VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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A Mini Project Report on

AIRPORT MANAGEMENT SYSTEM

Submitted in partial fulfillment of the requirements as a part of the DBMS Lab for the V Semester of degree of ***Bachelor of Engineering in Information Science and Engineering*** *of Visvesvaraya Technological University, Belagavi*

Submitted by

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Department of Information Science and Engineering

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2019 – 2020

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CERTIFICATE

This is to certify that the Mini Project report entitled ***AIRPORT MANAGEMENT SYSTEM*** has been successfully completed by **ADITI JADON** bearing USN **1RN17IS007** and **MANAN SAHLOT** bearing USN **1RN17IS051**, presently V semester student of **RNS Institute of Technology** in partial fulfillment of the requirements as a part of the DBMS Laboratory for the award of the degree ***Bachelor of Engineering in Information Science and Engineering*** under **Visvesvaraya Technological University, Belagavi** during academic year 2019 – 2020. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The Mini Project report has been approved as it satisfies the academic requirements as a part of DBMS Laboratory for the said degree.

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DECLARATION

We, **ADITI JADON [USN:1RN17IS007]** and **MANAN SAHLOT [USN:1RN17IS051]** students of V Semester BE, Information Science and Engineering, RNS Institute of Technology hereby declare that the Mini Project work entitled ***Airport Management System*** has been carried out by us and submitted in partial fulfillment of the requirements for the *V Semester degree of* ***Bachelor of Engineering in Information Science and Engineering*** *of Visvesvaraya Technological University, Belagavi* during academic year 2019-2020.

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ABSTRACT

Airport management system is a database project implemented in Oracle, primarily deals with the management of the airport, airlines, passengers and employees working for an airport. The system provides a broad overview of underlying operational factors that influence the airport management. The object of this project is to design and implement Airport Management with user interface and administrator interface using php and MySQL. It includes details such as passenger with fields such as name, address phone number and passport details which will be stored in database for verification.

If the user needs to cancel the booking he can do cancellation providing details to the administrator. Flight details have to be maintained including flight no, code, source and destination etc. which is to be considered during booking. Airport Management System is developed in HTML as front end and SQL SERVER as server side scripting language. All the code is triggered by specific events that there user performs. This puts the user firmly in control of how the program flows.

ACKNOWLEDGMENT

The fulfillment and rapture that go with the fruitful finishing of any assignment would be inadequate without the specifying the people who made it conceivable, whose steady direction and support delegated the endeavors with success.

We would like to profoundly thank **Management** of **RNS Institute of Technology** for providing such a healthy environment to carry out this Mini Project work.

We would like to thank our beloved Director **Dr. H N Shivashankar** for his confidence feeling words and support for providing facilities throughout the course.

We would like to express our thanks to our Principal **Dr. M K Venkatesha** for his support and inspired me towards the attainment of knowledge.

We wish to place on record our words of gratitude to **Dr. M V Sudhamani,** Professor and Head of the Department, Information Science and Engineering, for being the enzyme and master mind behind our Mini Project work.

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We would like to express our profound and cordial gratitude to my Faculty Incharge **Mrs. Chandan Rani S R**, Assistant Professor, Department of Information Science and Engineering for her valuable guidance in preparing Mini Project report.

We would like to thank all other teaching and non-teaching staff of Information Science & Engineering who have directly or indirectly helped me to carry out the project work.

And lastly, we would hereby acknowledge and thank our parents who have been a source of inspiration and also instrumental in carrying out this Mini Project work.

ADITI JADON (1RN17IS007)
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ABBREVIATIONS

HTML	-	Hypertext Markup Language
CSS	-	Cascading Style Sheet
PHP	-	Hypertext Pre-processor
DBMS	-	Database Management System
RDBMS	-	Relational Database Management System
GUI	-	Graphical User Interface
MySQL	-	My Structured Query Language

Chapter 1

INTRODUCTION

1.1 Background

A database is an organized collection of data, generally stored and accessed electronically from a computer system. Where databases are more complex they are often developed using formal design and modeling techniques.

The database management system (DBMS) is the software that interacts with end users, applications, the database itself to capture and analyze the data and provides facilities to administer the database. The sum total of the database, the DBMS and the associated applications can be referred to as a "database system". Often the term "database" is also used to loosely refer to any of the DBMS, the database system or an application associated with the database. The DBMS manages three important things: the data, the database engine that allows data to be accessed, locked and modified and the database schema, which defines the database's logical structure. These three foundational elements help provide concurrency, security, data integrity and uniform administration procedures. Typical database administration tasks supported by the DBMS include change management, performance monitoring/tuning and backup and recovery. Many database management systems are also responsible for automated rollbacks, restarts and recovery as well as the logging and auditing of activity.

1.2 Introduction

The System is based on Airport Management. System primarily deals with management of airport, airlines and passengers. The system provides broad overview of underlying operational factors that influence the airport management. The database system has the data of all commercial service airports. An airport is located in a city. All International airlines operating through various countries across the world have their offices located in all major cities and airports they cover. Hence, an airport can have many airline offices. Airline companies serve flights. Every flight is uniquely identified by a flight code. Flight code is a combination of an airline code and four-digit number.

A passenger is uniquely identified by a passenger id and a passport number. Every passenger has details such as name, address, age, sex, and phone. An air ticket has information such as the passenger's name, the issuing airline, ticket number, source, destination, journey date, seat no, class, fare. Every airport has employees working for it. Every employee is identified by SSN. Every employee has an information such as name, address, phone, age, sex, salary. Employees in the role of administrative support, engineer, traffic controller and airport authority work at the airport.

Chapter 2

ER DIAGRAM AND RELATION SCHEMA

2.1 Description of ER Diagram

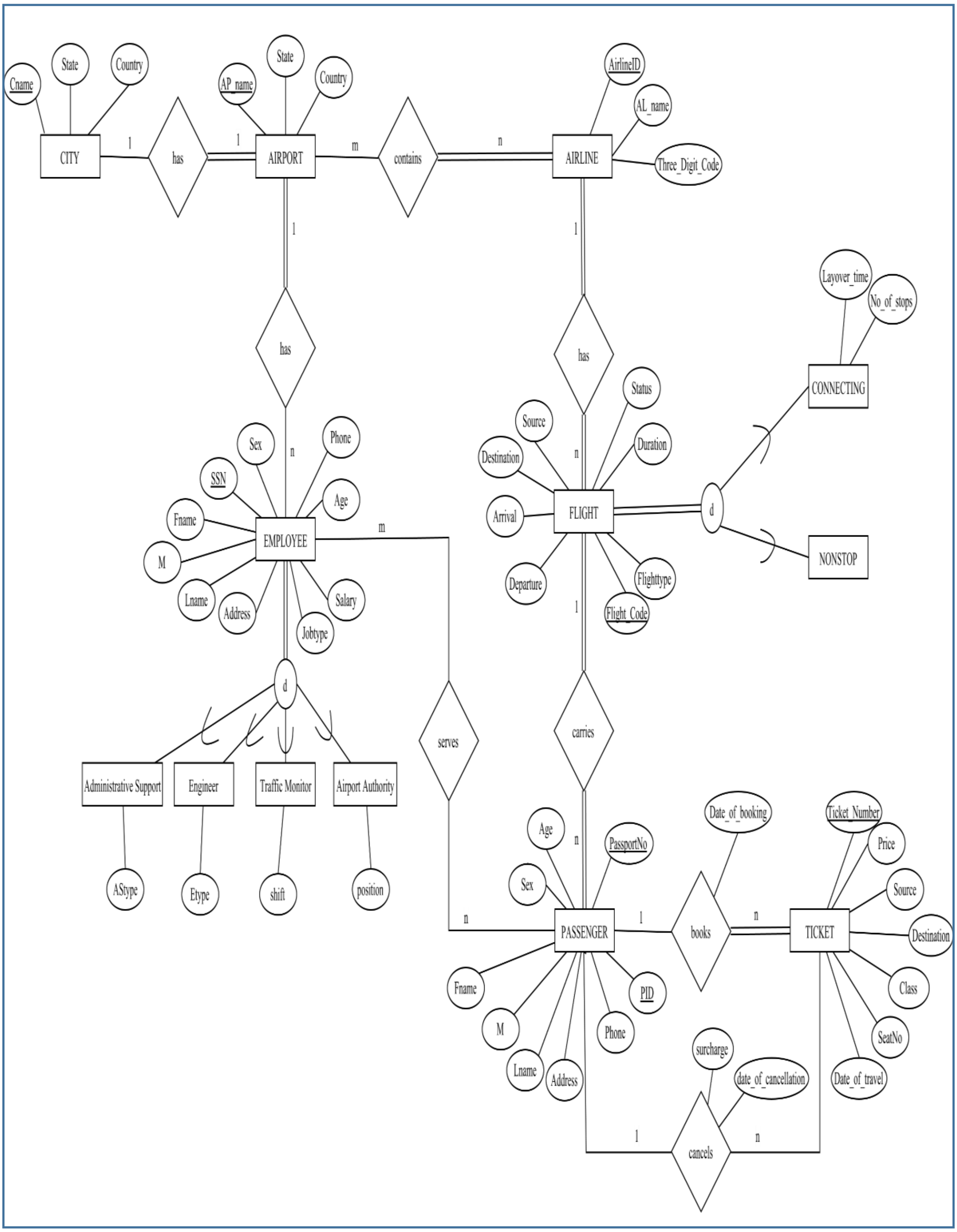


Figure 2.1: ER diagram of Airport Management System

The E-R Diagram in Fig 2.1 describes entities, attributes and relationships.

- Entity types like CITY, AIRPORT AND TICKET are in rectangular boxes.
- Relationships like SERVES and CONTAINS are in diamond boxes, attached to entity types with straight lines.
- Attributes are shown in ovals, each attached by a straight line to entity or relationship type.
- Key attributes (like SSN and PID) are underlined.
- Component attributes of a composite attribute are attached to oval representing.

2.1.1 E-R Diagram Relationship Description

1. CITY: AIRPORT is of cardinality 1:1 as one city can have only one airport and therefore connected via 'has' relationship. There is a total participation of AIRPORT and partial participation of CITY as:

- An airport cannot exist without a city.
- A city can exist without airport.

2. AIRPORT: AIRLINE is of cardinality M: N as an airport can have N airlines and an airline can be on M airports. They are connected via relationship 'carries'. There is a total participation of AIRLINE and partial participation of AIRPORT as:

- An airline cannot exist without an AIRPORT.
- An AIRPORT has AIRLINES.

3. AIRPORT: EMPLOYEE is of cardinality 1: N as one airport can have N employees. They are connected via relationship 'has'. There is total participation of airport and partial participation of employees as:

- An airport cannot exist without employees.
- Employees can exist without airport.

4. EMPLOYEE: PASSENGER is of cardinality M: N as M employees can be there for serving N passengers. They are connected via relationship 'serves'. There is partial participation from both sides as:

- Employees can exist without passengers.
- Passengers can exist without employees.

5. AIRLINE: FLIGHT is of cardinality 1: N as 1 Airline can have N flights in a day. They are connected via relationship ‘has’. There is total participation from both sides as:

- ➢ Airline cannot exist without flight.
- ➢ Flight cannot exist without airline.

6. FLIGHT: PASSENGER is of cardinality 1: N as 1 flight can have N passengers. They are connected via relationship ‘carries’. There is total participation from both sides as:

- ➢ Flight cannot exist without passengers.
- ➢ Passengers cannot exist without flight.

7. PASSENGER: TICKET is of cardinality 1: N as 1 passenger can book N tickets. They are connected via relationship ‘books’. There is total participation of ticket and partial participation of passenger as:

- ➢ Ticket cannot exist without passengers.
- ➢ All passengers book ticket.

