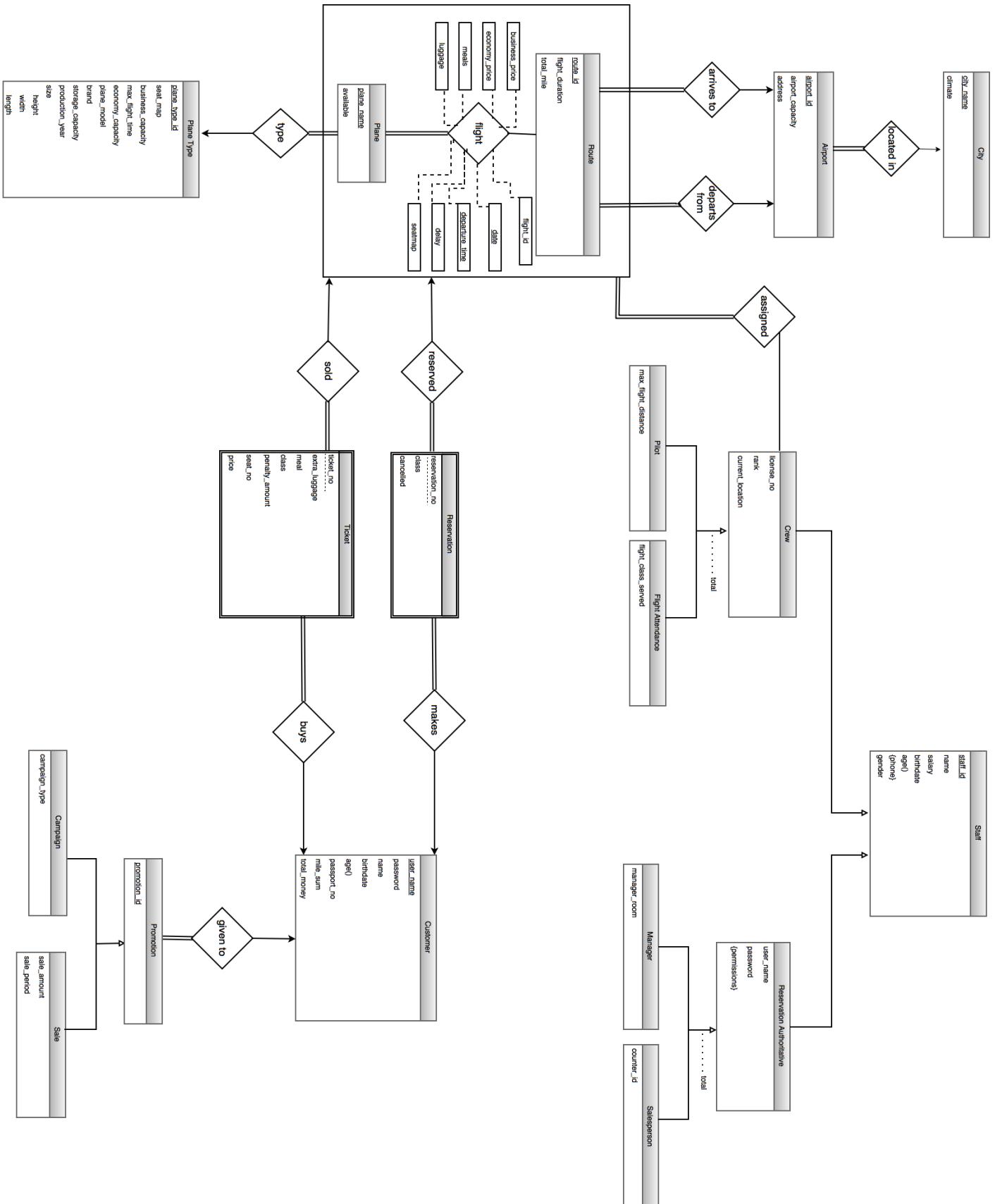
The manager is responsible from the whole system management; the addition, deletion, modification of all data are carried by the manager. The manager can create and cancel flights, update flight details, record delays, manage crew assignment to flights. The manager is also able to record and update route details. The data of the pilots and flight attendant is maintained by the manager. Furthermore, the manager can maintain planes and airports. The manager has the authority to examine the customer reservations and tickets, and make the necessary modifications. The flight details and the respective tickets are also controlled by the manager.

Customers are able to search for flights by specifying route and date details and view the existing flights. The system further offers services such as making reservations, purchasing tickets, cancelling flights, refunding tickets with certain penalties, specifying class, meal, and extra luggage choice. The customers are able to view details of all of their tickets and reservations including past/cancelled reservations/tickets. They are also able to manage their account. According to collected miles, the system gives various promotions, sales and free tickets, to users.

Salesperson is responsible from completing the reservation operations for the customers. The salesperson can examine the existing flights, view customer details and reservations and help the customers to complete their purchasing and ticketing operation

Consequently, Airline Company Data Management System is an online reservation system that maintains validity of data continuously and offers purpose-specific operations to end users to ease and perfect reservations of an airline company.

## 2. FINAL E/R MODEL



### 3. RELATION SCHEMAS

#### 3.1. Staff

**Staff (staff\_id, name, salary, birthdate, age, gender)**

#### 3.2. Staff Phones

**Staff\_Phones(staff\_id, phone)**

FOREIGN KEY (staff\_id) REFERENCES staff

#### 3.3. Reservation Authoritative

**Reservation\_Authoritative (staff\_id, user\_name, password)**

FOREIGN KEY (staff\_id) REFERENCES staff

#### 3.4. Permissions

**Permissions (staff\_id, permission\_name)**

FOREIGN KEY (staff\_id) REFERENCES reservation\_authoritative

#### 3.5. Manager

**Manager(staff\_id, manager\_room)**

FOREIGN KEY (staff\_id) REFERENCES staff

#### 3.6. Salesperson

**Salesperson(staff\_id, counter\_id)**

FOREIGN KEY (staff\_id) REFERENCES staff

#### 3.7. Crew

**Crew(staff\_id, license\_no, rank, current\_location)**

FOREIGN KEY (staff\_id) REFERENCES staff

### 3.8. Pilot

**Pilot(staff\_id, max\_flight\_distance)**

FOREIGN KEY (staff\_id) REFERENCES staff

### 3.9. Flight Attendance

**Flight\_Attendance(staff\_id, flight\_class\_served)**

FOREIGN KEY (staff\_id) REFERENCES staff

### 3.10. City

**City(city\_name, climate)**

### 3.11. Airport

**Airport(airport\_id, airport\_capacity, address, city\_name)**

**Functional Dependencies:**

FOREIGN KEY (city\_name) REFERENCES city

### 3.12. Route

**Route(route\_id, flight\_duration, departs, arrives)**

FOREIGN KEY (departs) REFERENCES airport

FOREIGN KEY (arrives) REFERENCES airport

### 3.13. Plane Type

**Plane\_Type(plane\_type\_id, seat\_map, business\_capacity, economy\_capacity, max\_flight\_time, plane\_model, brand, storage\_capacity, production\_year, width, height, length)**

### 3.14. Plane

**Plane(plane\_name, available, plane\_type\_id)**

FOREIGN KEY (plane\_type\_id) REFERENCES plane\_type

### 3.15. Flight

**Flight(plane\_name, route\_id, date, departure\_time, flight\_id, delay, business\_price, economy\_price, meals, seatmap, luggage)**

FOREIGN KEY (route\_id) REFERENCES route

FOREIGN KEY (plane\_name) REFERENCES plane

### 3.16. Flight Crew

**Flight\_Crew(staff\_id, plane\_name, route\_id, date, departure\_time)**

FOREIGN KEY (staff\_id) REFERENCES staff,

FOREIGN KEY (plane\_name, route\_id, date, departure\_time) REFERENCES flight

### 3.17. Customer

**Customer(user\_name, password, name, birthdate, age, passport\_no, mile\_sum, total\_money)**

### 3.18. Reservation

**Reservation(user\_name, plane\_name, route\_id, date, departure\_time, reservation\_no, class, cancelled)**

FOREIGN KEY (user\_name) REFERENCES customer

FOREIGN KEY (plane\_name, route\_id, date, departure\_time) REFERENCES flight

### 3.19. Ticket

**Ticket(user\_name, plane\_name, date, departure\_time, route\_id, ticket\_no, extra\_luggage, meal, class, penalty\_amount, seat\_no, price )**

FOREIGN KEY (user\_name) REFERENCES customer

FOREIGN KEY (plane\_name, route\_id, date, departure\_time) REFERENCES flight

### 3.20. Promotion

**Given\_Promotion(user\_name, promotion\_id)**

FOREIGN KEY user\_name REFERENCES customer

### 3.21. Campaign

**Campaign(user\_name, promotion\_id, campaign\_type)**

FOREIGN KEY(user\_name, promotion\_id) REFERENCES given\_promotion

### 3.22. Sale

**Sale(user\_name, promotion\_id, sale\_amount, sale\_period)**

FOREIGN KEY (user\_name, promotion\_id) REFERENCES given\_promotion)

## 4. IMPLEMENTATION DETAILS

Our system implementation has two aspects: database and the web site. In the database part of our design we used MySQL. In order to automate the database creation and insertion of data, we wrote the database code in Java and accessed to our database using JDBS Driver. Our Java code is responsible from creating all tables, specifying any primary key, foreign key, not null and unique constraints. Sample data tuples are added to the airline database in order to demonstrate the correct functioning of the system. Furthermore, the java code specifies the advanced database attributes such as views, triggers, and data indices. Since constraints and assertions are not supported in Java, we have used triggers instead or enforced constraints within queries. We built the MySQL database in our server.

Besides the database part, for our application functionalities and user interface in our management system's website, we used HTML, CSS, PHP and JavaScript. The design of the interface is implemented by HTML. The page design and components are implemented in different files. The styles of the pages are enhanced with CSS. Furthermore, for better user interface design, we used Bootstrap library.

In order to implement the real system operations, we used PHP. The PHP files are created for website pages and for further database operations. Furthermore, JavaScript is used for operations such as input management. The database queries for each page is implemented using mysqli commands. Since the view and operation parts are closely related, the HTML and PHP codes are used together. PHP is integrated in HTML and HTML is used with echo statements in PHP code when necessary. Moreover, the error messages, bridges between pages, login/logout operations, session information management are implemented.

We published our Airline Company Data Management System in the domain we purchased and we used a DigitalOcean server for publishing dynamic content. We also connected the database and published our fully operational application.

