A Project Report
On

Airport Management System(Airline – X)

Course: Database Management System(UNC502)

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Abstract

The "Airline Management System" is a comprehensive database management project designed to streamline and optimize airport operations, airline services, and passenger interactions. The system encompasses the management of commercial service airports worldwide, airline offices in major cities, flight services, passenger details, and airport employees.

Key features of the system include the unique identification of airlines and flights through designated codes, detailed information on airports and their respective IATA codes, flight schedules, durations, classes, and passenger booking details. It supports both non-stop and connecting flights, facilitating seamless passenger transit.

Passenger management is a central aspect of the system, with each passenger uniquely identified by ID and passport number. The system handles ticket booking, cancellation, and fare calculation based on airline, source, destination, journey date, and class preferences.

Airport employee management is also integrated, covering roles such as administrative support, engineering, traffic control, and airport authority. Employees are identified by SSN and managed with details including name, address, age, and salary.

The system is developed using MySQL for the backend database and HTML, CSS, and JavaScript for the frontend interface, providing a user-friendly experience for both airport staff and passengers. Through effective data management and seamless user interaction, the Airline Management System aims to enhance efficiency, accuracy, and convenience in airport operations and passenger services.

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Introduction

Requirements of the system:

- The system is based on airport management. 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 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 may have many airline offices.
- Every airline is identified uniquely by an airline code. Airline code is a two-letter airline designator. Airline also has three-digit code which is printed on an air ticket.

Airline Detail

Airline Name	IATA Airline code/IATA Designator	3-DIGIT CODE
American Airlines	AA	1
Air India Limited	AI	98
Lufthansa	LH	220
British Airways	BA	125
Qatar Airways	QR	157
Jet Airways	9W	589
Emirates	EK	176
Etihad Airways	EY	607

- 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.
- Flight takes off from one airport and lands on another airport. Therefore, most important aspect of a flight is, its source and destination. Source and destination airports are identified using an airport's IATA code.

- International Air Transport Airport code is simply a location identifier. IATA code is a three-letter code designating many airports across the world. These codes are prominently displayed on baggage tags and printed on an air ticket.

Airport Detail

Airport Name	IATA Airport code
Louisville International Airport	SDF
Chandigarh International Airport	IXC
Dallas/Fort Worth International Airport	DFW
Indira Gandhi International Airport	DEL
Chhatrapati Shivaji International Airport	BOM
San Francisco International Airport	SFO
Frankfurt Airport	FRA
George Bush Intercontinental Airport	IAH
John F. Kennedy International Airport	JFK
Tampa International Airport	TPA

- Flight has an arrival time, departure time, duration. Flight has three types of classes-business, economy and first class.
- Flight can be of two types such non-stop flight and a connecting flight.
- Connecting flight is a flight which takes intermediate stop and changes a flight possibly change of an airline. But we are assuming that connecting flight does not change a flight that is at each stop, after layover time gets over, passengers aboard the same flight.
- Flight serves passengers. Flight carries passengers from source to destination.
- A passenger is uniquely identified by a passenger id and a passport number. Every passenger has details such as name, address, age, sex, phone.
- For a passenger to travel by a flight, he needs a ticket. A ticket or air ticket is used to confirm that an individual has reserved a seat on a flight. With the ticket, a passenger is allowed to board the flight.
- Hence, depending on airline, source, destination, journey date and most importantly class, which a passenger chooses fare or price of an air ticket is determined.
- A passenger can book one or multiple tickets. The day on which he books an air ticket is a booking date. Similarly, a passenger can cancel one or multiple tickets. The day on which he cancels an air ticket is cancellation date and there will be a surcharge that a passenger must pay after cancelling a ticket.
- Every airport has employees working for it.
- Every employee is identified by SSN. Every employee has an information such name, address, phone, age, sex, salary.
- Employees in the role of administrative support, engineer, traffic controller and airport authority work at the airport.
- Every airline needs administrative support staff to keep the office running smoothly. The different positions include secretaries, data entry workers, receptionists, communications and PR specialists and human resources department.