8. PASSENGER: TICKET is of cardinality 1: N as 1 passenger can cancel N tickets. They are connected via relationship ‘cancels’. There is total participation of ticket and partial participation of passenger as:

- ➢ Ticket cannot exist without passengers.
- ➢ All passengers cancel ticket

2.2 Description of Relational Schema Diagram

A **relational schema** for a database is an outline of how data is organized. It can be a graphic illustration or another kind of **chart** used by programmers to understand how each table is laid out, including the columns and the types of data they hold.

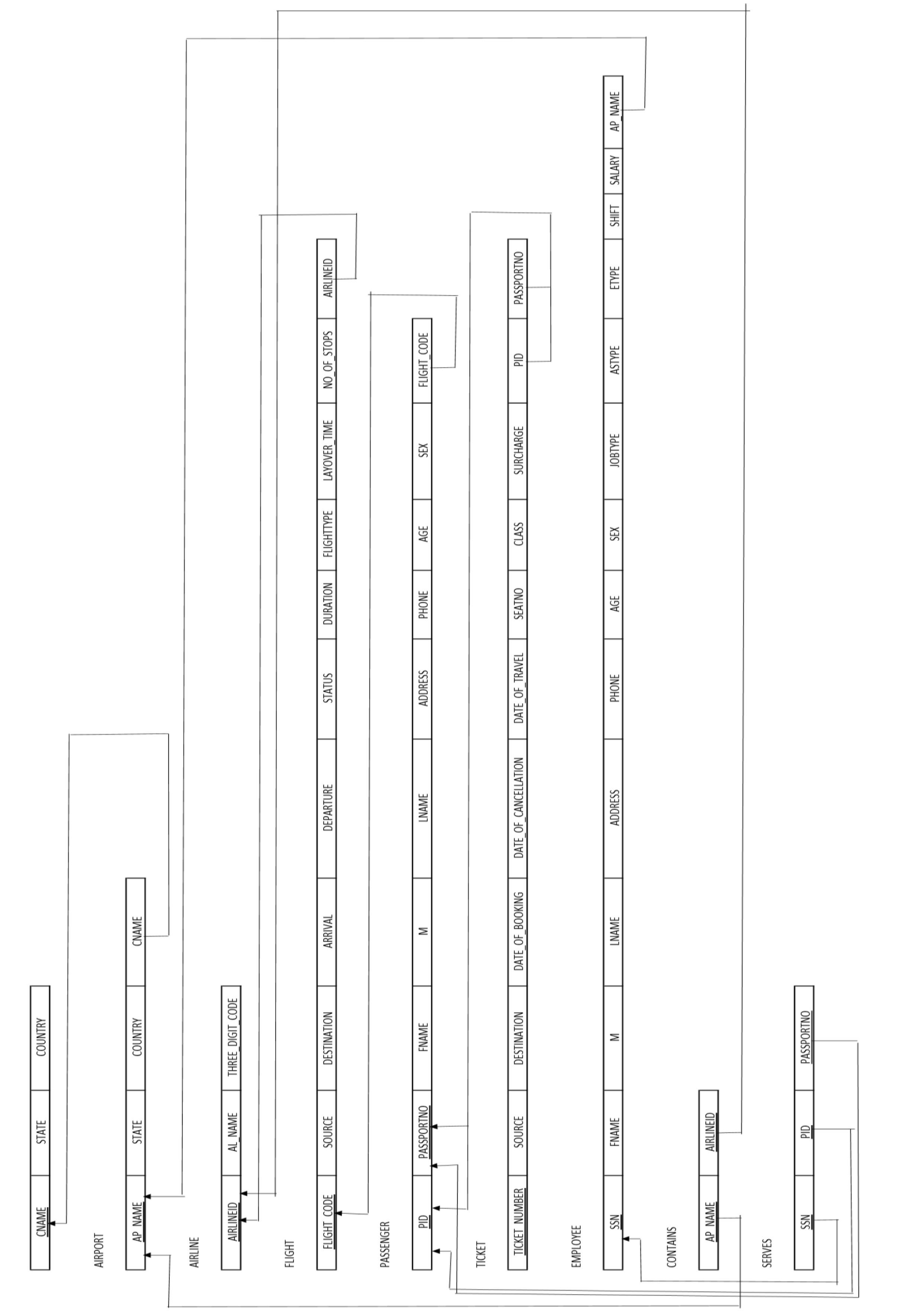


Fig 2.2: Relational Schema of Airport Management System

2.2.1 General Constraints

1. **NULL Constraints:** Attributes that are under NOT NULL constraints have to be filled compulsorily.

2. Entity Integrity Constraints: **This Constraints make sure that no primary key can have a null value assigned to it. The primary keys involved in the project include:**

- CNAME
- SSN
- AIRLINEID
- PID

3. Referential Integrity Constraints: A table in the back end of the project may have references pointing to an attributing another table. For example: Cname in the AIRPORT table refers to Cname in the CITY table. The various tables are also linked with multiple foreign keys which are all set to cascade any update or delete operation on the attribute in the main table. The various foreign key attributes in the main table are:

- AIRLINEID
- AP_NAME
- FLIGHT_CODE

2.2.2 Schema Description

1. CITY: This is the master table that consist of details like cname, state, country here multiple cities are taken into considerations

2. AIRPORT: It is the table of airports of a particular city. It store details like airport name, state, Country, cname.

3. AIRLINE: It is a table that consists of airlines that are operating on an airport. It consists of airline id, airline name, and three digit code.

4. FLIGHT: It is a table that consists of information regarding the flight of an airline. It includes fight code, source, destination, status, duration, arrival and departure

5. EMPLOYEE: It is a table that consists of employee details. It includes employee id, name, age, sex, designation, address, salary, and phone.

6. TICKET: It is a table that consists of ticket details of passengers. It includes ticket number, price, source, destination, class, seat number, date of travel.

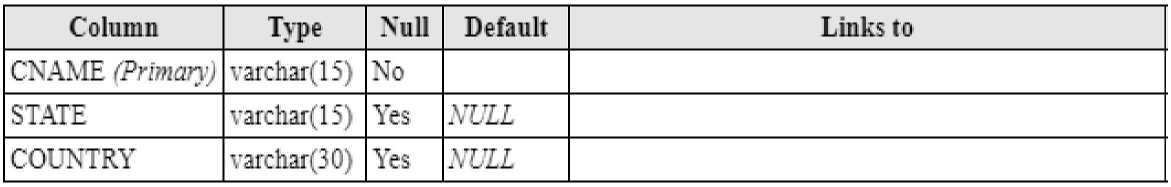
7. PASSENGER: It is a table that consists of passengers details. It includes passenger id, name, age, sex, address, passport number, and phone.

Chapter 3

SYSTEM DESIGN

3.1 Table Description

1. CITY

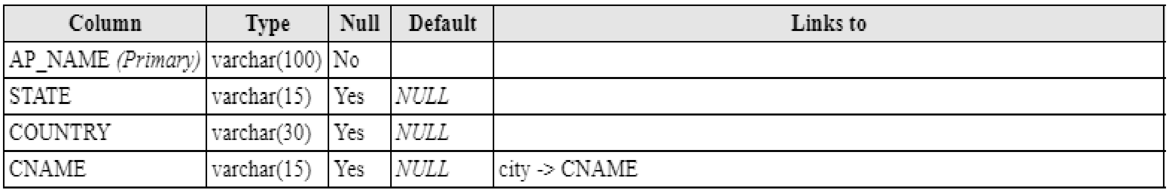


Column	Type	Null	Default	Links to
CNAME *(Primary)*	varchar(15)	No		
STATE	varchar(15)	Yes	*NULL*	
COUNTRY	varchar(30)	Yes	*NULL*	

Table 3.1- City Table

The CITY table as given in the above figure 3.1 holds the details of every city having airport. The primary key of this table is CNAME.

2. AIRPORT

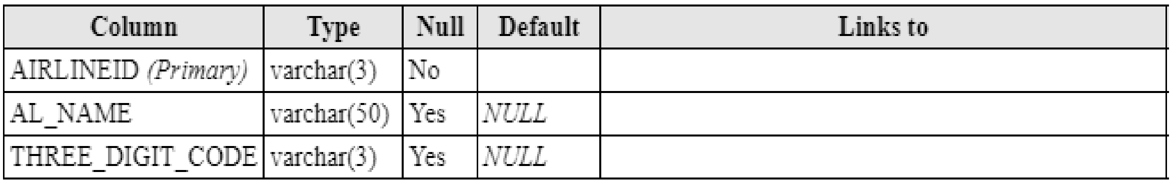


Column	Type	Null	Default	Links to
AP_NAME *(Primary)*	varchar(100)	No		
STATE	varchar(15)	Yes	*NULL*	
COUNTRY	varchar(30)	Yes	*NULL*	
CNAME	varchar(15)	Yes	*NULL*	city -> CNAME

Table 3.2- Airport Table

The AIRPORT table as given in the above figure 3.2 holds the details of every airport in a city. The primary key of this table is AP_NAME and foreign key is CNAME.

3. AIRLINE

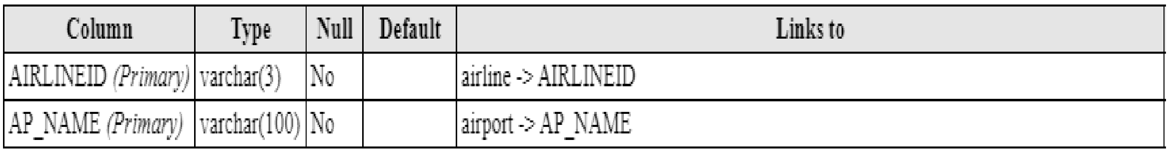


Column	Type	Null	Default	Links to
AIRLINEID *(Primary)*	varchar(3)	No		
AL_NAME	varchar(50)	Yes	*NULL*	
THREE_DIGIT_CODE	varchar(3)	Yes	*NULL*	

Table 3.3- Airline Table

The AIRLINE table as given in the above figure 3.3 holds the details of every airline operating in an airport. The primary key of this table is AIRLINEID.

4. CONTAINS

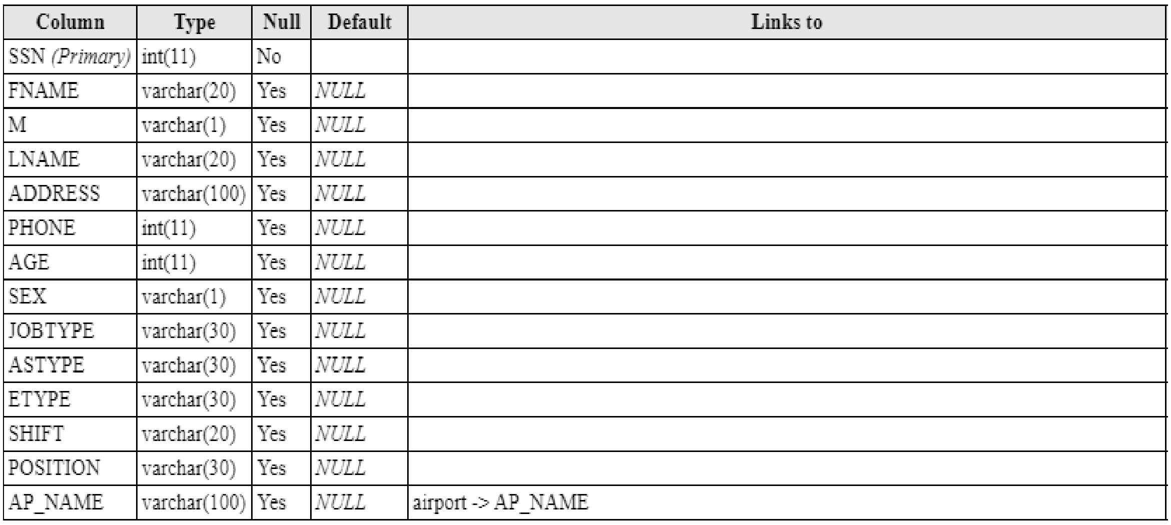


Column	Type	Null	Default	Links to
AIRLINEID *(Primary)*	varchar(3)	No		airline -> AIRLINEID
AP_NAME *(Primary)*	varchar(100)	No		airport -> AP_NAME

Table 3.4- Contains Table

The CONTAINS table as given in the above figure 3.4 holds the details of every airline present in every particular airport. The primary key of this table is AP_NAME and AIRLINEID and foreign key is AIRLINEID and AP_NAME.