## 5. ADVANCED DATABASE COMPONENTS

### 5.1. Views

- **Customer Flight View**

The customer can only see the flight id, flight time, date, and cities. The plane and assigned crew details should not be visible to the customer.

```
CREATE VIEW customer_flight_view(flight_id, date, time, departs, arrives, meals, business_price, economy_price) AS  
(SELECT flight_id, date, departure_time, departs, arrives, meals, business_price, economy_price FROM route natural join flight)
```

- **Customer Reservation View**

The customer can only see the reservation details such as flight id, flight time, date, cities, class and cancelled. The plane and assigned crew details should not be visible to the customer. Moreover, customer can only see his/her own reservations.

```
CREATE VIEW customer_reservation_view(user_name, flight_id, date, departure_time, departs, arrives, reservation_no, class, flight_duration, meals) AS (SELECT user_name, flight_id, date, departure_time, departs, arrives, reservation_no, class, flight_duration, meals FROM reservation natural join route natural join flight )
```

- **Customer Flight Details View**

The customer can only see details of the flight he/she has reservation or ticket. Moreover, from the plane properties he/she can only see the seat map and cannot access to other plane details such as capacity or max\_flight\_distance.

```
CREATE VIEW customer_ticket_view(user_name,flight_id, date, departure_time, departs, arrives, ticket_no, class, extra_luggage, meal, flight_duration) AS (SELECT user_name,flight_id, date, departure_time, departs, arrives, ticket_no, class, extra_luggage, meal, flight_duration FROM ticket natural join route natural join flight)
```

- **Customer Ticket View**

The customer can only see the ticket details such as flight id, flight time, date, cities, luggage, seat\_no etc. The plane, penalty amount, assigned crew details should not be visible to the customer. Moreover, customer can only see his/her own tickets.

```
CREATE VIEW manager_customer_view(user_name, name, birthdate, mile_sum) AS  
(SELECT user_name, name, birthdate, mile_sum from customer)
```

- **Manager Customer View**

The manager cannot access to password or total\_money details of the customers. Other customer information can be accessed by the manager.

```
CREATE VIEW customer_promotion_view(user_name, name, birthdate, mile_sum)
AS (SELECT user_name, name, birthdate, mile_sum from customer where
mile_sum > 5000)
```

## 5.2. Reports

- **Total Number of Assigned Flights to an Airport**

Counts the total number of assigned flights to an airport (both arrival and departure) and shows the count separately for each airport.

```
SELECT count(*) as total FROM flight natural join route group by departs
SELECT count(*) as total FROM flight natural join route group by arrives
```

- **Total Number of Current Reservations and Tickets for a Flight**

Calculates the total number of current reservations to the flights, the number of sold tickets from these flights and the total amount of full seats for each flight.

```
SELECT count(*) as resNo FROM reservation natural join customer natural
join flight where flight_id = '$flightid'
SELECT count(*) as ticketNo FROM ticket natural join customer natural join
flight where flight_id = '$flightid';
```

## 5.3. Triggers

- **Triggers After Purchasing a Ticket**

When a ticket is purchased, the mile sum and money of the customer is updated.

```
CREATE TRIGGER updates_after_purchase AFTER INSERT ON ticket FOR EACH ROW
BEGIN UPDATE customer SET mile_sum = mile_sum - (select total_mile from
ticket natural join route where ticket_no = NEW.ticket_no), total_money =
total_money - (select price from ticket where ticket_no = NEW.ticket_no)
where NEW.user_name = customer.user_name; END
```

- **Triggers After Refunding a Ticket**

When a ticket is refunded, the mile sum and money of the customer is updated. Also the penalty amount is deduced.

```
CREATE TRIGGER updates_after_refund BEFORE DELETE ON ticket FOR EACH ROW
BEGIN UPDATE customer SET mile_sum = mile_sum - (select total_mile from
```

```
ticket natural join route where ticket_no = OLD.ticket_no), total_money =  
total_money + (select price from ticket where ticket_no = OLD.ticket_no) -  
(select penalty_amount from ticket where ticket_no = OLD.ticket_no) where  
OLD.user_name = customer.user_name; END;
```

- **Triggers After Updating a Ticket**

Total money of the customer is updated according to purchasing/cancelling of meals and extra luggage.

```
CREATE TRIGGER updates_on_ticket AFTER UPDATE ON ticket FOR EACH ROW BEGIN  
UPDATE customer SET total_money = total_money - 10 where OLD.user_name =  
customer.user_name and OLD.meal = '' and NEW.meal != '' "UPDATE customer  
SET total_money = total_money + 10 where OLD.user_name = customer.user_name  
and OLD.meal != '' and NEW.meal = ''; UPDATE customer SET total_money =  
total_money - (50 * NEW.extra_luggage) where OLD.user_name =  
customer.user_name and OLD.extra_luggage = 0 and NEW.extra_luggage > 0;  
UPDATE customer SET total_money = total_money + (50 * OLD.extra_luggage)  
where OLD.user_name = customer.user_name and OLD.extra_luggage > 0 and  
NEW.extra_luggage = 0; UPDATE customer SET total_money = total_money + (50  
* (OLD.extra_luggage - NEW.extra_luggage)) where OLD.user_name =  
customer.user_name and OLD.extra_luggage > 0 and NEW.extra_luggage > 0;  
END;
```

- **Total Money Constraint Trigger**

Total money of a customer can never go below 0.

```
CREATE TRIGGER total_money_constraint AFTER UPDATE ON customer FOR EACH ROW  
BEGIN if(NEW.total_money < 0) then SIGNAL sqlstate '45001'; end if; END;
```

#### 5.4. Secondary Indices

Secondary indices are created on tables with the attributes that are most commonly searched: flight id and route in flights and username in tickets and reservations.

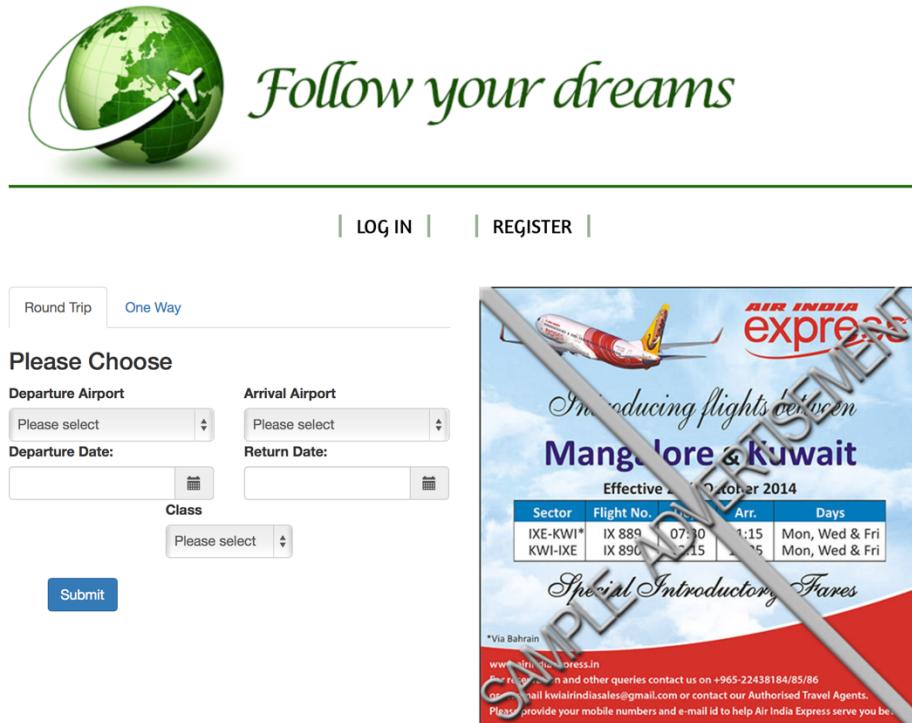
```
CREATE INDEX flightid_index USING BTREE ON flight (flight_id);  
CREATE INDEX flightcity_index USING BTREE ON flight (route_id);  
CREATE INDEX customerreservation_index USING BTREE ON reservation  
(user_name);  
CREATE INDEX customerticket_index USING BTREE ON ticket (user_name);
```

## 6. USER MANUAL

### 6.1. Customer User Manual

The screens customer can access are described in detail.

#### 6.1.1. Home Screen



The homepage of the Airline Company Data Management system is in the above figure. This screen enables searching for existing flights by entering the departure and arrival airports, flights date, and class. You can select the airports from the existing airport and city pairs. You can also select the class from the dropdown list of available classes. The date choice can also be easily done with the calendar that appears when the date sections are clicked. In order to implement the search, you can enter all the required details and press the 'Submit' button. The searches are also separated for one way and round trips. You can specify your search by selecting either 'Round Trip' or 'One Way' tab before you enter your search details.

Furthermore, when you click on the 'Log in' button, you are directed to the login screen. Register button allows you to create an account in the system. Login is not necessary in order to search for flights; however, required for further operations.

Round Trip

One Way

## Please Choose

### Departure Airport

Please select  
ESB(Aنکارا )  
HTR(London )  
SG(Istanbul )

### Arrival Airport

Please select

Return Date:

Please select

Submit

## Detailed view of airport-city selection

LOG IN

April 2016

Su	Mo	Tu	We	Th	Fr	Sa
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
1	2	3	4	5	6	7

Arrival Airport

Please select

Return Date:

2016-04-29 /00:00

Class

Please select

Submit

## Detailed view of date selection

### 6.1.2. Customer Search Flight Screen with One Way Ticket

The screenshot shows a flight search interface. At the top, there's a green globe icon with a white airplane path and the slogan "Follow your dreams". Below the globe are two tabs: "Round Trip" (which is selected) and "One Way". Underneath these tabs, there are input fields for "Please Choose" (Departure Airport and Arrival Airport, both set to "Please select"), "Departure Date" (a date picker), "Return Date" (disabled), "Class" (a dropdown menu), and a "Submit" button. To the right of the search form is a promotional banner for Air India Express. The banner features a red and white airplane, the text "Introducing flights between Mangalore & Kuwait", and a table of flight details:

Sector	Flight No.	Arr.	Days
IXE-KWI*	IX 889	07:30	1:15 Mon, Wed & Fri
KWI-IXE	IX 890	17:15	2:05 Mon, Wed & Fri

\*Via Bahrain

[www.airindiaexpress.in](http://www.airindiaexpress.in)  
For reservations and other queries contact us on +965-22438184/85/86  
or e-mail [kwairindisales@gmail.com](mailto:kwairindisales@gmail.com) or contact our Authorised Travel Agents.  
Please provide your mobile numbers and e-mail id to help Air India Express serve you better.