- There are different types of engineers who work specifically with information technologies, electronics, flight structure, environmental regulations, etc.
- Traffic Monitor works in different shifts such as day or night.
- There are different positions that airport authorities might work at such as manager, attendee, assistant, pilot, etc.
- Employees working in the role of administrative support may help passengers with various tasks such as booking a flight ticket, solving passenger's questions, etc.

Entities

CITY

CNAME	STATE	COUNTRY

AIPORT

AP_NAME	STATE	COUNTRY

AIRLINE

AIRLINEID	AL_NAME	THREE_DIGIT_CODE

FLIGHT

FLIGHT_CODE	SOURCE	DESTINATION	ARRIVAL	DEPARTURE	STATUS	DURATION	FLIGHTTYP
LAYOVER_TIME	NO_OF_STOPS						

PASSENGER

PID	PASSPORTNO	FNAME	M	LNAME	ADDRESS	PHONE	AGE	SEX

TICKET

TICKET_NUMBER	SOURCE	DESTINATION	DATE_OF_TRAVEL	SEATNO	CLASS	PRICE

EMPLOYEE

SSN	FNAME	M	LNAME	ADDRESS	PHONE	AGE	SEX	JOBTYPE	SALARY

Mapping ER diagram to relational schema

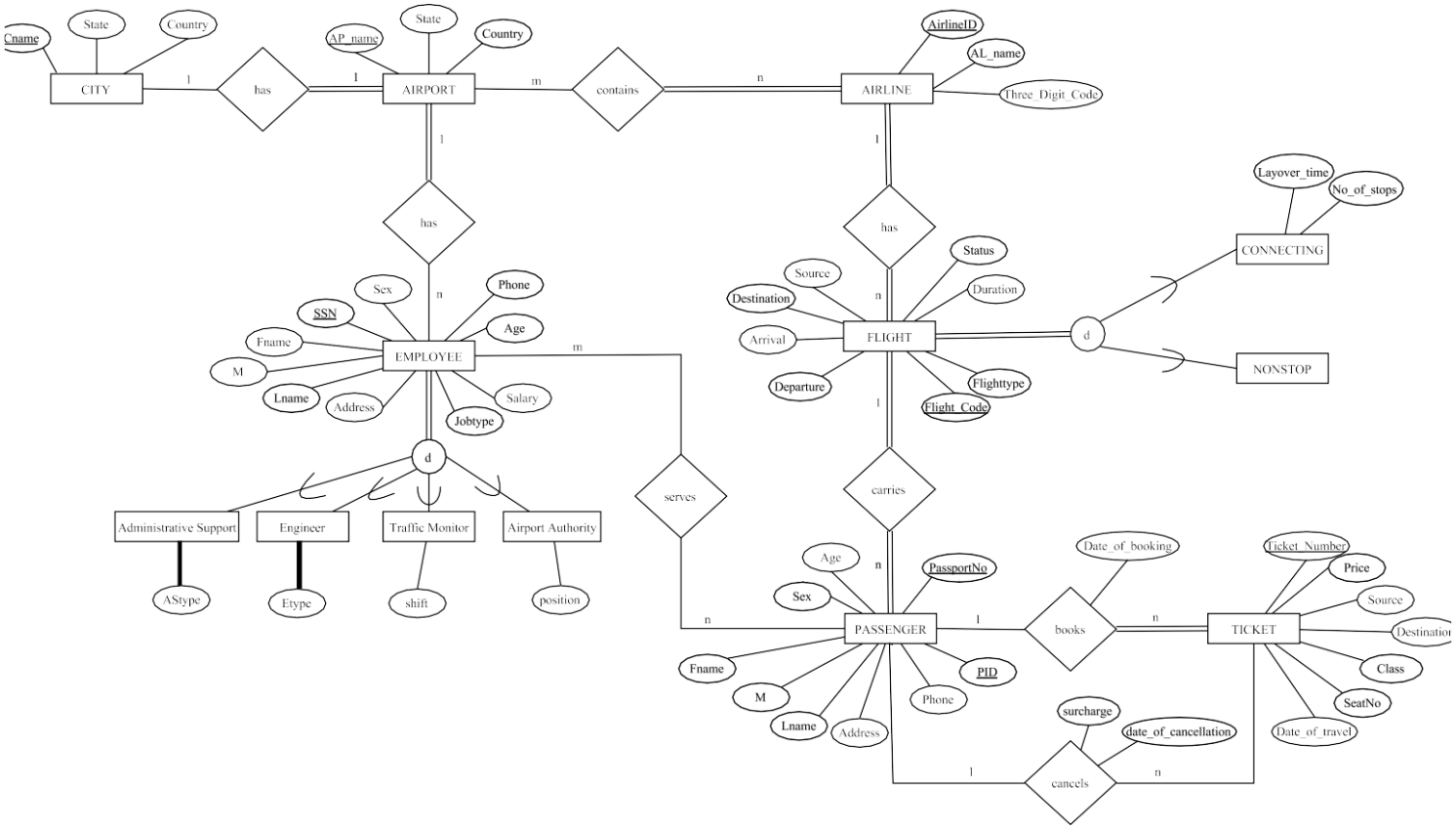


Figure 1: Airport Management System ER Diagram

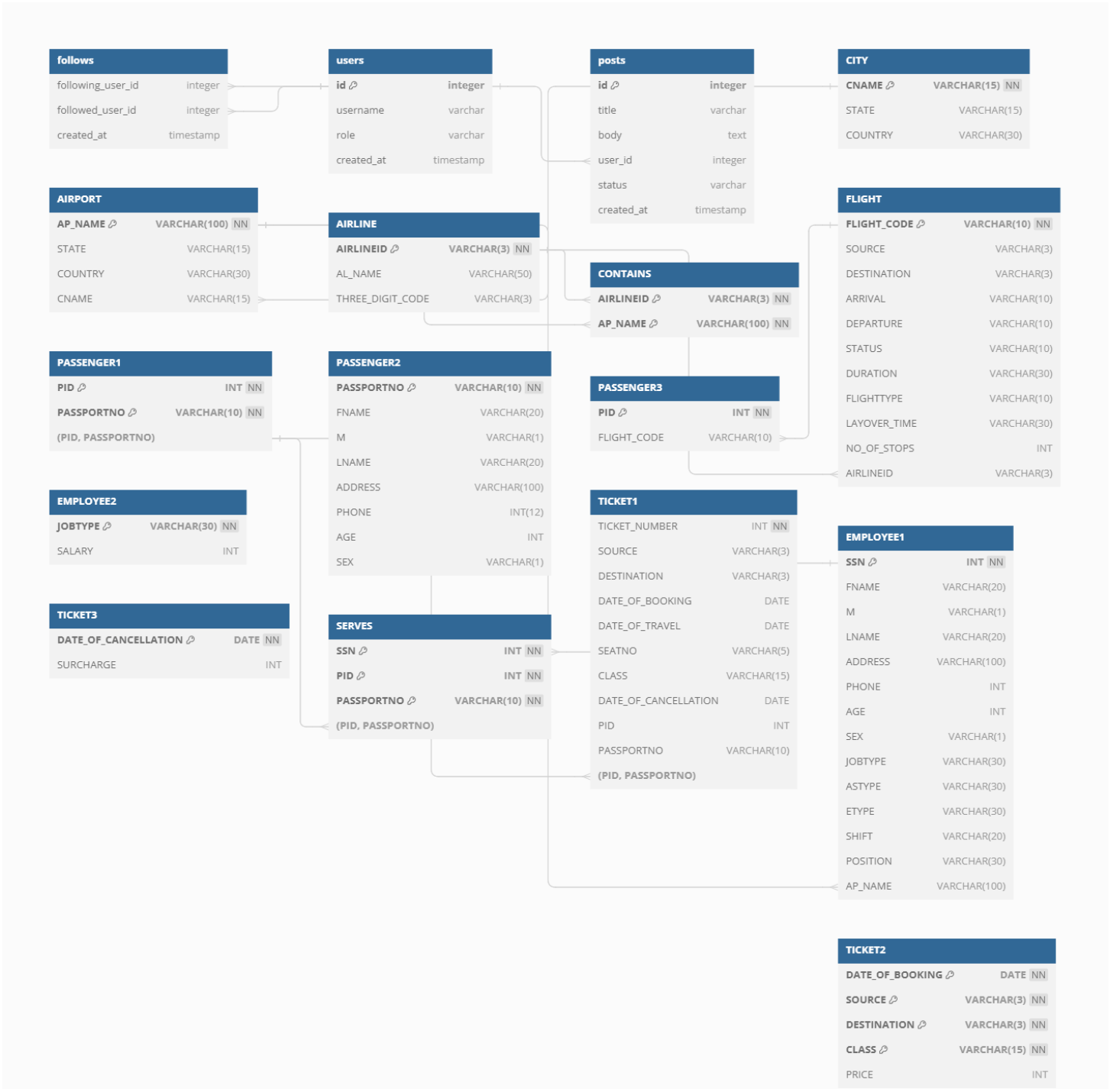
ER Diagram

ER diagram contains following relationships

Entity 1	Name of the Relationship	Entity 2	Cardinality
City	has	Airport	1:1
Airport	contains	Airline	m : n
Airport	has	Employee	1 : n
Airline	has	Flight	1 : n
Flight	carries	Passengers	1 : n
Employee	serves	Passengers	m : n
Passenger	books	Ticket	1 : n
Passenger	cancels	Ticket	1 : n

Type of the binary relationship	Relationships in the system
one-to-one	(1 A city has only one airport.