5. EMPLOYEE1

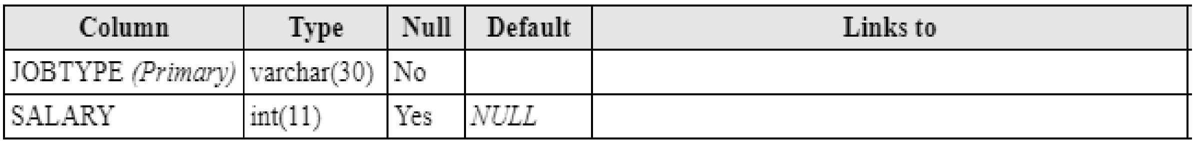


Column	Type	Null	Default	Links to
SSN *(Primary)*	int(11)	No		
FNAME	varchar(20)	Yes	*NULL*	
M	varchar(1)	Yes	*NULL*	
LNAME	varchar(20)	Yes	*NULL*	
ADDRESS	varchar(100)	Yes	*NULL*	
PHONE	int(11)	Yes	*NULL*	
AGE	int(11)	Yes	*NULL*	
SEX	varchar(1)	Yes	*NULL*	
JOBTYPE	varchar(30)	Yes	*NULL*	
ASTYPE	varchar(30)	Yes	*NULL*	
ETYPE	varchar(30)	Yes	*NULL*	
SHIFT	varchar(20)	Yes	*NULL*	
POSITION	varchar(30)	Yes	*NULL*	
AP_NAME	varchar(100)	Yes	*NULL*	airport -> AP_NAME

Table 3.5- Employee1 Table

The EMPLOYEE1 table as given in the above figure 3.5 holds the basic details of employee working in an airport. The primary key of this table is SSN and foreign key is AP_NAME.

6. EMPLOYEE2

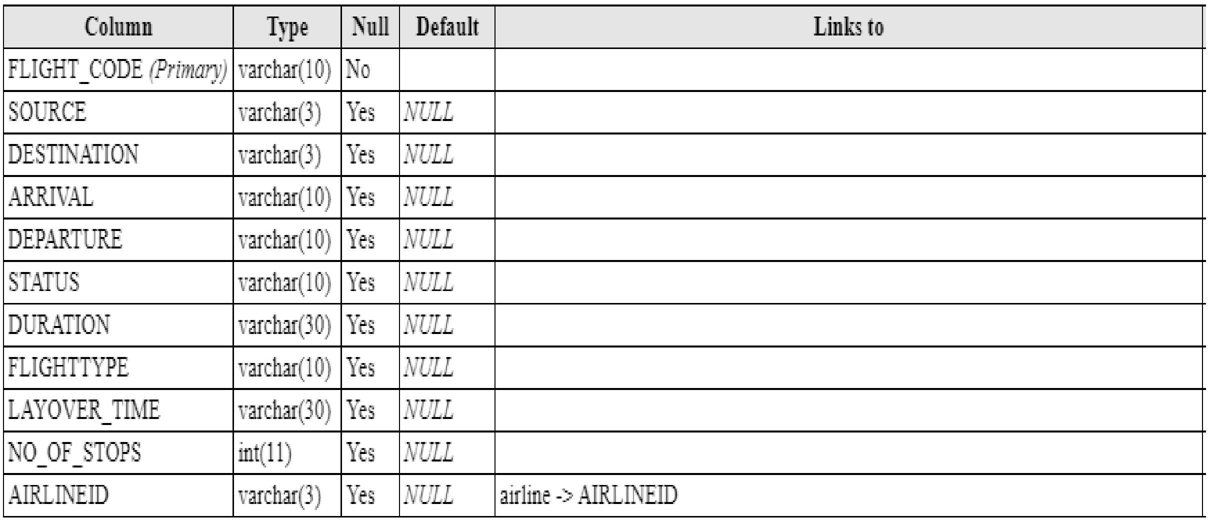


Column	Type	Null	Default	Links to
JOBTYPE *(Primary)*	varchar(30)	No		
SALARY	int(11)	Yes	*NULL*	

Table 3.6- Employee2 Table

The EMPLOYEE2 table as given in the above figure 3.6 holds the salary details of employee depending on their job type. The primary key of this table is JOBTYPE

7. FLIGHT

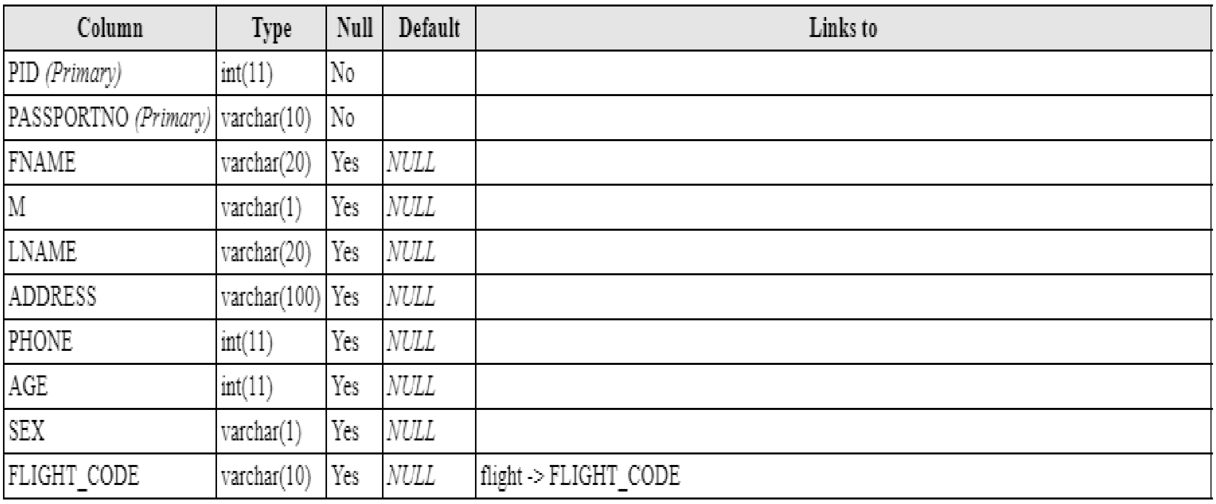


Column	Type	Null	Default	Links to
FLIGHT_CODE *(Primary)*	varchar(10)	No		
SOURCE	varchar(3)	Yes	*NULL*	
DESTINATION	varchar(3)	Yes	*NULL*	
ARRIVAL	varchar(10)	Yes	*NULL*	
DEPARTURE	varchar(10)	Yes	*NULL*	
STATUS	varchar(10)	Yes	*NULL*	
DURATION	varchar(30)	Yes	*NULL*	
FLIGHTTYPE	varchar(10)	Yes	*NULL*	
LAYOVER_TIME	varchar(30)	Yes	*NULL*	
NO_OF_STOPS	int(11)	Yes	*NULL*	
AIRLINEID	varchar(3)	Yes	*NULL*	airline -> AIRLINEID

Table 3.7- Flight Table

The FLIGHT table as given in the above figure 3.7 holds the basic details of flights of a particular airline. The primary key of this table is FLIGHT_CODE and foreign key is AIRLINEID.

8. PASSENGER

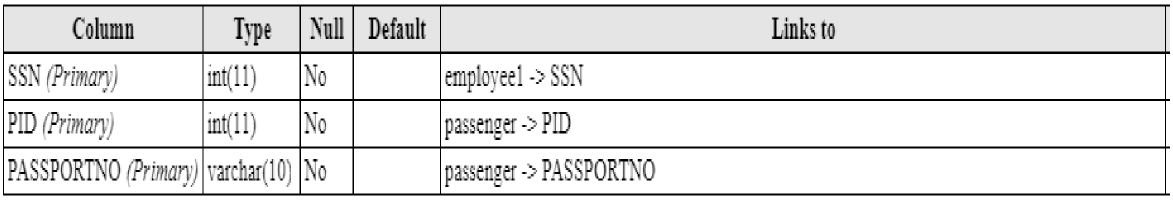


Column	Type	Null	Default	Links to
PID *(Primary)*	int(11)	No		
PASSPORTNO *(Primary)*	varchar(10)	No		
FNAME	varchar(20)	Yes	*NULL*	
M	varchar(1)	Yes	*NULL*	
LNAME	varchar(20)	Yes	*NULL*	
ADDRESS	varchar(100)	Yes	*NULL*	
PHONE	int(11)	Yes	*NULL*	
AGE	int(11)	Yes	*NULL*	
SEX	varchar(1)	Yes	*NULL*	
FLIGHT_CODE	varchar(10)	Yes	*NULL*	flight -> FLIGHT_CODE

Table 3.8- Passenger Table

The PASSENGER table as given in the above figure 3.8 holds the details of passenger travelling through the airline. The primary key of this table is PID and foreign key is FLIGHT_CODE.

9. SERVES

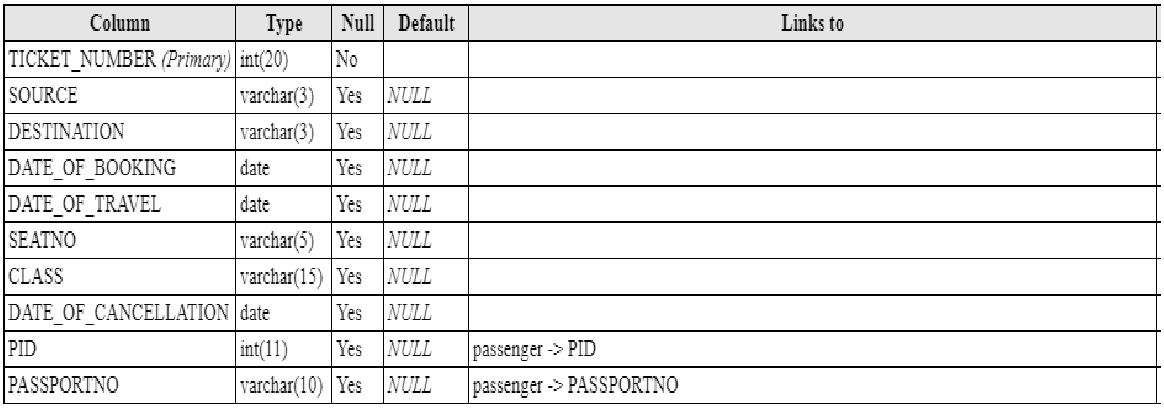


Column	Type	Null	Default	Links to
SSN *(Primary)*	int(11)	No		employee1 -> SSN
PID *(Primary)*	int(11)	No		passenger -> PID
PASSPORTNO *(Primary)*	varchar(10)	No		passenger -> PASSPORTNO

Table 3.9- Serves Table

The SERVES table as given in the above figure 3.9 holds the details of employees serving the passengers. The primary key of this table is SSN, PID and PASSPORTNO and foreign key is SSN, PID and PASSPORTNO.