In order to search for one way flights, you can select the 'One Way' tab. Then, you can fill in the required fields and click on 'Submit' button to search for flights. Since this page is allocated to one way flight search, choosing a return date is not allowed by the system.

### 6.1.3. Result of One Way Flight Search Screen

The screenshot shows the search results for a one-way flight. At the top, there's a green globe icon and navigation links for "HOME" and "LOGIN". Below this, a message states: "Flights are within 2 days before and after from your selection". The search results are titled "OUTBOUND FROM : HTR" and show a single flight entry:

2016-09-20	2016-09-21
500\$	500\$
<input type="radio"/>	<input checked="" type="radio"/>

At the bottom, there's a green bar with the text "Choose action" and a message: "You need to login before making reservations or buying tickets".

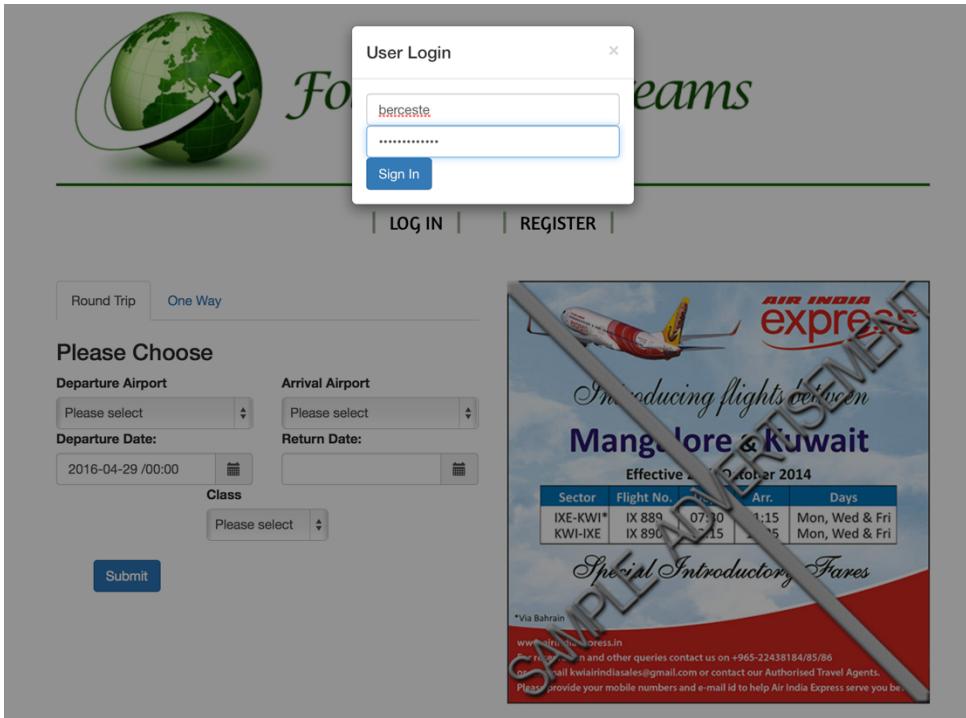
When you enter flight details in page 6.1.2. and click ‘Submit’ button, the list of available flights are displayed. As shown in the above page, the result of search lists all available flights in two days before and after the entered date. You can choose any matching flight to reserve or buy by clicking on the respective radio button. However, no further operation can be implemented without logging in to the system. You can click on the button at the bottom in order to login and continue with operations.

#### 6.1.4. Result of Round Trip Flight Search Screen

The screenshot shows a flight search interface. At the top, there's a logo of a globe with an airplane and navigation icons. To the right are links for 'HOME' and 'LOGIN'. A green header bar says 'Flights are within 2 days before and after from your selection'. Below it, the 'OUTBOUND FROM : HTR' section lists a flight from 2016-09-20 to 2016-09-21 for 500\$. There are two radio buttons: one is checked (blue dot) and one is empty (grey outline). The 'INBOUND FROM ESB' section lists a flight from 2016-10-10 to 2016-10-11 for 350\$. There are two radio buttons: one is empty (grey outline) and one is checked (blue dot). At the bottom, a green bar says 'Choose action' and an orange bar says 'You need to login before making reservations or buying tickets'.

When you enter flight details in page 6.1.1. and click ‘Submit’ button the list of available flights are displayed. As shown in the above page, the result of search lists all available flights in two days before and after the entered date. You can choose any matching flight to reserve or buy by clicking on the respective radio button. However, no further operation can be implemented without logging in to the system. You can click on the button at the bottom in order to login and continue with operations. The Outbound section lists all matching departure flights while Inbound section displays all matching arrival flights.

### 6.1.5. Login Screen



In the homepage, when you click ‘Login’ the dialog box shown above is displayed. The login screen requests you to enter username and password details. You are directed to home page if the login is successful and warned with an error message otherwise.

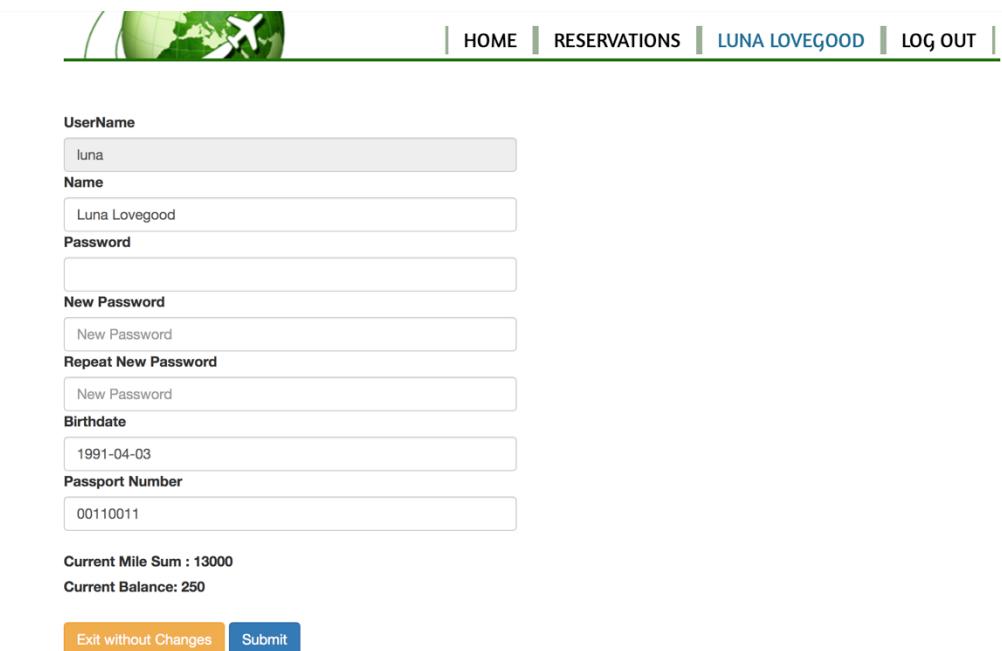
### 6.1.6. Register Screen

The screenshot shows the registration form on the travel website. It includes fields for "UserName", "Name", "Password", "Repeat Password", "Birthdate", and "Passport Number", each with a corresponding input field. A "Submit" button is at the bottom left. On the right side of the header, there is a "HOME" link.

Sector	Flight No.	Dep.	Arr.	Days
IXE-KWI*	IX 889	07:30	11:15	Mon, Wed & Fri
KWI-IXE	IX 890	10:15	13:15	Mon, Wed & Fri

When you click on ‘Register’ button in the main menu, you are directed to the above register page. You are required to enter username, password, name, birthday and passport number information. When ‘Submit’ is clicked the account is created. If there is a missing entry, you will be warned about the missing entries. Moreover, when the entered details are incorrect or invalid you are warned with an error message.

#### 6.1.7. Manage Account Screen



The screenshot shows a web-based application interface for managing a user account. At the top, there is a navigation bar with icons for flight search and booking, followed by links for HOME, RESERVATIONS, LUNA LOVEGOOD (which is highlighted in blue), and LOG OUT. Below the navigation bar is a form for updating account information. The form fields include:

- UserName:** luna
- Name:** Luna Lovegood
- Password:** (empty field)
- New Password:** New Password
- Repeat New Password:** New Password
- Birthdate:** 1991-04-03
- Passport Number:** 00110011

Below the form, account statistics are displayed:

- Current Mile Sum : 13000
- Current Balance: 250

At the bottom of the form are two buttons: **Exit without Changes** (orange) and **Submit** (blue).

When you log in to the system, you can click on the tab corresponding to your name in order to view your account details. You are able to change your password, change the possible mistakes in your name, or in birthdates and in your passport numbers. You can also view your mile sum and current balance information. You can make the changes you want in your account and click on ‘Submit’ button to save changes. Otherwise, you can exit by clicking on ‘Exit without Changes’.

#### 6.1.8. Result of Flight Search Screen for Logged in Customers

The screenshot shows a flight search interface. At the top, there's a logo with a globe and airplane, followed by navigation links: HOME, RESERVATIONS, MY PROFILE (which is highlighted in blue), and LOG OUT. A green banner at the top states: "Flights are within 2 days before and after from your selection". Below this, the section "OUTBOUND FROM : HTR" is shown with two rows of flight details:

2016-09-20	2016-09-21
200\$	200\$

Each row has a pair of radio buttons: the first row has a blue radio button selected, and the second row has an orange radio button selected.

The section "INBOUND FROM ESB" is shown with two rows of flight details:

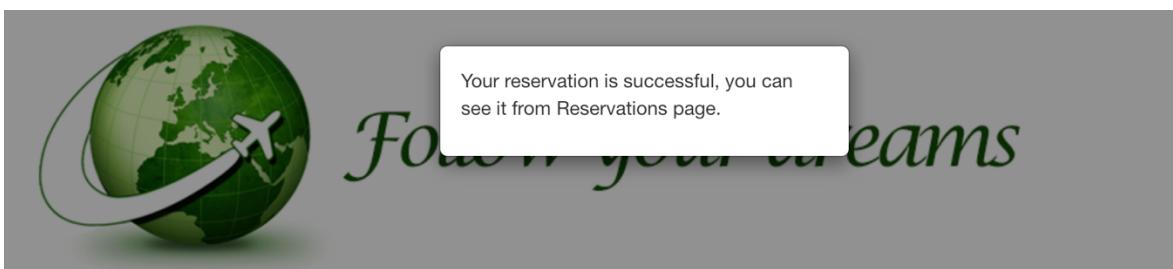
2016-10-10	2016-10-11
200\$	200\$

Each row has a pair of radio buttons: the first row has an orange radio button selected, and the second row has a blue radio button selected.