one-to-many	(1) An airline has multiple flights, that is many flightsbelong to the same airline company. (2) A flight carries many passengers. (3) A passenger can book one or more tickets. (4) A passenger can cancel one or more tickets.
many-to-many	All International airlines operating through various countries across the world have their offices locatedin all major cities and airports they cover. Hence, an airport may have many airline offices.

Relational Schema



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

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 creation and insertion(SQL)

-- Inserting Table: CITY--

```
CREATE TABLE CITY
(CNAME VARCHAR2(15) NOT NULL,
STATE VARCHAR2(15),
COUNTRY VARCHAR(30),
PRIMARY KEY(CNAME));
```

-- Inserting values of Table: CITY--

```
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES('Louisville','Kentucky','United States');
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES ('Chandigarh','Chandigarh','India');
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES ('Fort Worth','Texas','United States');
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES('Delhi','Delhi','India');
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES('Mumbai','Maharashtra','India');
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES('San Francisco', 'California', 'United States');INSERT
INTO CITY (CNAME, STATE, COUNTRY) VALUES('Frankfurt','Hesse','Germany');
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES('Houston','Texas','United States');
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES('New York City','New York','United States');INSERT
INTO CITY (CNAME, STATE, COUNTRY) VALUES('Tampa', 'Florida', 'United States');
```

-- Inserting Table: AIRPORT--

```
CREATE TABLE AIRPORT