10. TICKET1

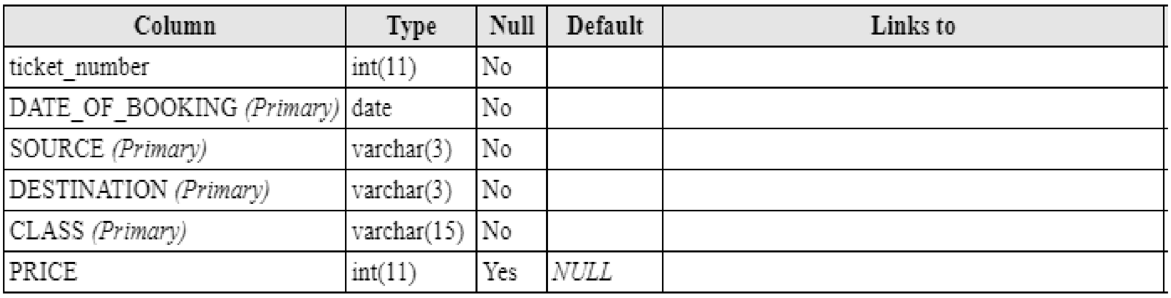


Column	Type	Null	Default	Links to
TICKET_NUMBER *(Primary)*	int(20)	No		
SOURCE	varchar(3)	Yes	*NULL*	
DESTINATION	varchar(3)	Yes	*NULL*	
DATE_OF_BOOKING	date	Yes	*NULL*	
DATE_OF_TRAVEL	date	Yes	*NULL*	
SEATNO	varchar(5)	Yes	*NULL*	
CLASS	varchar(15)	Yes	*NULL*	
DATE_OF_CANCELLATION	date	Yes	*NULL*	
PID	int(11)	Yes	*NULL*	passenger -> PID
PASSPORTNO	varchar(10)	Yes	*NULL*	passenger -> PASSPORTNO

Table 3.10- Ticket2 Table

The TICKET1 table as given in the above figure 3.10 holds the advance ticket details of passengers travelling. The primary key of this table is TICKET_NUMBER and foreign key is PID and PASSPORTNO.

11. TICKET2

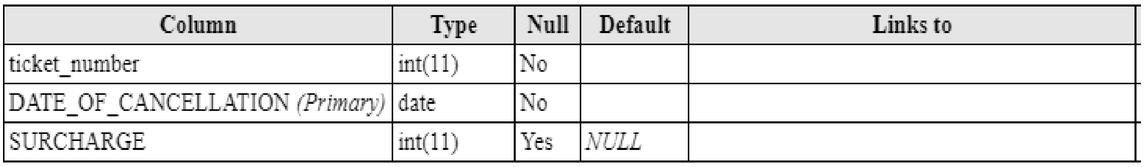


Column	Type	Null	Default	Links to
ticket_number	int(11)	No		
DATE_OF_BOOKING *(Primary)*	date	No		
SOURCE *(Primary)*	varchar(3)	No		
DESTINATION *(Primary)*	varchar(3)	No		
CLASS *(Primary)*	varchar(15)	No		
PRICE	int(11)	Yes	*NULL*	

Table 3.11- Ticket2 Table

The TICKET2 table as given in the above figure 3.11 holds the basic ticket details of passengers travelling. The primary key of this table is TICKET_NUMBER.

12. TICKET3

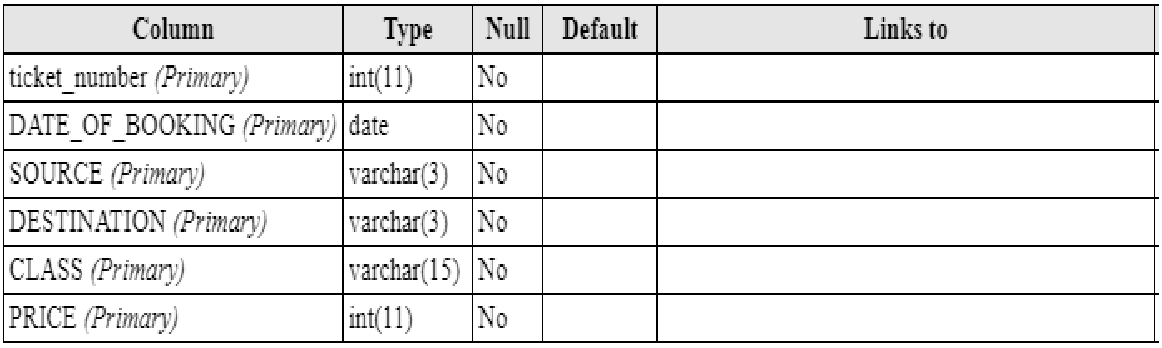


Column	Type	Null	Default	Links to
ticket_number	int(11)	No		
DATE_OF_CANCELLATION *(Primary)*	date	No		
SURCHARGE	int(11)	Yes	*NULL*	

Table 3.12- Ticket3 Table

The TICKET3 table as given in the above figure 3.12 holds the ticket cancellation details of passengers. The primary key of this table is TICKET_NUMBER.

13. TICKET_PRICE_HISTORY

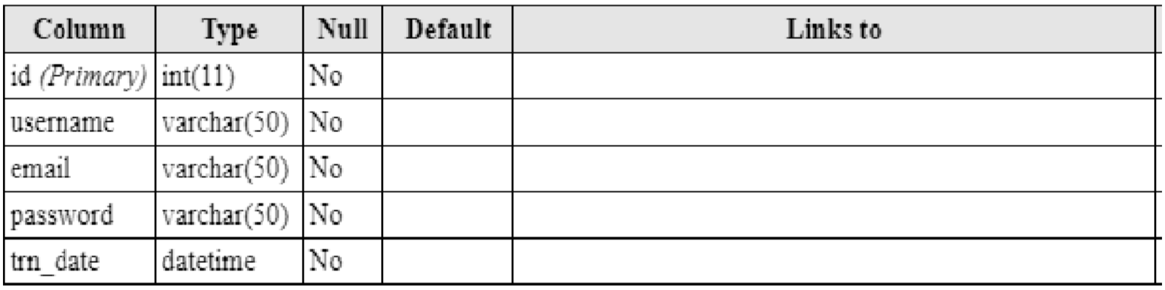


Column	Type	Null	Default	Links to
ticket_number *(Primary)*	int(11)	No		
DATE_OF_BOOKING *(Primary)*	date	No		
SOURCE *(Primary)*	varchar(3)	No		
DESTINATION *(Primary)*	varchar(3)	No		
CLASS *(Primary)*	varchar(15)	No		
PRICE *(Primary)*	int(11)	No		

Table 3.13- Ticket History Table

The TICKET_PRICE_HISTORY table as given in the above figure 3.13 holds the details of old ticket price. The primary key of this table is TICKET_NUMBER, DATE_OF_BOOKING, SOURCE, DESTINSTION, CLASS, and PRICE.

14. USERS

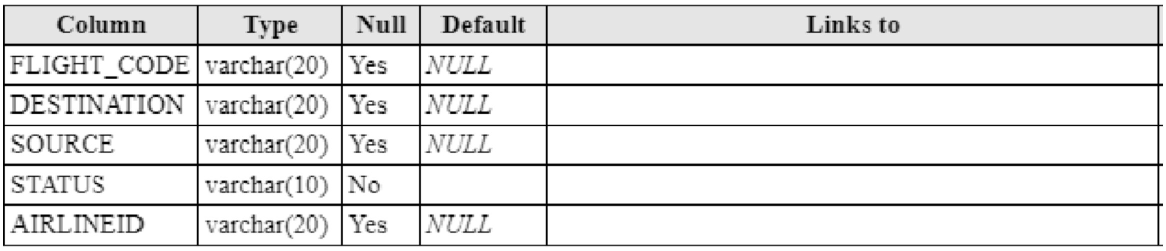


Column	Type	Null	Default	Links to
id *(Primary)*	int(11)	No		
username	varchar(50)	No		
email	varchar(50)	No		
password	varchar(50)	No		
trn_date	datetime	No		

Table 3.14- Users Table

The USERS table as given in the above figure 3.14 holds the ticket details of users. The primary key of this table is ID.

15. DELAYED_FLIGHTS



Column	Type	Null	Default	Links to
FLIGHT_CODE	varchar(20)	Yes	*NULL*	
DESTINATION	varchar(20)	Yes	*NULL*	
SOURCE	varchar(20)	Yes	*NULL*	
STATUS	varchar(10)	No		
AIRLINEID	varchar(20)	Yes	*NULL*	

TABLE 3.15- Delayed flights Table

The DELAYED_FLIGHTS table as given in the figure 3.15 holds the flight details which are delaying. The primary key of this table is FLIGHT_CODE and foreign key is AIRLINEID.

3.2 Normalization of Tables

Normalization is the process of reorganizing data in a database so that it meets two basic requirements:

- There is no redundancy of data (all data is stored in only one place),
- Data dependencies are logical (all related data items are stored together).

Normalization is important for many reasons, but chiefly because it allows databases to take up as little disk space as possible, resulting in increased performance.

For a table to be in the **First Normal Form**, it should follow the following rules:

- It should only have single (atomic) valued attributes/columns.
- Values stored in a column should be of the same domain.
- All the columns in a table should have unique names.

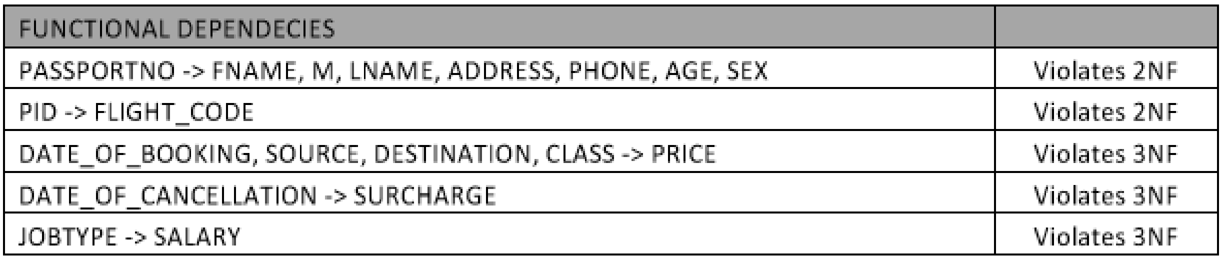
For a table to be in the **Second Normal Form**, it should follow the following rules:

- It should be in the First Normal form.
- And, it should not have Partial Dependency.

For a table to be in the **Third Normal Form**, it should follow the following rules:

- It is in the Second Normal form.
- And, it doesn't have Transitive Dependency.