At the bottom, a green banner says "Choose action" and contains two buttons: "Reserve Selection" (orange) and "Purchase Selection" (blue).

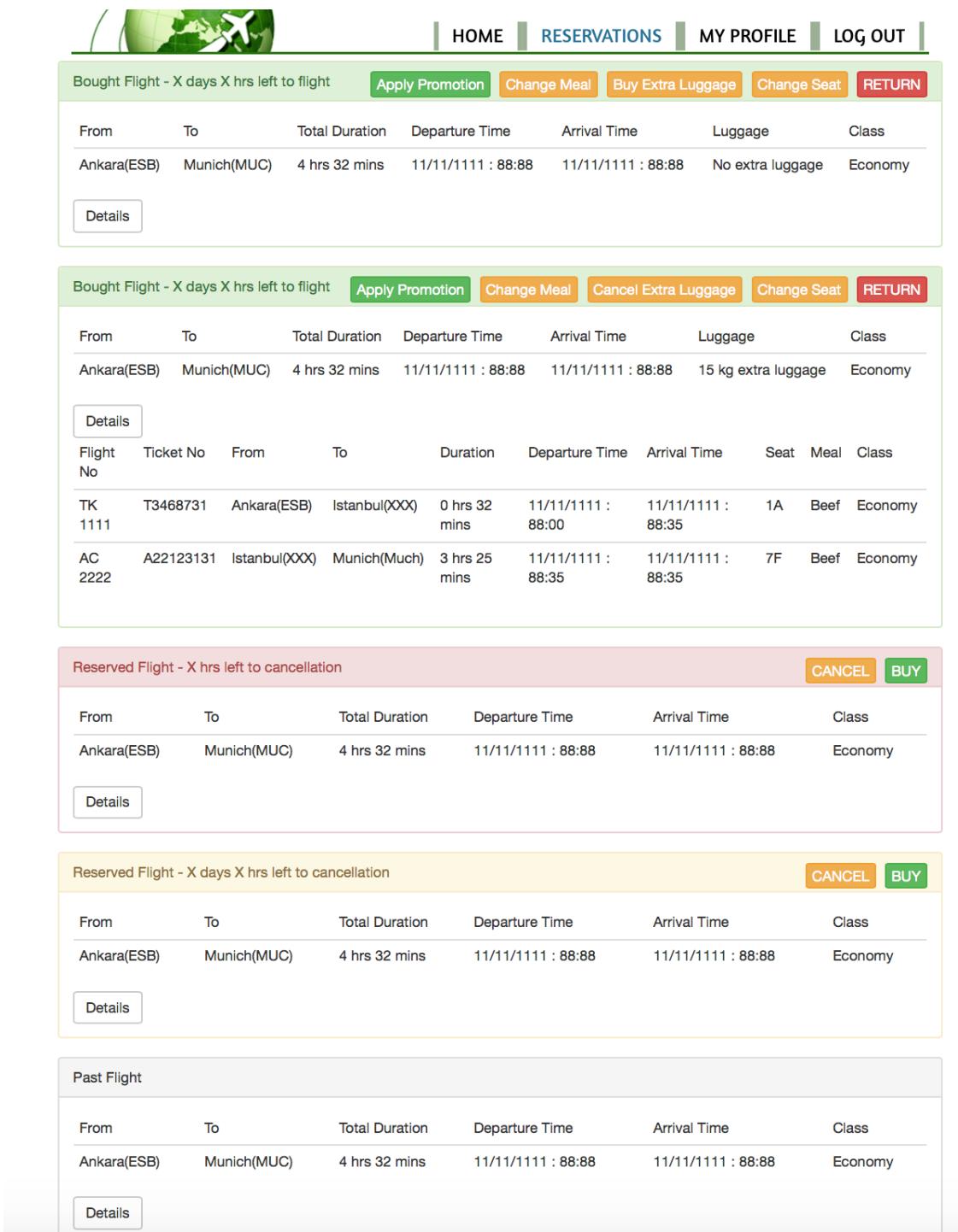
When you enter flight details in pages 5.1.1. and 5.1.2. and click 'Submit' button the list of available flights is displayed. As shown in the above page, the departure tickets are listed under 'Outbound' and the arrival tickets are listed under 'Inbound'. The date, time and price of each flight is shown in detail where price is shown with respect to the previously selected class in search. You can select the flights you want to reserve or buy by clicking on respective radio buttons.

When you click on 'Reserve Selection' button, the selected flights are reserved. When you click on 'Purchase Selection' button, the selected flights are purchased directly. Before the operations are done, respective capacity and balance checks are implemented by the system automatically. You will be informed about the status of the operation with dialog boxes.



Successful reservation error message

### 6.1.9. Customer Reservations & Tickets Screen



The screenshot displays a series of five cards representing different stages of a flight reservation:

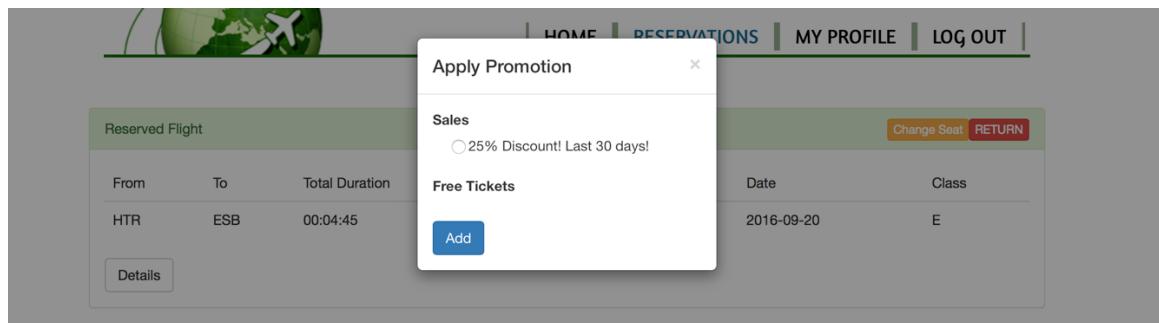
- Bought Flight - X days X hrs left to flight:** Shows a summary for a flight from Ankara(ESB) to Munich(MUC). Total Duration: 4 hrs 32 mins, Departure Time: 11/11/1111 : 88:88, Arrival Time: 11/11/1111 : 88:88, Luggage: No extra luggage, Class: Economy. Buttons: Apply Promotion, Change Meal, Buy Extra Luggage, Change Seat, RETURN.
- Bought Flight - X days X hrs left to flight:** Shows a detailed breakdown of the flight. It lists two segments: TK 1111 (Ankara to Istanbul) and AC 2222 (Istanbul to Munich). Both segments are in Economy class, Beef meal, and assigned seats 1A and 7F respectively. Buttons: Details, Apply Promotion, Change Meal, Cancel Extra Luggage, Change Seat, RETURN.
- Reserved Flight - X hrs left to cancellation:** Shows a summary for a flight from Ankara(ESB) to Munich(MUC). Total Duration: 4 hrs 32 mins, Departure Time: 11/11/1111 : 88:88, Arrival Time: 11/11/1111 : 88:88, Class: Economy. Buttons: Details, CANCEL, BUY.
- Reserved Flight - X days X hrs left to cancellation:** Shows a detailed breakdown of the flight, identical to the previous card. Buttons: CANCEL, BUY.
- Past Flight:** Shows a summary for a flight from Ankara(ESB) to Munich(MUC). Total Duration: 4 hrs 32 mins, Departure Time: 11/11/1111 : 88:88, Arrival Time: 11/11/1111 : 88:88, Class: Economy. Buttons: Details.

After clicking the Reservations tab after logging in, the page above is shown. You can see your existing reservations in detail. When you click on 'Details' button, you are able to see your ticket's every single available information. Beside these, you can also change your preferences on your tickets. On the upper right corner of every single reservation, there are

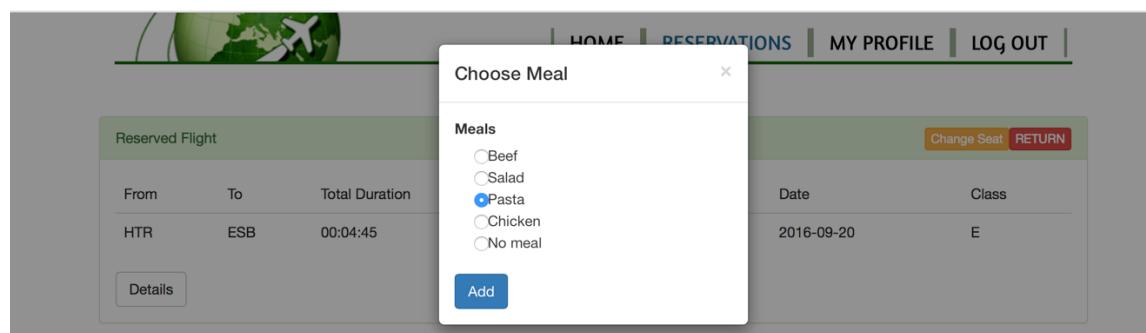
options of changing their meal choice, buying/cancelling extra luggage and changing seats within the same class, if there are seats available. Lastly, you can return their tickets with the ‘Return’ button provided. The page lists both reserved and purchased flights. Also past flights are listed. For reservations ‘Cancel’ and ‘Buy’ buttons are available. You can click ‘Cancel’ button to cancel the reservation and click ‘Buy’ button to purchase the ticket. For tickets, ‘Apply Promotion’, ‘Change Meal’, ‘Buy Extra Luggage’, ‘Change Seat’, ‘Return’ buttons are available.

You can click on ‘Apply Promotion’ button to select a campaign or sale to apply to the ticket from the list of available promotions. You can click on ‘Change Meal’ to update the meal choice. You can click on ‘Buy Extra Luggage’ to specify the amount of extra luggage. You can click ‘Change Seat’ to select a seat from the list of seats. When customer clicks ‘Return’ button the ticket is refunded with the set penalty amount.