(AP_NAME VARCHAR2(100) NOT NULL,
STATE VARCHAR2(15),
COUNTRY VARCHAR(30),
CNAME VARCHAR2(15),
PRIMARY KEY(AP_NAME),
FOREIGN KEY(CNAME) REFERENCES CITY(CNAME) ON DELETE CASCADE);
```

--Inserting values for Table: AIRPORT--

```
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('Louisville International
Airport','Kentucky','United States','Louisville');

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('Chandigarh International
Airport','Chandigarh','India','Chandigarh');

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('Dallas/Fort Worth International
Airport','Texas','United States','Fort Worth');
```

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('Indira GandhiInternational Airport','Delhi','India','Delhi');

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('Chhatrapati Shivaji International Airport','Maharashtra','India','Mumbai');

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('San Francisco International Airport','California', 'United States','San Francisco');

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('Frankfurt Airport','Hesse','Germany','Frankfurt');

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('George Bush Intercontinental Airport','Texas','United States','Houston');

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('John F. Kennedy International Airport','New York','United States','New York City');

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME) VALUES('Tampa International Airport','Florida', 'United States','Tampa');

-- Inserting Table: AIRLINE--

CREATE TABLE AIRLINE
(AIRLINEID VARCHAR(3) NOT NULL,
AL_NAME VARCHAR2(50),
THREE_DIGIT_CODE VARCHAR(3),
PRIMARY KEY(AIRLINEID));