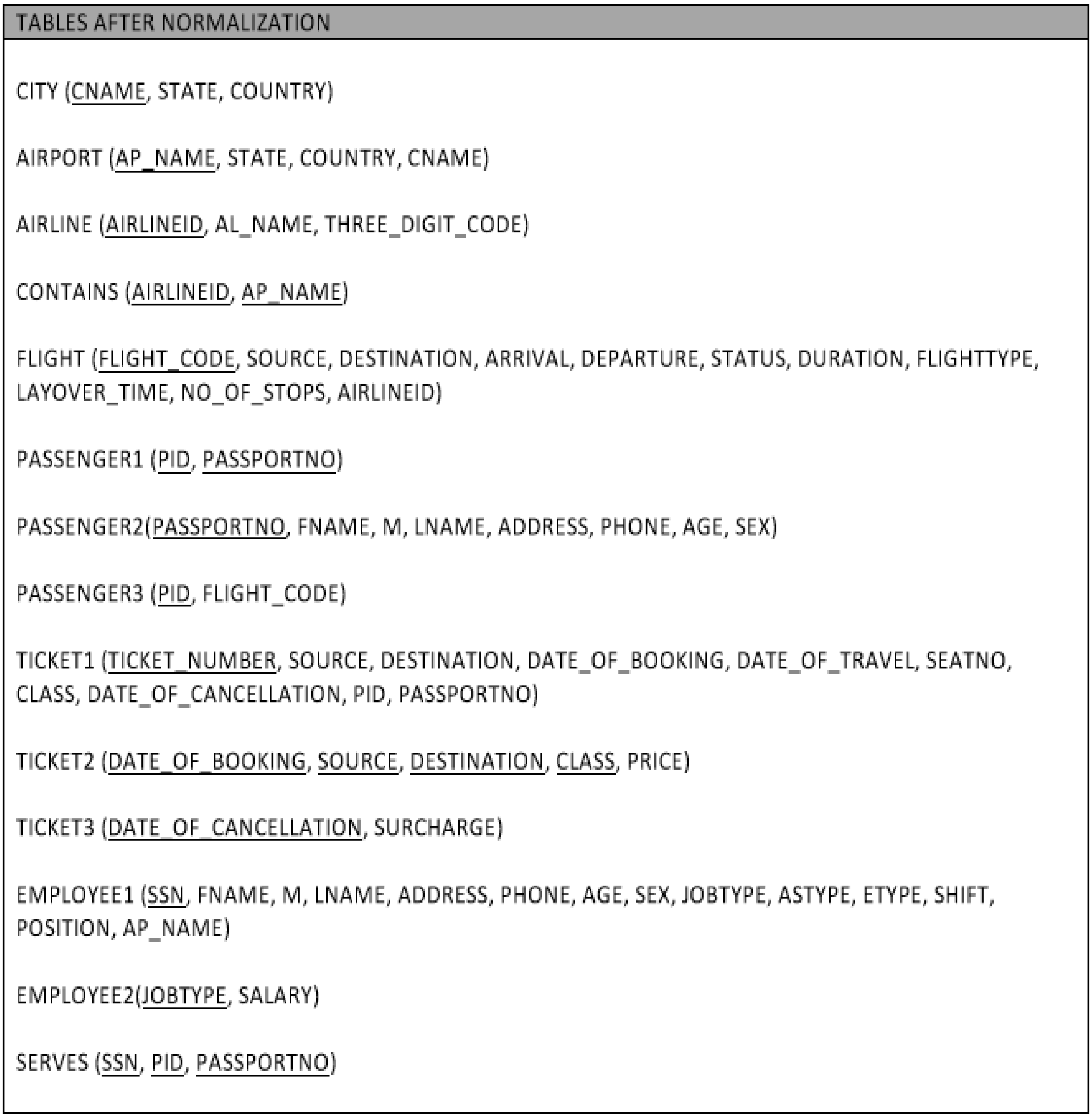
3.2.1 Normalization Rules on Database



FUNCTIONAL DEPENDECIES	
PASSPORTNO -> FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX	Violates 2NF
PID -> FLIGHT_CODE	Violates 2NF
DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS -> PRICE	Violates 3NF
DATE_OF_CANCELLATION -> SURCHARGE	Violates 3NF
JOBTYPE -> SALARY	Violates 3NF

TABLE 3.16 Normalization Rules

Normalizing tables into 3NF



TABLES AFTER NORMALIZATION
CITY (CNAME, STATE, COUNTRY)
AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE)
CONTAINS (AIRLINEID, AP_NAME)
FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
PASSENGER1 (PID, PASSPORTNO)
PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
PASSENGER3 (PID, FLIGHT_CODE)
TICKET1 (TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_TRAVEL, SEATNO, CLASS, DATE_OF_CANCELLATION, PID, PASSPORTNO)
TICKET2 (DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
TICKET3 (DATE_OF_CANCELLATION, SURCHARGE)
EMPLOYEE1 (SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE, ETYPE, SHIFT, POSITION, AP_NAME)
EMPLOYEE2(JOBTYPE, SALARY)
SERVES (SSN, PID, PASSPORTNO)

TABLE 3.17 Normalized Tables

3.3 Stored Procedures and Triggers

3.3.1 Triggers

A **database trigger** is procedural code that is automatically executed in response to certain events on a particular table or view in a database.

```
CREATE OR REPLACE TRIGGER PRICE_HISTORY
BEFORE UPDATE ON TICKET2
FOR EACH ROW
DECLARE
BEGIN
INSERT INTO TICKET_PRICE_HISTORY
VALUES(OLD.ticket_number,OLD.DATE_OF_BOOKING,OLD.SOURCE,
OLD.DESTINATION,
OLD.CLASS, OLD.PRICE)
END;
```

The trigger used in the database will perform its operation every time an update is carried out on the TICKET2 table. Before the update happens the trigger will insert the ticket number, date of booking, source, destination, class, price into the TICKET2 table.

3.3.2 Procedures

```
CREATE DEFINER= ‘root’@’localhost’ PROCEDURE ‘emploeedetails’
(IN ‘name’ VARCHAR (10)) NOT DETERMINISTIC
CONTAINS SQL
SQL SECURITY DEFINER
SELECT SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX
FROM employee1
WHERE fname=name
```

The procedure used in the database will retrieve the basic details of employees when their fname is passed in the parameter name created in procedure EMPLOYEEDETAILS().

Chapter 4

IMPLEMENTATION

4.1 Front End and Back End Used

4.1.1 Front-end: HTML and CSS

HTML is used as the front end tool to design web pages because:

- It is easy enough to write, use and understand.
- HTML also allows the use of templates, which makes designing a webpage easy.
- All browsers support HTML

CSS is used along with HTML to design webpages as it is relatively easy to learn and produces better and cleaner code than applying all those styles directly to your HTML:

- Easy to maintain and update.
- Greater consistency in design and more formatting options.
- Greater accessibility.

4.1.2 Back-end: PHP and MySQL

MySQL is free to use, open source database that facilitates effective management of database by connecting them to the software. It is stable, reliable and powerful solution with advance features like the following:

- MySQL is a globally renowned for being the most secure and reliable database management system used in popular web applications.
- MySQL features are distinct storage-engine framework that facilitates system administrator to configure the MySQL database for a flawless performance.
- MySQL tops the list of robust transactional database engines available on the market with features like complete atomic, consistent, isolated, durable transaction support.

PHP is server side web programming language that is widely used for web development. MySQL is used with PHP as the Backend tool as:

- PHP also has powerful output buffering that further increases over the output flow.
- PHP is dynamic. PHP works in combination of HTML to diplay dynamic element on the page
- PHP can be used with a large number of relational database management systems, runs on all of the most popular webservers and is available for many different operating systems.

4.2 Discussion of Code Segment

```
<? php
// Enter your Host, username, password, database below.
// I left password empty because i do not set password on localhost.
$con = mysqli_connect("localhost","root","","register");
// Check connection
if (mysqli_connect_errno())
  {
    echo "Failed to connect to MySQL: " . mysqli_connect_error();
  }
?>
```

The above code establishes connection with the database by taking into account the username and password for the MySQL account and also the name of the database it is trying to establish $conn is the variable use to establish the connection. The function used is mysqli_connect(host, username, password, database).

4.3 Application of Project Work

- This project can be implemented by Airports to provide easy access of data by users.
- It provides easy cancellation services.
- It provides updated information about flights and their status.
- It gives privileges to the employees for easy updation.

- The computerize maintenance of flight records can help completely redicate update, insertion and deletion anomalies in the database.