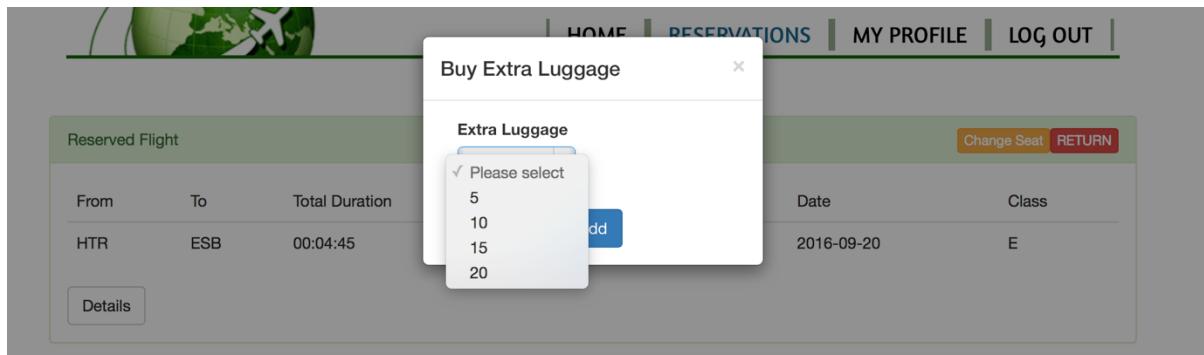
You are informed about the success of your operations with dialog boxes.



You can see the list of promotions available for you when you click on ‘Apply Promotion’ button. You can select the promotion you want to use and click on ‘Add’ to use the sale or campaign.



You can see the list of meals available for the flight when you click on ‘Choose Meal’ button. You can select the meal you want to buy and click on ‘Add’ button to purchase. You can also cancel the bought meal by selecting ‘No meal’ option.

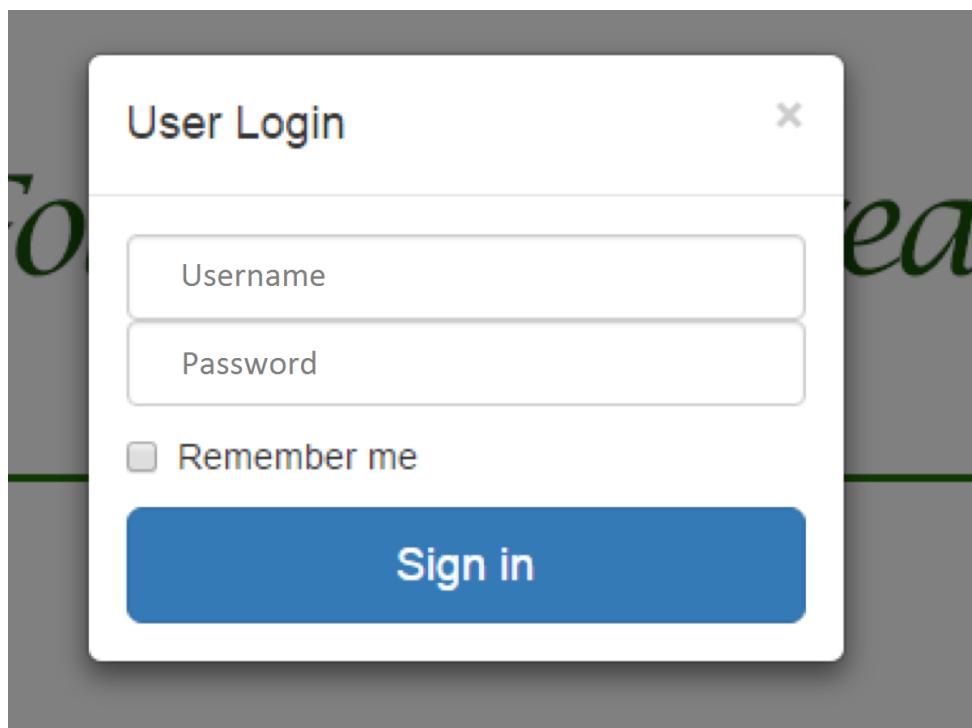


You can see select the extra luggage amount by clicking on 'Buy Extra Luggage' button.

## 6.2. Manager User Manual

The screens manager can access are described in detail.

### 6.2.1. Login Screen



As the manager, you can click on the 'Login' button in the homepage screen in order to login to the system. You are required to enter your username and password. When the login is successful, you are directed to the manager screen.

## 6.2.2. Manage Airports Screen

The screenshot shows the 'AIRPORTS' section of the Airline Corp Manager. On the left, a sidebar menu lists 'Flights', 'Routes', 'Crews', 'Airports' (which is selected and highlighted in grey), 'Customers', 'Flight Information', and 'Planes'. At the top right, there are 'Welcome Manager' and 'Logout' buttons. Below the sidebar, the title 'AIRPORTS' is centered above a blue button labeled '+Add Airport'. A table displays three entries:

Airport Code	Airport City	Address	Capacity	Number of assigned flights	Edit	Delete
ESB	Ankara	Address2	350	10	<a href="#">Edit</a>	<a href="#">Remove</a>
HTR	London	Address1	1000	15	<a href="#">Edit</a>	<a href="#">Remove</a>
SG	Istanbul	Address3	2900	9	<a href="#">Edit</a>	<a href="#">Remove</a>

You can click on 'Airports' tab in order to view all airports registered to the system. The total number of assigned flights to each airport is also shown in detail. You can click on 'Add Airport' button to add a new airport. In order to edit the attributes of the airport you can click on the edit symbol next to each entry. Similarly, you can click on delete symbol to delete the airport from the system. You are informed about the success status of your operations with dialog boxes.

The screenshot shows the 'AIRPORTS' section of the Airline Corp Manager. On the left, a sidebar menu lists 'Flights', 'Routes', 'Crews', 'Airports' (selected and highlighted in grey), 'Customers', 'Flight Information', and 'Planes'. At the top right, there are 'Welcome Manager' and 'Logout' buttons. Below the sidebar, the title 'AIRPORTS' is centered above a blue button labeled '+Add Airport'. The form fields are as follows:

- Code**: A text input field containing '3 Characters Abbreviation'.
- City**: A dropdown menu with the placeholder 'Please select'.
- Airport Capacity**: A text input field containing 'Capacity of Airport'.
- Address**: A text input field containing 'Address of Airport'.

At the bottom left is a blue 'Submit' button. Below the form is a table with the same structure as the one in the previous screenshot:

Airport Code	Airport City	Address	Capacity	Number of assigned flights	Edit	Delete
ESB	Ankara	Address2	350	10	<a href="#">Edit</a>	<a href="#">Remove</a>
HTR	London	Address1	1000	15	<a href="#">Edit</a>	<a href="#">Remove</a>
SG	Istanbul	Address3	2900	9	<a href="#">Edit</a>	<a href="#">Remove</a>

When you click on 'Add Airport' button, the fields shown above are displayed. You can enter the code, capacity, address details of the airport and select the city from the available list of cities. When you click on the 'Submit' button the specified airport is added. If there is missing or erroneous entries, you will be warned by the system.

Airport Code	Capacity	Edit	Delete
ESB	350	<a href="#">Edit</a>	<a href="#">Remove</a>
HTR	1000	<a href="#">Edit</a>	<a href="#">Remove</a>
SG	2900	<a href="#">Edit</a>	<a href="#">Remove</a>

When you click on the edit button the above dialog box is displayed. You can modify the address and capacity of the airport and click on 'Submit' button to save the changes.

### 6.2.3. Manage Planes Screen

Name	Year	Type	Economy Capacity	Business Capacity	Max Flight Time	Storage Capacity	Status	Send to Repair / Return	Edit	Delete
ABC123	2010	E678	200	100	00:23:40	1000	1			
BE2345	2010	E678	200	100	00:23:40	1000	1			
TK7778	2010	E678	200	100	00:23:40	1000	1			
YS1111	2010	E678	200	100	00:23:40	1000	1			

You can click on 'Planes' tab in order to view all planes registered to the system. The details of the planes registered to the system are displayed in this page. You can click on the edit icon in order to change attributes of the planes. Furthermore, using the 'Send to

'Repair/Return' icon you can either send a plane to repair and set it as unavailable or register the plane returned from repair as available. When you click on the delete icon, you can delete the plane from the system. You are informed about the success status of your operations by dialog boxes.

Name	Year	Type	Economy Capacity	Business Capacity	Max Flight Time	Storage Capacity	Status	Send to Repair / Return	Edit	Delete
ABC123	2010	E678	200	100	00:23:40	1000	1			
BE2345	2010	E678	200	100	00:23:40	1000	1			
TK7778	2010	E678	200	100	00:23:40	1000	1			
YS1111	2010	E678	200	100	00:23:40	1000	1			

You can click on 'Add Plane' button and the plane fields appear on the screen. You are required to enter the plane name, production year, and select plane\_type\_id attributes and click 'Add' button to add a new plane. You are warned when there is a missing or erroneous entry.

Examples of dialog boxes indicating success of plane addition and update.

#### 6.2.4. Manage Routes Screen

Welcome Manager [Logout](#)

---

**Airline Corp**

- Flights
- Routes**
- Crews
- Airports
- Customers
- Flight Information
- Planes

## ROUTES

[+Add Route](#)

Route ID	Departs	Arrives	Duration	Distance	Edit	Delete
RT00001111	HTR	SG	00:01:00	1000		
RT00112233	ESB	SG	00:05:00	510000		
RT11110000	SG	HTR	00:01:00	1000		
RT12345678	HTR	ESB	00:04:45	5000		
RT33221100	SG	ESB	00:05:00	510000		
RT87654321	ESB	HTR	00:04:45	5000		

You can click on ‘Routes’ tab in order to view all routes registered to the system. You can click on the delete icon next to the routes in order to remove the route from the system. You are informed about the status of your operations with dialog boxes.

Welcome Manager [Logout](#)

---

**Airline Corp**

- Flights
- Routes**
- Crews
- Airports
- Customers
- Flight Information
- Planes

## ROUTES

[+Add Route](#)

**Route ID**  
RTXXXXXXXX

**Departure Airport**  
Please select

**Arrival Airport**  
Please select

**Duration**  
DD:HH:MM

**Distance**  
Distance in Miles

[Submit](#)

Route ID	Departs	Arrives	Duration	Distance	Edit	Delete
RT00001111	HTR	SG	00:01:00	1000		
RT00112233	ESB	SG	00:05:00	510000		
RT11110000	SG	HTR	00:01:00	1000		
RT12345678	HTR	ESB	00:04:45	5000		
RT33221100	SG	ESB	00:05:00	510000		

When you click on ‘Add Route’ button the above shown fields are displayed. You are required to enter route id, duration, and distance details. You can select the departure and arrival airports from the list of available airports. When you click on the ‘Submit’ button the

route is registered to the system. You are informed about the status of addition and warned when there is a missing or erroneous entry.