-- Inserting values for Table: AIRLINE --

INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('AA','American Airlines','001');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('AI','Air India Limited','098');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('LH','Lufthansa', '220');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('BA','British Airways','125');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('QR','Qatar Airways','157');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('9W','Jet Airways','589');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('EK','Emirates','176');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('EY','Ethiad Airways','607');

-- Inserting Table: CONTAINS--

```
CREATE TABLE CONTAINS
(AIRLINEID VARCHAR(3) NOT
NULL,
AP_NAME VARCHAR2(100) NOT NULL,
PRIMARY KEY(AIRLINEID, AP_NAME),
FOREIGN KEY(AIRLINEID) REFERENCES AIRLINE(AIRLINEID) ON DELETE CASCADE,
FOREIGN KEY(AP_NAME) REFERENCES AIRPORT(AP_NAME) ON DELETE CASCADE);
```

-- Inserting values into Table: CONTAINS--

```
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AA','Louisville International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AA','John F. Kennedy International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AA','George Bush Intercontinental Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AA','San Francisco International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AA','Tampa International Airport');

INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AI','Chandigarh International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AI','Dallas/Fort Worth International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AI','Indira GandhiInternational Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AI','Chhatrapati Shivaji International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('AI','George Bush Intercontinental Airport');


INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('QR','Chhatrapati Shivaji International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('QR','Dallas/Fort Worth International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('QR','John F. Kennedy International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('QR','Tampa International Airport');
INSERT INTO CONTAINS (AIRLINEID, AP_NAME) VALUES('QR','Louisville International Airport');
```

-- Inserting Table: FLIGHT--

```
CREATE TABLE FLIGHT
(FLIGHT_CODE VARCHAR(10) NOT NULL,
SOURCE VARCHAR(3),
DESTINATION VARCHAR(3),
ARRIVAL VARCHAR2(10),
DEPARTURE VARCHAR2(10),
STATUS VARCHAR(10),
DURATION VARCHAR2(30),
FLIGHTTYPE VARCHAR(10),
LAYOVER_TIME VARCHAR2(30),
NO_OF_STOPS INT,
AIRLINEID VARCHAR(3),
PRIMARY KEY(FLIGHT_CODE),
FOREIGN KEY(AIRLINEID) REFERENCES AIRLINE(AIRLINEID) ON DELETE CASCADE);
```

-- Inserting values into Table: FLIGHT—

INSERT INTO FLIGHT(FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID) VALUES('AI2014','BOM','DFW','02:10','03:15','On-time','24hr','Connecting',3,1,'AI');

INSERT INTO FLIGHT(FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES('QR2305','BOM','DFW','13:00','13:55','Delayed','21hr','Non-stop',0,0,'QR');

INSERT INTO FLIGHT(FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES('EY1234','JFK','TPA','19:20','20:05','On-time','16hrs','Connecting',5,2,'EY');

INSERT INTO FLIGHT(FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID) VALUES('LH9876','JFK','BOM','05:50','06:35','On-time','18hrs','Non-stop',0,0,'LH');

INSERT INTO FLIGHT(FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID) VALUES('BA1689','FRA','DEL','10:20','10:55','On-time','14hrs','Non-stop',0,0,'BA');

INSERT INTO FLIGHT(FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID) VALUES('AA4367','SFO','FRA','18:10','18:55','On-time','21hrs','Non-stop',0,0,'AA');

INSERT INTO FLIGHT(FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES('QR1902','IXC','IAH','22:00','22:50','Delayed','28hrs','Non-stop',5,1,'QR');

-- Inserting Table: PASSENGER1--

CREATE TABLE PASSENGER1
(PID INT NOT NULL,
PASSPORTNO VARCHAR(10) NOT NULL,
PRIMARY KEY(PID, PASSPORTNO));

-- Inserting values in table: PASSENGER1--
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(1,'A1234568');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(2,'B9876541');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(3,'C2345698');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(4,'D1002004');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(5,'X9324666');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(6,'B8765430');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(7,'J9801235');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(8,'A1122334');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(9,'Q1243567');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(10,'S1243269');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(11,'E3277889');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(12,'K3212322');

```
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(13,'P3452390');
```