4.4 Discussions of Results

4.4.1 Snapshots-

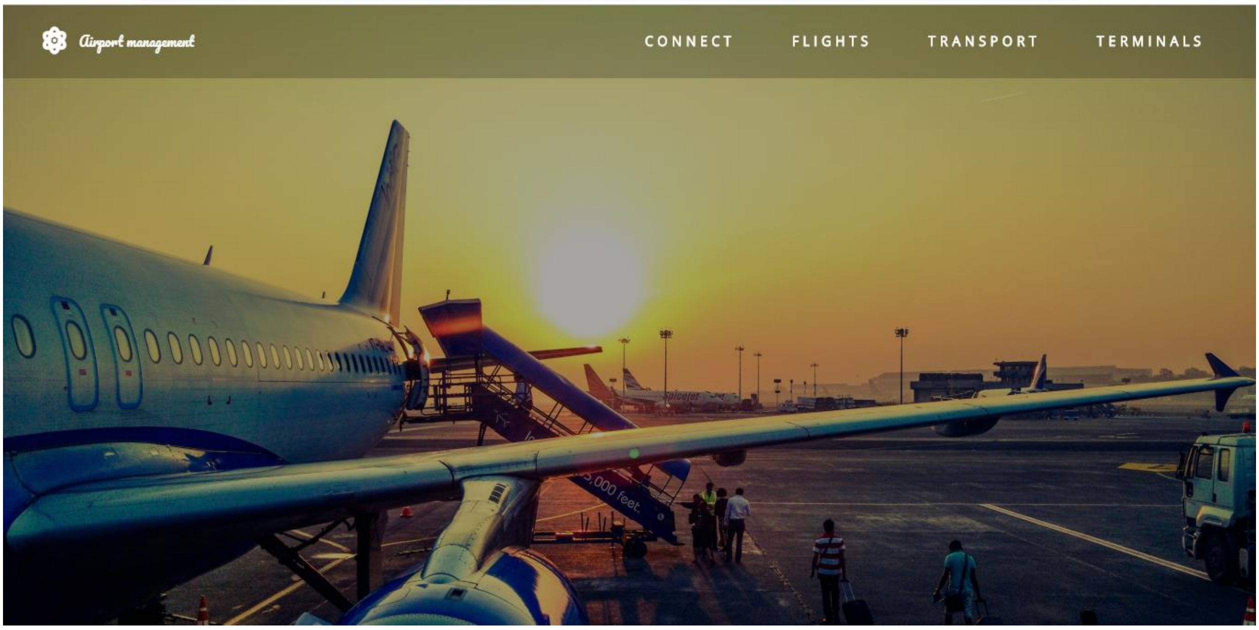


Figure 4.1: Desktop View

Figure 4.1 shows the desktop page of the Airport management System

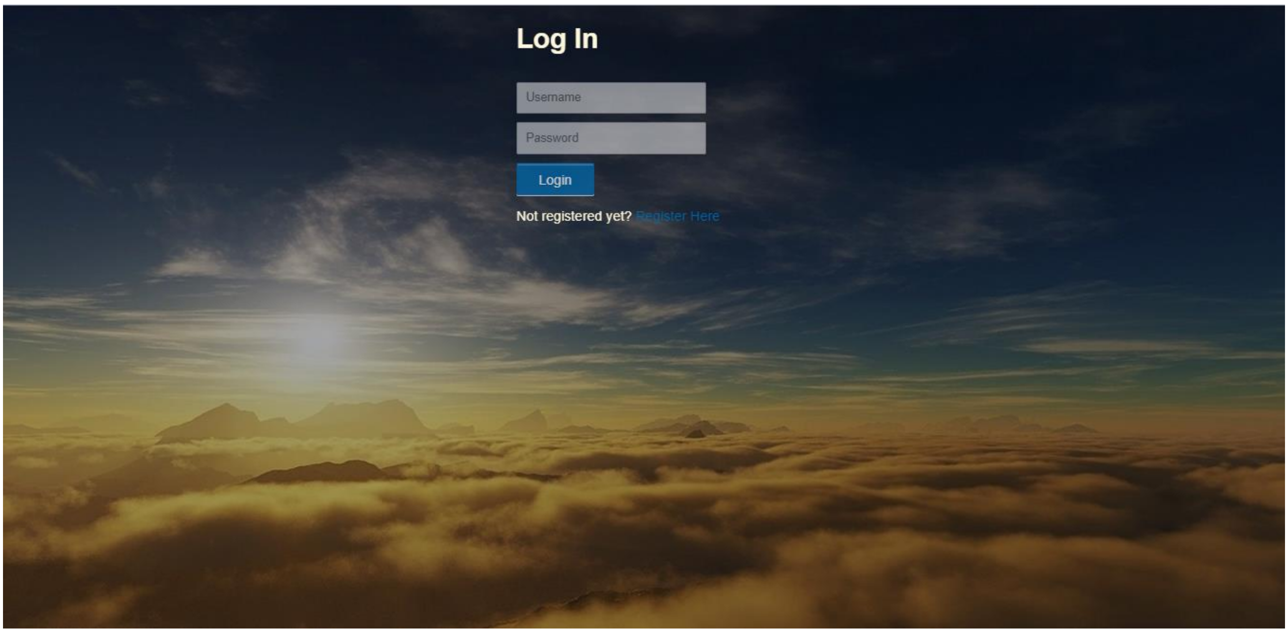
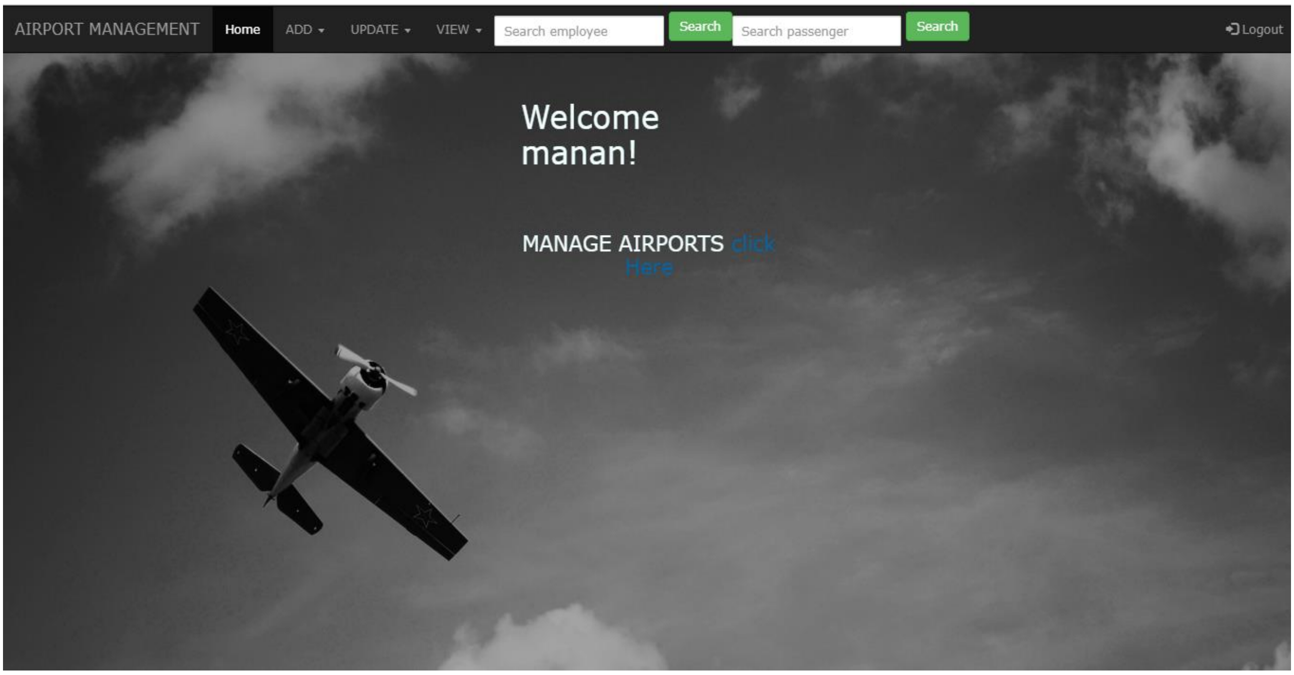


Figure 4.2: Login Form

Figure 4.1 shows the login form of the Airport Management System

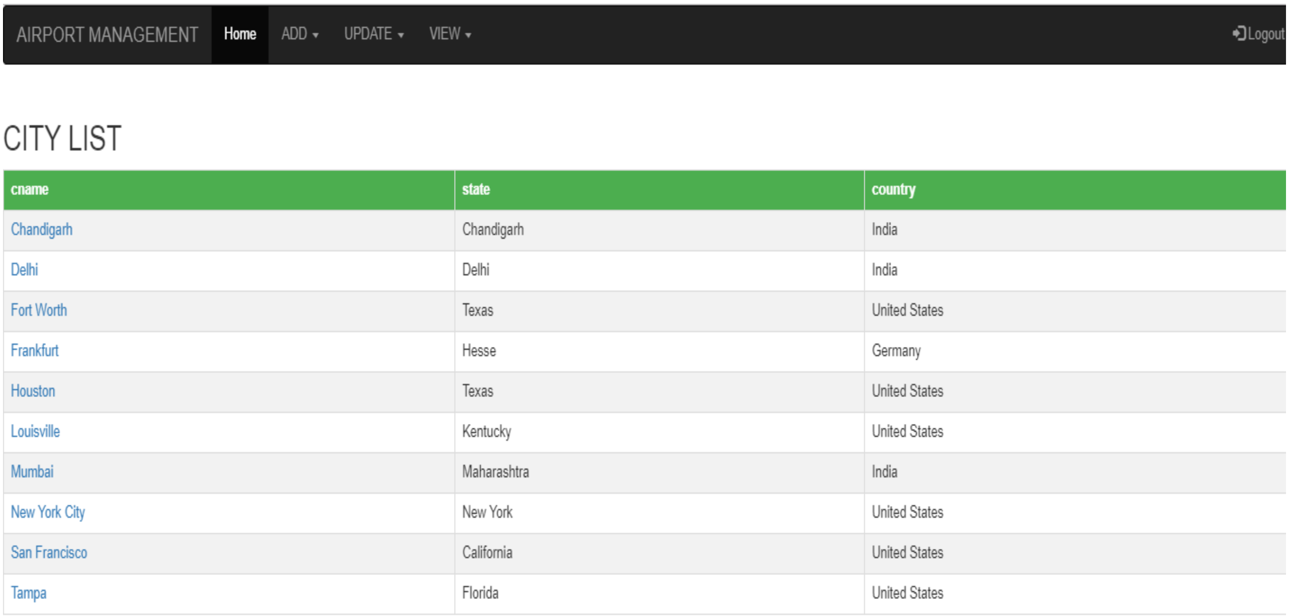


Welcome manan!

MANAGE AIRPORTS click Here

Figure 4.3 Welcome Page

Figure 4.3 shows the welcome page for the user who is successfully logged in.

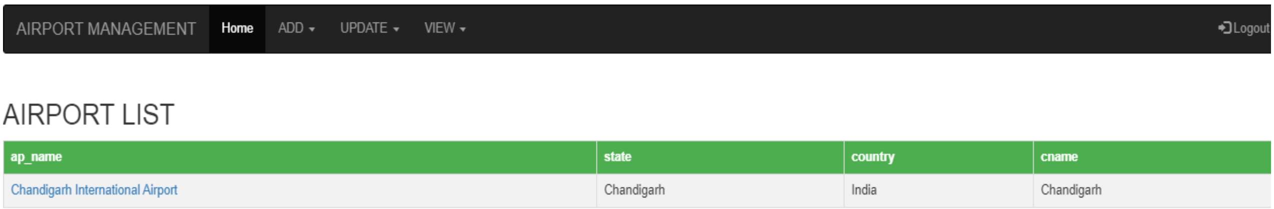


CITY LIST

cname	state	country
Chandigarh	Chandigarh	India
Delhi	Delhi	India
Fort Worth	Texas	United States
Frankfurt	Hesse	Germany
Houston	Texas	United States
Louisville	Kentucky	United States
Mumbai	Maharashtra	India
New York City	New York	United States
San Francisco	California	United States
Tampa	Florida	United States

Figure 4.4 City List

Figure 4.4 shows the city list in which cities of particular state of a country which are having airport are displayed.

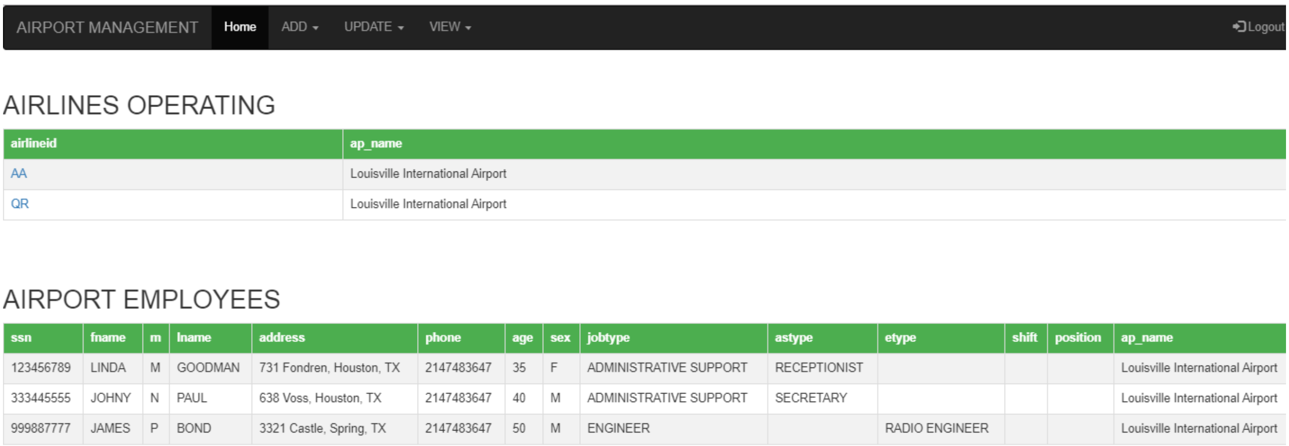


AIRPORT LIST

ap_name	state	country	cname
Chandigarh International Airport	Chandigarh	India	Chandigarh

Figure 4.5 Airport List

Figure 4.5 shows the names of the airport present in the city.



AIRLINES OPERATING

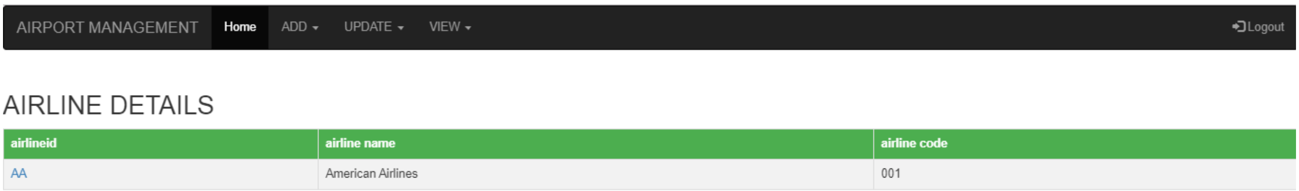
airlineid	ap_name
AA	Louisville International Airport
QR	Louisville International Airport

AIRPORT EMPLOYEES

ssn	fname	m	lname	address	phone	age	sex	jobtype	astype	etype	shift	position	ap_name
123456789	LINDA	M	GOODMAN	731 Fondren, Houston, TX	2147483647	35	F	ADMINISTRATIVE SUPPORT	RECEPTIONIST				Louisville International Airport
333445555	JOHNY	N	PAUL	638 Voss, Houston, TX	2147483647	40	M	ADMINISTRATIVE SUPPORT	SECRETARY				Louisville International Airport
999887777	JAMES	P	BOND	3321 Castle, Spring, TX	2147483647	50	M	ENGINEER		RADIO ENGINEER			Louisville International Airport

Figure 4.6 Employee and Airline List

Figure 4.6 shows the number of airlines operating on the particular airport and employee working on that airport

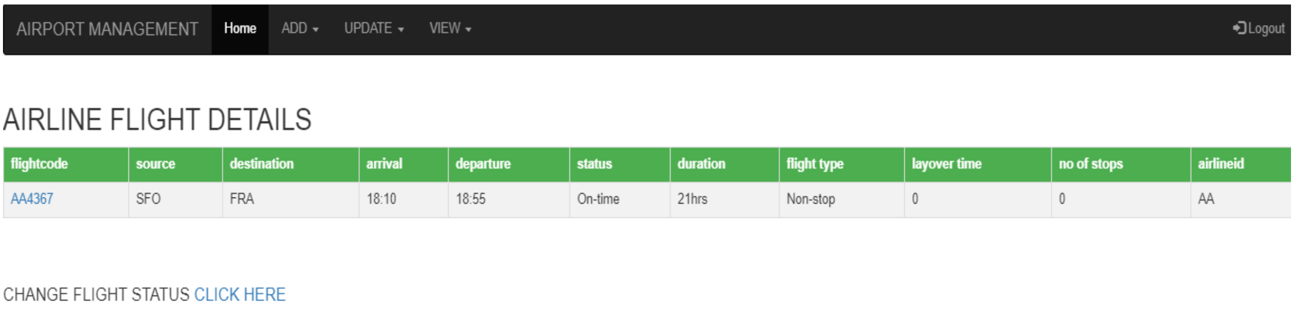


AIRLINE DETAILS

airlineid	airline name	airline code
AA	American Airlines	001

Figure 4.7 Airline Details

Figure 4.7 shows the airline details such as airline id, airline name and followed by airline code.