The screenshot shows the 'Airline Corp' application interface. On the left, a sidebar menu includes 'Flights', 'Routes' (which is selected), 'Crews', 'Airports', 'Customers', 'Flight Information', and 'Planes'. The main area is titled 'ROUTES' and features a button '+Add Route'. A modal window titled 'Edit Route' is open, containing fields for 'Route ID' (RT00001111), 'Departure' (HTR), and 'Arrival' (SG). Below these, a table lists routes with columns for 'Route ID', 'Duration', 'Distance', 'Edit', and 'Delete'. The table data is as follows:

Route ID	Duration	Distance	Edit	Delete
RT00001111	00:01:00	1000		
RT00112233		510000		
RT11110000		1000		
RT12345678		5000		
RT33221100		510000		
RT87654321		5000		

At the bottom of the modal are 'Close' and 'Submit' buttons.

When you click on the edit icon next to the route in order to change the details of the attributes. You can edit duration information and save your changes.

### 6.2.5. Manage Flights Screen

The screenshot shows a web-based application interface for managing flights. At the top, there's a navigation bar with 'Welcome Manager' and a 'Logout' button. On the left, a sidebar menu lists 'Airline Corp' with sub-options: 'Flights' (selected and highlighted in blue), 'Routes', 'Crews', 'Airports', 'Customers', 'Flight Information', and 'Planes'. Below the sidebar is a section titled 'FLIGHTS' with a 'Add Flight' button. The main content area displays a table of flight data with the following columns: Flight ID, Plane Name, Route ID, Date, Departure Time, Luggage, Economy Price, Business Price, Delay(minutes), Crew, Edit, and Delete. There are 18 rows of flight data listed.

	Flight ID	Plane Name	Route ID	Date	Departure Time	Luggage	Economy Price	Business Price	Delay(minutes)	Crew	Edit	Delete
Airports	F20	ABC123	RT12345678	2016-09-20	12:00:00	132	200	500	0			
Customers	F0	ABC123	RT12345678	2016-09-21	12:00:00	132	200	500	0			
Flight Information	F1	ABC123	RT12345678	2016-10-20	12:00:00	234	210	550	0			
Planes	F2	ABC123	RT33221100	2016-07-09	35:10:00	50	320	470	0			
	F3	ABC123	RT33221100	2017-01-02	14:50:00	50	320	470	0			
	F21	ABC123	RT87654321	2016-10-10	12:00:00	132	200	230	0			
	F22	ABC123	RT87654321	2016-10-11	14:59:00	132	200	350	0			
	F10	BE2345	RT00001111	2013-10-02	12:50:00	23	120	890	0			
	F9	BE2345	RT00001111	2014-07-29	10:00:00	56	210	450	0			
	F16	BE2345	RT00001111	2016-05-29	10:55:00	30	60	100	0			
	F17	BE2345	RT00001111	2016-05-29	12:00:00	30	70	450	0			
	F18	BE2345	RT00001111	2016-05-30	14:50:00	30	80	300	0			

You can click on 'Flights' tab in order to view all flights registered to the system. All details of the flight such as route, plane, date, time, price, luggage, meal, delay are displayed. In order to delete a flight from the system, you can click on the respective delete icon. You can also assign crew to the flight by clicking on the crew icon. You are informed on the success of your operations with dialog boxes.

**Airline Corp**

**FLIGHTS**

**+Add Flight**

<b>Flight ID</b>	FXXX
<b>Route ID</b>	RXXXXXXX
<b>PlaneName</b>	The Spirit
<b>Meals</b>	Beef
<b>Date</b>	2016-01-01
<b>Time</b>	12:00:00
<b>Luggage</b>	10000
<b>Price For Economy</b>	750
<b>Price For Business</b>	1500
<b>Delay</b>	0
<b>Seatmap</b>	0

**Add**

When the ‘Add Flight’ button is clicked, the above shown fields are displayed. You can enter the flight id, route id, plane, meal, date, time, luggage, price, delay, and seat map details in order to register a new flight to the system. When you click on the ‘Add’ button the flight is recorded to the system. You are warned when there is a missing or erroneous entry.

Welcome Manager [Logout](#)

**Airline Corp**

- Flights
- Routes
- Crews
- Airports
- Customers
- Flight Information
- Planes

## FLIGHTS

[+Add Flight](#)

Flight ID	Plane Name	Route ID	Business Price	Delay(minutes)	Crew	Edit	Delete			
F20	ABC123	RT12345	500	0						
F0	ABC123	RT12345	500	0						
F1	ABC123	RT12345	550	0						
F2	ABC123	RT33221	470	0						
F3	ABC123	RT33221	470	0						
F21	ABC123	RT87654	230	0						
F22	ABC123	RT87654	350	0						
F10	BE2345	RT00001111	500	0						
F9	BE2345	RT00001111	450	0						
F16	BE2345	RT00001111	10:00:00	56	210					
F17	BE2345	RT00001111	10:55:00	30	60	100				
F18	BE2345	RT00001111	12:00:00	30	70	450				
F11	BE2345	RT11110000	14:50:00	19	420	300	0			
						0				

**Edit Flight**

**Give Delay**

**Flight ID**

**Route ID**

**PlaneName**

**Meals**

**Date**

**Time**

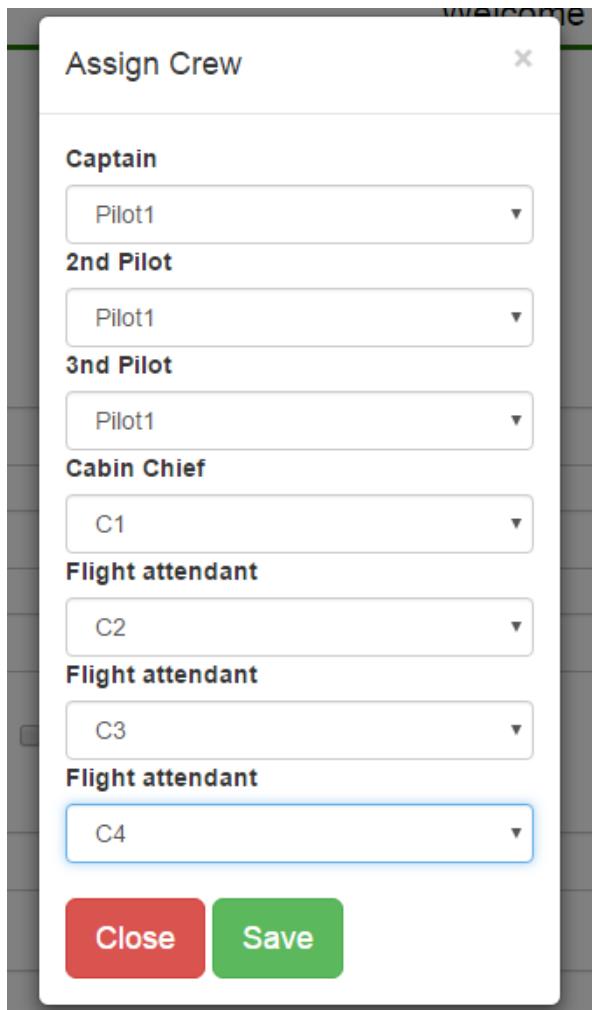
**Luggage**

**Price For Economy**

**Price For Business**

[Close](#) [Submit](#)

Edit Flight box appears when the edit icon is clicked. You can edit information of a flight from this screen, give delay, or update prices. You can save the changes by clicking on the 'Submit' button.



When the 'Assign Crew' icon is clicked the above shown dialog box appears. You can select flight attendants and pilots to be assigned to the flight and save the changes by clicking on the respective button

### 6.2.6. View Flight Status Screen

Welcome Manager      [Logout](#)

**Airline Corp**

- [Flights](#)
- [Routes](#)
- [Crews](#)
- [Airports](#)
- [Customers](#)
- [Flight Information](#)
- [Planes](#)

### Search Flights with id

Flight id: F6

Boeing B777-300ER (311 seats)

First Class: Rows 1 - 2: 8 seats   Business Class: Rows 11 - 17: 42 seats   Economy Class: Rows 31 - 60: 261 seats

Wing

Legend: First Class (Red), Business Class (Blue), Economy Class (Green), Lavatory (Yellow circle), Accessible Lavatory (Yellow square), Bar unit (Yellow triangle), Closed (Grey circle), Exit (Red triangle).

**Delay of the Flight: 0 minutes**

**Reserved / Sold / Total Tickets: 4 - 3 - 7**

**Current Reservations for Flight F6**

Ticket/Reservation No	User Name	Customer Name	Class	Meal	Extra Luggage	Reserved/Sold	Delete
1046	harry	Harry Potter	B	Beaf	1	Sold	<a href="#">Remove</a>
1986	luna	Luna Lovegood	B	Beaf	1	Sold	<a href="#">Remove</a>
1546	ron	Ron Weasley	E	Salad	1	Sold	<a href="#">Remove</a>
9861	harry	Harry Potter	E	-	-	Reserved	<a href="#">Remove</a>
9863	hermonie	Hermonie Granger	B	-	-	Reserved	<a href="#">Remove</a>
9865	luna	Luna Lovegood	B	-	-	Reserved	<a href="#">Remove</a>
9800	ron	Ron Weasley	B	-	-	Reserved	<a href="#">Remove</a>

You can click on 'Flight Information' tab to view all flights along with the status, reserved and sold ticket numbers and the list of tickets. In the flight id field, you are required to enter the id of the flight you are searching and click on 'Submit' button to implement the search. The page displays the delay amount of the selected flight and the number of reserved and sold tickets for the flight. The details of all reservations and tickets that belong to the flight are listed. In order to delete a ticket or reservation of the customers, you can click on 'Remove' button. You are informed about the success of your operations with dialog boxes.

## 6.2.7. Manage Staff Screens

### 6.2.7.1. Manage Pilot Screen

The screenshot shows a web-based application interface for managing staff. On the left, there is a sidebar with the following menu items: Airline Corp, Flights, Routes, Crews (which is highlighted in grey), Airports, Customers, Flight Information, and Planes. At the top right, there are buttons for 'Welcome Manager' and 'LOG OUT'. Below the sidebar, there are two tabs: 'Pilots' (which is selected and highlighted in blue) and 'Flight attendants'. The main content area is titled 'Pilots' and contains a 'Add a pilot' button. Below this, there is a table listing two pilots:

StaffID	Name	Salary	BirthDate	Gender	Phone	LicenseNo	Rank	Maximum Flight Distance	Edit	Remove
00000002	Mert Aytore	12000	1990-03-12	M		LC47294621	1	10000	Edit	Remove
00000004	Adam Smith	13000	1980-03-12	M		LC628462	2	20000	Edit	Remove

When you click on 'Crew' tab, the above page is shown. The first tab in the page is for displaying pilot details. The id, name, salary, gender, phone, rank, flight distance details are listed for each pilot. In order to remove a pilot from the system, you can click on the respective 'Remove' button. You are informed about the success status of your operation with dialog boxes.

The screenshot shows the 'Add a pilot' form. The sidebar on the left is identical to the previous screenshot. The main content area is titled 'Pilots' and contains a 'Add a pilot' button. Below this, there are several input fields for entering pilot information:

- StaffId: 1111111
- Name: Sample Pilot
- Salary: 4000\$
- Birthdate: XX/XX/XXXX
- Gender: M/F
- Phone: +90XXXXXXXXX
- LicenseNo: XXXXXXXXX
- Rank: XXX
- Maximum Flight Distance: XX.XXX

At the bottom of the form is a 'Submit' button.

When you click on the 'Add a pilot' button, the above shown fields are displayed. You can enter the id, name, salary, birthdate, gender, phone, rank, license, and distance details and click on 'Submit' button to add the pilot. You are warned when there are missing entries.

The screenshot shows a web-based application interface for managing staff. At the top, a navigation bar includes 'Welcome Manager' and 'LOG OUT'. Below this, a sidebar on the left lists 'Pilots' and 'Flights', with a prominent blue button labeled '+ Add a p...'. The main content area displays a table of staff members with columns for StaffID, Name, Salary, Birthdate, Gender, Phone, License, Rank, Maximum Flight Distance, Edit, and Remove. One row is selected, showing details for a pilot named Adam Smith with StaffID 00000004. A modal dialog box titled 'Edit Pilot' is overlaid on the page, containing input fields for all the listed attributes. The dialog has a close button and a blue 'Submit' button at the bottom. The background table shows a single row of data: LC628462, 2, 20000, with 'Edit' and 'Remove' links.

StaffID	Name	Salary	Birthdate	Gender	Phone	License	Rank	Maximum Flight Distance	Edit	Remove
00000004	Adam Smith	13000	1980-03-12	M		LC628462	2	20000	Edit	Remove

If you want to edit information of a pilot, you can click on the respective 'Edit' button and the above dialog box is shown. You can edit details of the pilot from this page and click on the respective button in order to save your changes.

#### 6.2.7.2. Manage Flight Attendant Screen

Welcome Manager LOG OUT

**Airline Corp**

- [Flights](#)
- [Routes](#)
- [Crews](#)
- [Airports](#)
- [Customers](#)
- [Flight Information](#)
- [Planes](#)

Pilots Flight attendants

**Attendants**

+ Add an attendant

StaffID	Name	Salary	BirthDate	Gender	Phone	LicenseNo	Rank	Class	Edit	Delete
00000003	Berceste Dincer	3000	1992-04-11	F		FA47294621	3	B	<span style="color: #0070C0;">Edit</span>	<span style="color: #0070C0;">Remove</span>
00000005	Lucy James	3000	1992-04-11	F		FA47294621	3	E	<span style="color: #0070C0;">Edit</span>	<span style="color: #0070C0;">Remove</span>

You can change the tab to ‘Flight attendants’ in order display flight attendant details. The id, name, salary, gender, phone, rank, class details are listed for each flight attendant. In order to remove a flight attendant from the system, you can click on the respective ‘Remove’ button. You are informed about the success status of your operation with dialog boxes.

Welcome Manager LOG OUT

**Airline Corp**

- [Flights](#)
- [Routes](#)
- [Crews](#)
- [Airports](#)
- [Customers](#)
- [Flight Information](#)
- [Planes](#)

Pilots Flight attendants

**Attendants**

+ Add an attendant

**StaffId**

**Name**

**Salary**

**Birthdate**

**Gender**

**Phone**

**LicenseNo**

**Rank**

**Serving Class**

Add

When you click on the 'Add an attendant' button, the above shown fields are displayed. You can enter the id, name, salary, birthdate, gender, phone, rank, license, and service class details and click on 'Add' button to add the flight attendant. You are warned when there are missing entries.

Welcome Manager LOG OUT

Edit Attendants Crew ×

StaffID	Name	Salary	Birthdate	Gender	Phone	License	Rank	Class	Maximum Flight Distance
00000003	Berceste Dincer	3000	1992-04-11	F		FA47294621	2	B	20000
00000004	A	S					LC628462		

**Pilots** + Add a p

**Staff Id** 00000003  
**Name** Berceste Dincer  
**Salary** 3000  
**Birthdate** 1992-04-11  
**Gender** F  
**Phone**  
**License** FA47294621  
**Rank** 2  
**Class** B

Close Submit

If you want to edit information of a flight attendant, you can click on the respective 'Edit' button and the above dialog box is shown. You can edit details of the flight attendant from this page and click on the respective button in order to save your changes.

### 6.2.8. View Customers Screen

Welcome Manager      Logout

---

**Airline Corp**

- Flights
- Routes
- Crews
- Airports
- Customers**
- Flight Information
- Planes

## CUSTOMERS

### Search Customers with name

Customer name:

**Show Customers with + 10.000 miles**

Username	Name	Birthdate	Total Miles	Reservations
harry	Harry Potter	1990-07-12	15500	<input type="button" value="Edit"/> <input type="button" value="Remove"/>
hermonie	Hermonie Granger	1990-04-03	38000	<input type="button" value="Edit"/> <input type="button" value="Remove"/>
luna	Luna Lovegood	1991-04-03	13000	<input type="button" value="Edit"/> <input type="button" value="Remove"/>
ron	Ron Weasley	1990-11-06	23000	<input type="button" value="Edit"/> <input type="button" value="Remove"/>

You can click on 'Customers' tab to view all customers. In this page you can view the username, name, birthdate, and total mile details of the customers. You can also search for a specific customer by entering customer name. In order to remove the particular customer, you can click on the respective button. You are informed about the status of your actions with dialog boxes.

Welcome Manager      Logout

---

**Airline Corp**

- Flights
- Routes
- Crews
- Airports
- Customers**
- Flight Information
- Planes

## CUSTOMERS

### Search Customers with name

Customer name:

**Show Customers with + 10.000 miles**

Username	Name	Birthdate	Total Miles
harry	Harry Potter	1990-07-12	15500
hermonie	Hermonie Granger	1990-04-03	38000
luna	Luna Lovegood	1991-04-03	13000
ron	Ron Weasley	1990-11-06	23000

Username	Name	Birthdate	Total Miles	Reservations
harry	Harry Potter	1990-07-12	15500	<input type="button" value="Edit"/> <input type="button" value="Remove"/>
hermonie	Hermonie Granger	1990-04-03	38000	<input type="button" value="Edit"/> <input type="button" value="Remove"/>
luna	Luna Lovegood	1991-04-03	13000	<input type="button" value="Edit"/> <input type="button" value="Remove"/>
ron	Ron Weasley	1990-11-06	23000	<input type="button" value="Edit"/> <input type="button" value="Remove"/>

When 'Show Customers with +10.000 miles' button is clicked, the customers who have collected over 10,000 miles are displayed. With these functions, you are allowed to view the customers with promotions.

The screenshot shows a web-based flight booking application interface. At the top, there is a header with 'Welcome Manager' and a 'Logout' button. Below the header, the title 'Info of User luna' is displayed. The page lists several flight records under two main sections: 'Reserved Flight' and 'Past Flight'. Each section contains a table with columns: From, To, Total Duration, Departure Time, Date, and Class. A 'Details' button is located at the bottom of each table row.

Reserved Flight						RETURN
From	To	Total Duration	Departure Time	Date	Class	
HTR	ESB	00:04:45	12:00:00	2016-09-21	E	<a href="#">Details</a>

Reserved Flight						RETURN
From	To	Total Duration	Departure Time	Date	Class	
HTR	ESB	00:04:45	12:00:00	2016-09-21	B	<a href="#">Details</a>

Reserved Flight						RETURN
From	To	Total Duration	Departure Time	Date	Class	
HTR	ESB	00:04:45	12:00:00	2016-10-20	E	<a href="#">Details</a>

Reserved Flight						RETURN
From	To	Total Duration	Departure Time	Date	Class	
ESB	HTR	00:04:45	16:30:00	2016-12-15	B	<a href="#">Details</a>

Past Flight					
From	To	Total Duration	Departure Time	Date	Class
HTR	SG	00:01:00	12:50:00	2013-10-02	E

Past Flight					
From	To	Total Duration	Departure Time	Date	Class
HTR	SG	00:01:00	10:00:00	2014-07-29	B