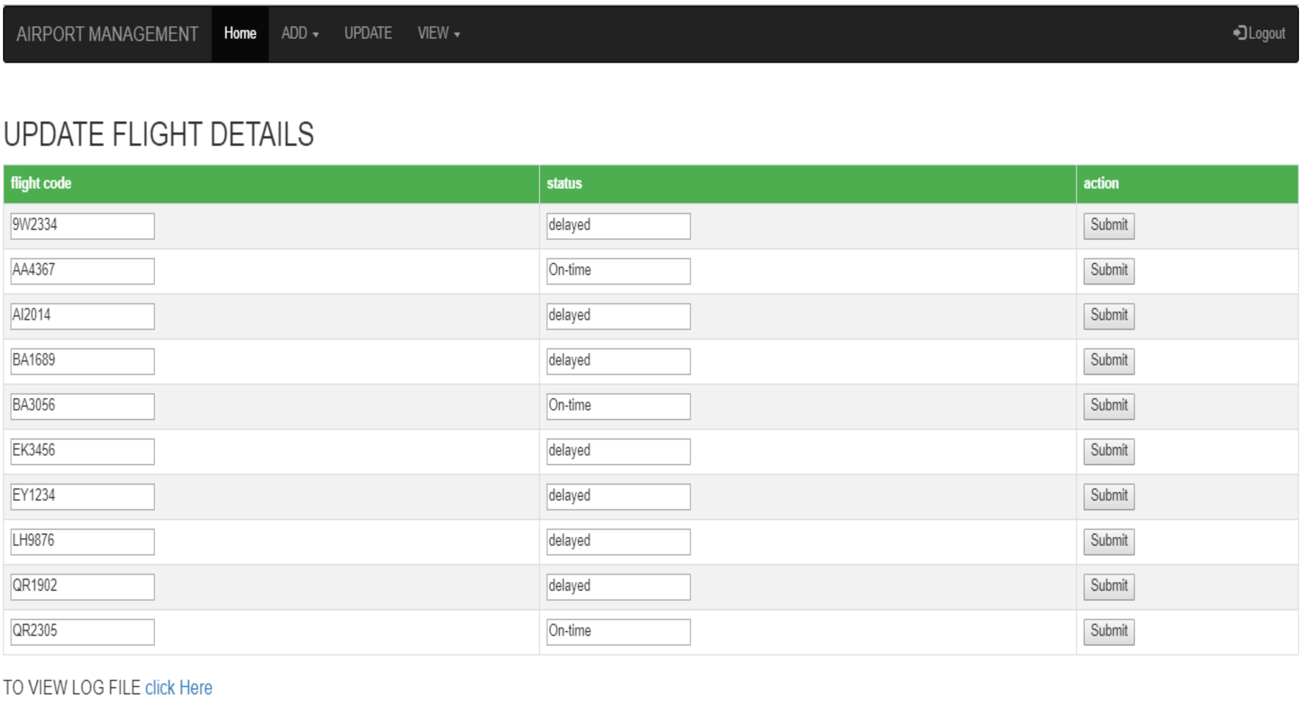
AIRLINE FLIGHT DETAILS

flightcode	source	destination	arrival	departure	status	duration	flight type	layover time	no of stops	airlineid
AA4367	SFO	FRA	18:10	18:55	On-time	21hrs	Non-stop	0	0	AA

CHANGE FLIGHT STATUS CLICK HERE

Figure 4.8 Airline Flight Details

Figure 4.8 shows the details of flights of airline operating and their source, destination, arrival and departure time and there status. We can change the status of flight by clicking on ‘CLICK HERE’.



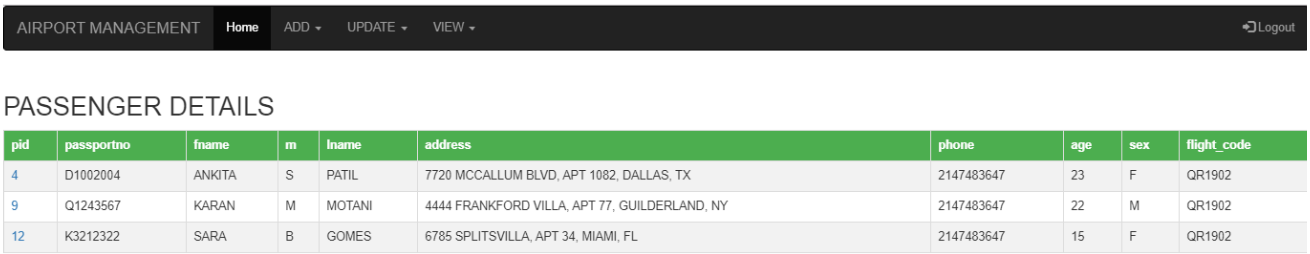
UPDATE FLIGHT DETAILS

flight code	status	action
9W2334	delayed	Submit
AA4367	On-time	Submit
AI2014	delayed	Submit
BA1689	delayed	Submit
BA3056	On-time	Submit
EK3456	delayed	Submit
EY1234	delayed	Submit
LH9876	delayed	Submit
QR1902	delayed	Submit
QR2305	On-time	Submit

TO VIEW LOG FILE click Here

Figure 4.9 Update Status

Figure 4.9 shows the flight code and their respective status, we can edit the status field and by clicking the submit button we can update the status.

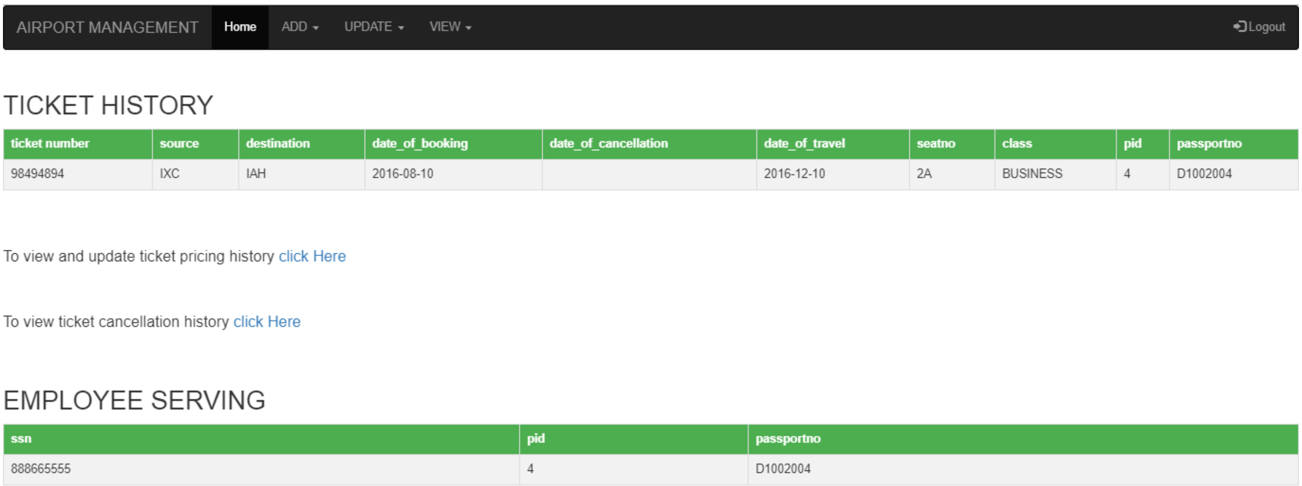


PASSENGER DETAILS

pid	passportno	fname	m	lname	address	phone	age	sex	flight_code
4	D1002004	ANKITA	S	PATIL	7720 MCCALLUM BLVD, APT 1082, DALLAS, TX	2147483647	23	F	QR1902
9	Q1243567	KARAN	M	MOTANI	4444 FRANKFORD VILLA, APT 77, GUILDERLAND, NY	2147483647	22	M	QR1902
12	K3212322	SARA	B	GOMES	6785 SPLITSVILLA, APT 34, MIAMI, FL	2147483647	15	F	QR1902

Figure 4.10 Passenger Details

Figure 4.10 shows the details of the passengers travelling through an airline with their flight code and basic details like address, name, pid, passport no.



TICKET HISTORY

ticket number	source	destination	date_of_booking	date_of_cancellation	date_of_travel	seatno	class	pid	passportno
98494894	IXC	IAH	2016-08-10		2016-12-10	2A	BUSINESS	4	D1002004

To view and update ticket pricing history click Here

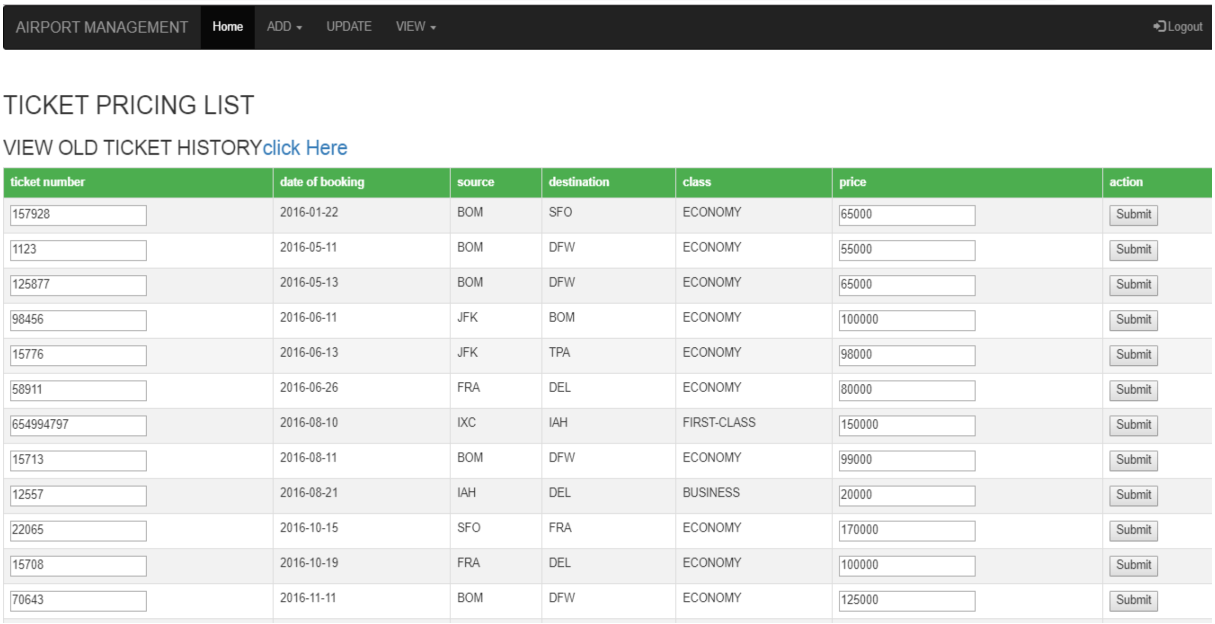
To view ticket cancellation history click Here

EMPLOYEE SERVING

ssn	pid	passportno
888665555	4	D1002004

Figure 4.11 Ticket Details

Figure 4.11 shows the ticket details of passenger having details like date of booking, ticket number, seat no, and class and also the employee serving that passenger.