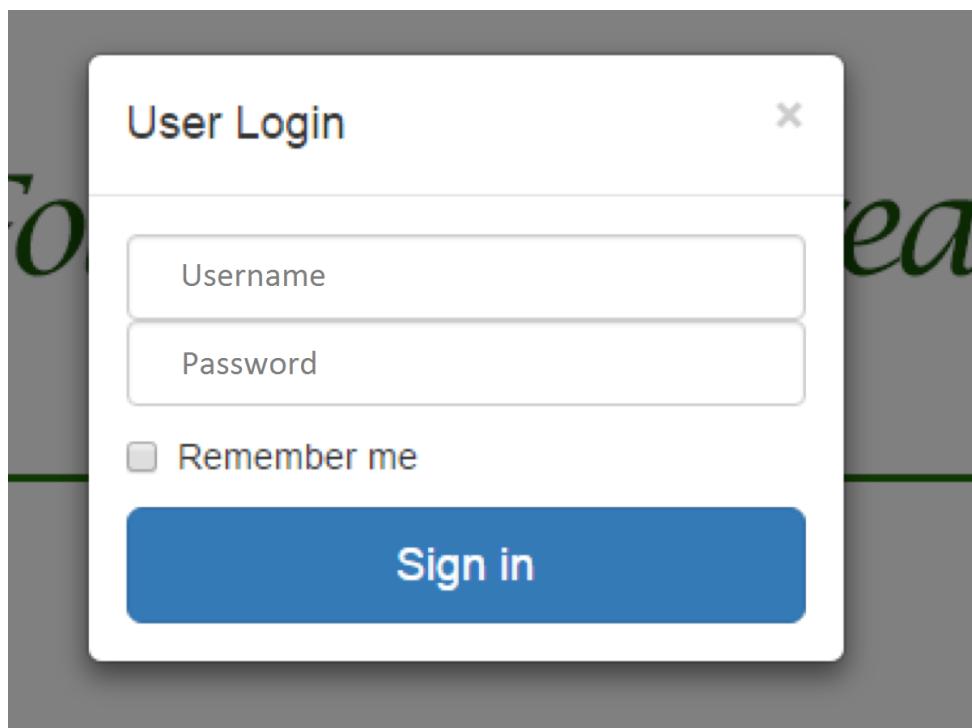
Reserved Flight						 RETURN		
From	To	Total Duration	Departure Time	Date	Class			
ESB	HTR	00:04:45	16:30:00	2016-12-15	B			
<a href="#">Details</a>								
Past Flight						 RETURN		
From	To	Total Duration	Departure Time	Date	Class			
HTR	SG	00:01:00	12:50:00	2013-10-02	E			
<a href="#">Details</a>								
Past Flight						 RETURN		
From	To	Total Duration	Departure Time	Date	Class			
HTR	SG	00:01:00	10:00:00	2014-07-29	B			
<a href="#">Details</a>								
Flight No	Ticket No	From	To	Duration	Departure Time	Date	Meal	Class
F9	1032	HTR	SG	00:01:00	10:00:00	2014-07-29	Beaf Pasta Chicken	B
Bought Flight						 RETURN		
From	To	Total Duration	Departure Time	Date	Class			
SG	HTR	00:01:00	15:45:00	2017-01-02	E			
<a href="#">Details</a>								
Flight No	Ticket No	From	To	Duration	Departure Time	Date	Meal	Class
F5	1233	SG	HTR	00:01:00	15:45:00	2017-01-02	Beaf Pasta Chicken	E
Bought Flight						 RETURN		
From	To	Total Duration	Departure Time	Date	Class			
ESB	HTR	00:04:45	21:45:00	2016-10-31	B			
<a href="#">Details</a>								
Bought Flight						 RETURN		

You can view the reservations and tickets of a customer by clicking on the respective ‘Reservations’ button. In the above shown page, you can display all the reservations, tickets and past flights of the customer. In order to delete a ticket or reservation of a customer, you can click on the ‘Return’ icon of the respective button. You are informed about the status of your operations with dialog boxes.

### 6.3. Salesperson User Manual

The screens salesperson can access are described in detail.

#### 6.3.1. Salesperson Login Screen



As the salesperson, you can click on the 'Login' button in the homepage screen in order to login to the system. You are required to enter your username and password. When the login is successful, you are directed to the salesperson screen

### 6.3.2. View Flight Status Screen

Airline Corp

Welcome Salesperson [Logout](#)

**Search Flights with id**

Flight id: F6

Boeing B777-300ER (311 seats)  
 First Class: Rows 1 - 2; 8 seats   Business Class: Rows 11 - 17; 42 seats   Economy Class: Rows 31 - 60; 261 seats

Wing

Legend: First Class (Red), Business Class (Blue), Economy Class (Green), Lavatory (Yellow), Accessible Lavatory (Yellow with L), Bar unit (Yellow with B), Galley (Yellow with G), Closet (Yellow with C), Exit (Red triangle).

Delay of the Flight: 0 minutes

Reserved / Sold / Total Tickets: 4 - 3 - 7

Current Reservations for Flight F6

Ticket/Reservation No	User Name	Customer Name	Class	Meal	Extra Luggage	Reserved/Sold	Delete
1046	harry	Harry Potter	B	Beaf	1	Sold	<a href="#">Remove</a>
1986	luna	Luna Lovegood	B	Beaf	1	Sold	<a href="#">Remove</a>
1546	ron	Ron Weasley	E	Salad	1	Sold	<a href="#">Remove</a>
9861	harry	Harry Potter	E	-	-	Reserved	<a href="#">Remove</a>
9863	hermonie	Hermonie Granger	B	-	-	Reserved	<a href="#">Remove</a>
9865	luna	Luna Lovegood	B	-	-	Reserved	<a href="#">Remove</a>
9800	ron	Ron Weasley	B	-	-	Reserved	<a href="#">Remove</a>

You can click on 'Flight Information' tab to view all flights along with the status, reserved and sold ticket numbers and the list of tickets. In the flight id field, you are required to enter the id of the flight you are searching and click on 'Submit' button to implement the search. The page displays the delay amount of the selected flight and the number of reserved and sold tickets for the flight. The details of all reservations and tickets that belong to the flight are listed. In order to delete a ticket or reservation of the customers, you can click on 'Remove' button You are informed about the success of your operations with dialog boxes.

### 6.3.3. Salesperson Customer View

Welcome Salesperson      Logout

**Airline Corp**

- Flights
- Routes
- Crews
- Airports
- Customers**
- Flight Information
- Planes

**CUSTOMERS**

Show Customers with + 10.000 miles

Username	Name	Birthdate	Total Miles	Reservations
harry	Harry Potter	1990-07-12	15500	<a href="#">Edit</a> <a href="#">Remove</a>
hermonie	Hermonie Granger	1990-04-03	38000	<a href="#">Edit</a> <a href="#">Remove</a>
luna	Luna Lovegood	1991-04-03	13000	<a href="#">Edit</a> <a href="#">Remove</a>
ron	Ron Weasley	1990-11-06	23000	<a href="#">Edit</a> <a href="#">Remove</a>

You can click on ‘Customers’ tab to view all customers. In this page you can view the username, name, birthdate, and total mile details of the customers. In order to remove a particular particular, you can click on the respective button. You are informed about the status of your actions with dialog boxes.

Welcome Salesperson      Logout

**Airline Corp**

- Flights
- Routes
- Crews
- Airports
- Customers**
- Flight Information
- Planes

**CUSTOMERS**

Show Customers with + 10.000 miles

Username	Name	Birthdate	Total Miles
harry	Harry Potter	1990-07-12	15500
hermonie	Hermonie Granger	1990-04-03	38000
luna	Luna Lovegood	1991-04-03	13000
ron	Ron Weasley	1990-11-06	23000

Username	Name	Birthdate	Total Miles	Reservations
harry	Harry Potter	1990-07-12	15500	<a href="#">Edit</a> <a href="#">Remove</a>
hermonie	Hermonie Granger	1990-04-03	38000	<a href="#">Edit</a> <a href="#">Remove</a>
luna	Luna Lovegood	1991-04-03	13000	<a href="#">Edit</a> <a href="#">Remove</a>
ron	Ron Weasley	1990-11-06	23000	<a href="#">Edit</a> <a href="#">Remove</a>

When 'Show Customers with +10.000 miles' button is clicked, the customers who have collected over 10,000 miles are displayed. With these functions, you are allowed to view the customers with promotions.

#### 6.3.4. Salesperson Customer Reservations & Tickets View

## Info of User xxx with name xxx

Bought Flight - X days X hrs left to flight							<a href="#">Apply Promotion</a>	<a href="#">Change Meal</a>	<a href="#">Buy Extra Luggage</a>	<a href="#">Change Seat</a>	<a href="#">RETURN</a>
From	To	Total Duration	Departure Time	Arrival Time	Luggage	Class					
Ankara(ESB)	Munich(MUC)	4 hrs 32 mins	11/11/1111 : 88:88	11/11/1111 : 88:88	No extra luggage	Economy					
<a href="#">Details</a>											

Bought Flight - X days X hrs left to flight							<a href="#">Apply Promotion</a>	<a href="#">Change Meal</a>	<a href="#">Cancel Extra Luggage</a>	<a href="#">Change Seat</a>	<a href="#">RETURN</a>
From	To	Total Duration	Departure Time	Arrival Time	Luggage	Class					
Ankara(ESB)	Munich(MUC)	4 hrs 32 mins	11/11/1111 : 88:88	11/11/1111 : 88:88	15 kg extra luggage	Economy					
<a href="#">Details</a>											

Flight Ticket No From To Duration Departure Time Arrival Time Seat Meal Class								
TK 1111	T3468731	Ankara(ESB)	Istanbul(XXX)	0 hrs 32 mins	11/11/1111 : 88:00	11/11/1111 : 88:35	1A	Beef Economy
AC 2222	A22123131	Istanbul(XXX)	Munich(Much)	3 hrs 25 mins	11/11/1111 : 88:35	11/11/1111 : 88:35	7F	Beef Economy

Reserved Flight - X hrs left to cancellation							<a href="#">CANCEL</a>	<a href="#">BUY</a>
From	To	Total Duration	Departure Time	Arrival Time	Class			
Ankara(ESB)	Munich(MUC)	4 hrs 32 mins	11/11/1111 : 88:88	11/11/1111 : 88:88	Economy			
<a href="#">Details</a>								

Reserved Flight - X days X hrs left to cancellation							<a href="#">CANCEL</a>	<a href="#">BUY</a>
From	To	Total Duration	Departure Time	Arrival Time	Class			
Ankara(ESB)	Munich(MUC)	4 hrs 32 mins	11/11/1111 : 88:88	11/11/1111 : 88:88	Economy			
<a href="#">Details</a>								

Past Flight						
From	To	Total Duration	Departure Time	Arrival Time	Class	
Ankara(ESB)	Munich(MUC)	4 hrs 32 mins	11/11/1111 : 88:88	11/11/1111 : 88:88	Economy	

When you select ‘Reservations’ from the customer screen, the page above is shown. You can see the existing reservations of the selected customer in detail. When you click on ‘Details’ button, ticket’s available information is provided. You are able to perform any

operation the customer can perform in this page in order to help the customer with the process.

You can click 'Cancel' button to cancel the reservation and click 'Buy' button to purchase the ticket. You can click 'Apply Promotion' button to select a campaign or sale to apply to the ticket from the list of available promotions. 'Change Meal' button is clicked to select a meal.

You can click on 'Buy Extra Luggage' to specify the amount of extra luggage. You can click 'Change Seat' to select a seat from the list of seats. When you press 'Return' button the ticket is refunded. You are informed about the status of your actions with dialog boxes.