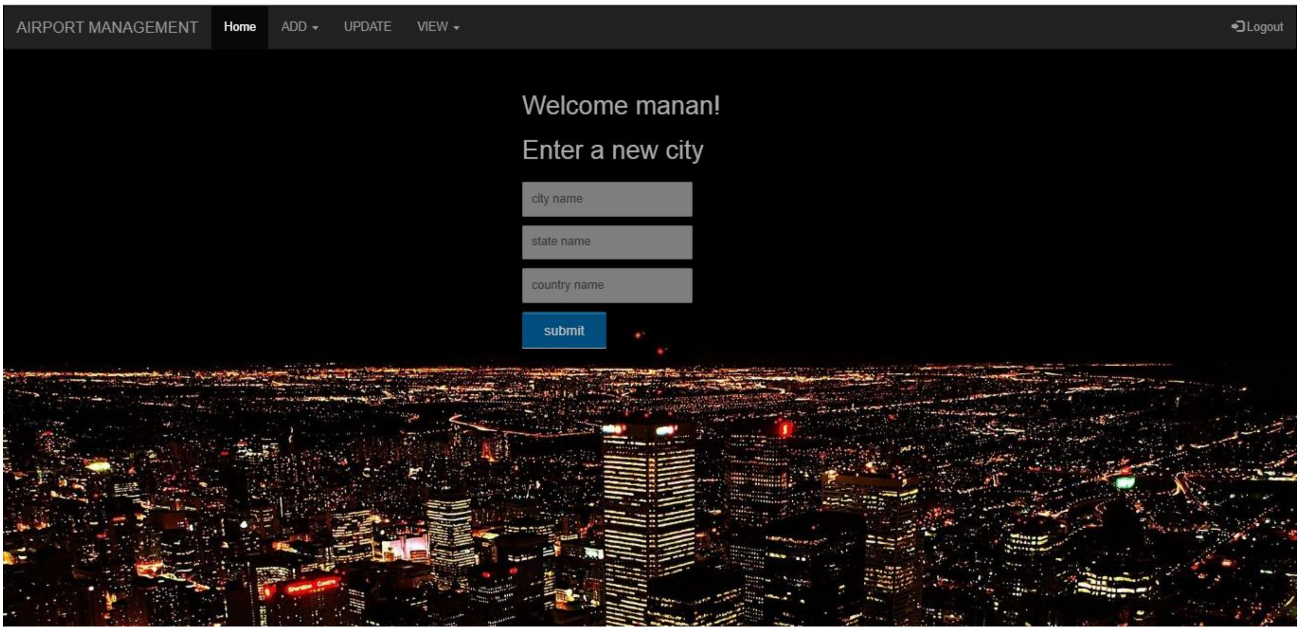
TICKET PRICING LIST

VIEW OLD TICKET HISTORYclick Here

ticket number	date of booking	source	destination	class	price	action
157928	2016-01-22	BOM	SFO	ECONOMY	65000	Submit
1123	2016-05-11	BOM	DFW	ECONOMY	55000	Submit
125877	2016-05-13	BOM	DFW	ECONOMY	65000	Submit
98456	2016-06-11	JFK	BOM	ECONOMY	100000	Submit
15776	2016-06-13	JFK	TPA	ECONOMY	98000	Submit
58911	2016-06-26	FRA	DEL	ECONOMY	80000	Submit
654994797	2016-08-10	IXC	IAH	FIRST-CLASS	150000	Submit
15713	2016-08-11	BOM	DFW	ECONOMY	99000	Submit
12557	2016-08-21	IAH	DEL	BUSINESS	20000	Submit
22065	2016-10-15	SFO	FRA	ECONOMY	170000	Submit
15708	2016-10-19	FRA	DEL	ECONOMY	100000	Submit
70643	2016-11-11	BOM	DFW	ECONOMY	125000	Submit

Figure 4.12 Ticket Price Details

Figure 4.12 shows the ticket price details of the tickets booked by the passenger and we can also update the pricing details by clicking on ‘SUBMIT’ button.



Welcome manan!

Enter a new city

city name

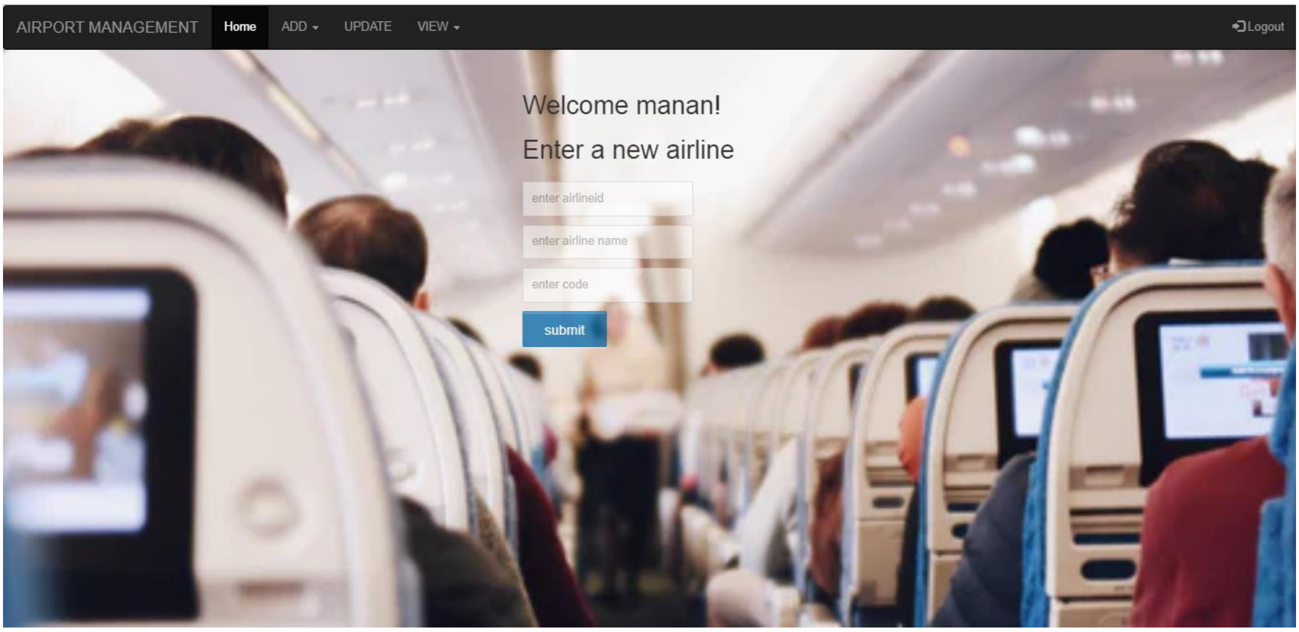
state name

country name

submit

Figure 4.13 Add City

Figure 4.13 shows the add city form in which we can add a new city.

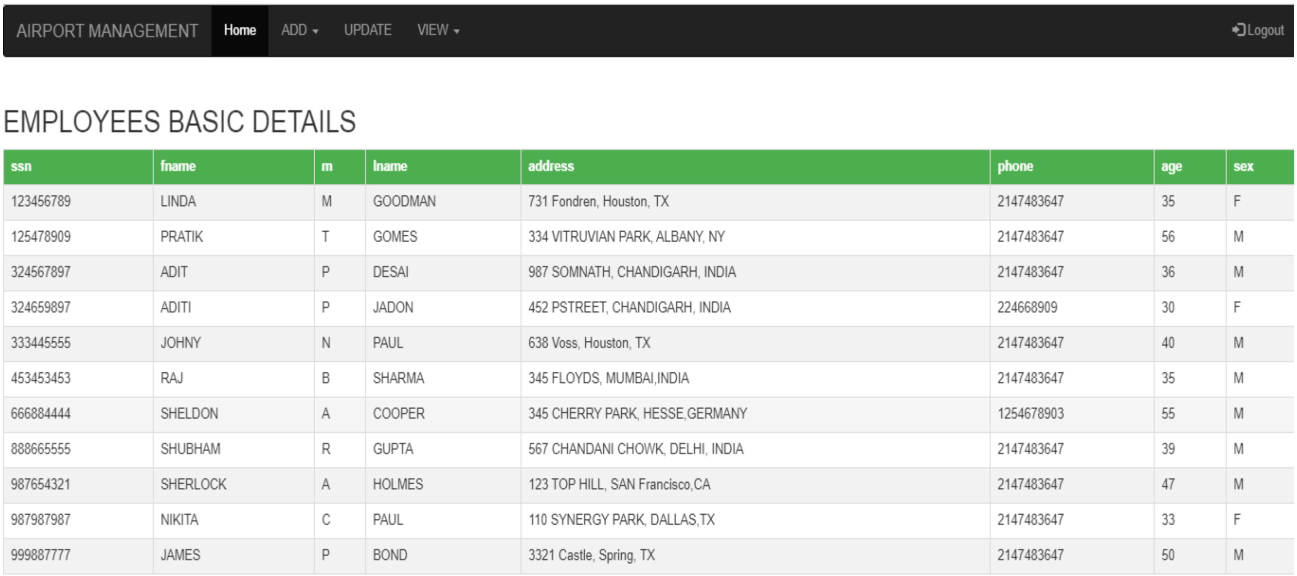


Welcome manan!

Enter a new airline

Figure 4.14 Add Airline

Figure 4.14 shows the add airline form in which we can add a new airline.



EMPLOYEES BASIC DETAILS

ssn	fname	m	lname	address	phone	age	sex
123456789	LINDA	M	GOODMAN	731 Fondren, Houston, TX	2147483647	35	F
125478909	PRATIK	T	GOMES	334 VITRUVIAN PARK, ALBANY, NY	2147483647	56	M
324567897	ADIT	P	DESAI	987 SOMNATH, CHANDIGARH, INDIA	2147483647	36	M
324659897	ADITI	P	JADON	452 PSTREET, CHANDIGARH, INDIA	224668909	30	F
333445555	JOHNY	N	PAUL	638 Voss, Houston, TX	2147483647	40	M
453453453	RAJ	B	SHARMA	345 FLOYDS, MUMBAI,INDIA	2147483647	35	M
666884444	SHELDON	A	COOPER	345 CHERRY PARK, HESSE,GERMANY	1254678903	55	M
888665555	SHUBHAM	R	GUPTA	567 CHANDANI CHOWK, DELHI, INDIA	2147483647	39	M
987654321	SHERLOCK	A	HOLMES	123 TOP HILL, SAN Francisco,CA	2147483647	47	M
987987987	NIKITA	C	PAUL	110 SYNERGY PARK, DALLAS,TX	2147483647	33	F
999887777	JAMES	P	BOND	3321 Castle, Spring, TX	2147483647	50	M

Figure 4.15 Employee Details

Figure 4.15 shows the basic details of all the employees working at different airports.

CHAPTER 5

CONCLUSION AND FUTURE ENHANCEMENT

Conclusion

Airport management is very important to manage flights of different airlines operation on various airports. It has been setup to give flexibility to employees for updation and insertion. It also focuses on hassle-free travel of passengers. The primary goal is to add or delete flights and to update their statuses. The system is tested and retested with varying constraints to ensure its effectiveness and provide error free functionality to the end users. The project ensures that the users are provided with a user friendly GUI and hassle free experience.

Future Enhancement

- In future an improved GUI is the main motive which improves the interaction of users with the database.
- To be able to provide ability to passengers to view, update and cancel tickets.
- Flexibility will be added to the process of rescheduling of flights in the case of emergency delay.

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