-- Inserting Table: PASSENGER2--

```
CREATE TABLE PASSENGER2
(PASSPORTNO VARCHAR(10) NOT NULL,
FNAME VARCHAR2(20),
M  VARCHAR(1),
LNAME  VARCHAR2(20),
ADDRESS VARCHAR2(100),
PHONE INT,
AGE INT,
SEX VARCHAR(1),
PRIMARY  KEY(PASSPORTNO));
```

--Inserting VALUES IN TABLE: PASSENGER2--

```
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('A1234568','ALEN','M','SMITH','2230 NORTHSIDE, APT 11, ALBANY, NY',8080367290,30,'M');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('B9876541','ANKITA','V','AHIR','3456 VIKAS APTS, APT 102,DOMBIVLI, INDIA',8080367280,26,'F');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('C2345698','KHYATI','A','MISHRA','7820 MCCALLUM COURTS, APT 234, AKRON,
OH',8082267280,30,'F');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('D1002004','ANKITA','S','PATIL','7720 MCCALLUM BLVD, APT 1082, DALLAS, TX',9080367266,23,'F');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('X9324666','TEJASHREE','B','PANDIT','9082 ESTAES OF RICHARDSON, RICHARDSON,
TX',9004360125,28,'F');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('B8765430','LAKSHMI','P','SHARMA','1110 FIR HILLS, APT 903, AKRON, OH',7666190505,30,'F');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('J9801235','AKHILESH','D','JOSHI','345 CHATHAM COURTS, APT 678, MUMBAI,
INDIA',9080369290,29,'M');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('A1122334','MANAN','S','LAKHANI','5589 CHTHAM REFLECTIONS, APT 349 HOUSTON,
TX',9004335126,25,'F');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('Q1243567','KARAN','M','MOTANI','4444 FRANKFORD VILLA, APT 77, GUILDERLAND,
NY',9727626643,22,'M');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('S1243269','ROM','A','SOLANKI','7720 MCCALLUM BLVD, APT 2087, DALLAS, TX',9004568903,60,'M');


INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('E3277889','John','A','GATES','1234 BAKER APTS, APT 59, HESSE, GERMANY',9724569986,10,'M');
```

```
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('K3212322','SARA','B','GOMES','6785 SPLITSVILLA, APT 34, MIAMI, FL',9024569226,15,'F');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('P3452390','ALIA','V','BHAT','548 MARKET PLACE, SAN Francisco, CA',9734567800,10,'F');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('W7543336','JOHN','P','SMITH','6666 ROCK HILL, APT 2902, TAMPA, FL',4624569986,55,'M');

INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('R8990566','RIA','T','GUPTA','3355 PALENCIA, APT 2065, MUMBAI, INDIA',4724512343,10,'M');
```

-- Inserting Table: PASSENGER3--

```
CREATE TABLE PASSENGER3
(PID INT NOT NULL,
FLIGHT_CODE VARCHAR(10),
PRIMARY KEY(PID),
FOREIGN KEY(FLIGHT_CODE) REFERENCES FLIGHT(FLIGHT_CODE) ON DELETE CASCADE);
```

-- Inserting values into Table: PASSENGER3--

```
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(1,'AI2014');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(2,'LH9876');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(3,'9W2334');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(4,'QR1902');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(5,'EY1234');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(6,'BA3056');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(7,'9W2334');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(8,'AA4367');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(9,'QR1902');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(10,'EK3456');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(11,'BA1689');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(12,'QR1902');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(13,'AI2014');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(14,'BA1689');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(15,'QR2305');
```

-- Inserting Table: EMPLOYEE1—

```
CREATE TABLE EMPLOYEE1
(SSN INT NOT NULL,
FNAME VARCHAR2(20),
M  VARCHAR(1),
LNAME  VARCHAR2(20),
```

```
ADDRESS VARCHAR2(100),
PHONE INT,
AGE INT,
SEX VARCHAR(1),
JOBTYPE VARCHAR2(30),
ASTYPE VARCHAR2(30),
ETYPE VARCHAR2(30),
SHIFT VARCHAR2(20),
POSITION VARCHAR2(30),
AP_NAME VARCHAR2(100),
PRIMARY KEY(SSN),
FOREIGN KEY(AP_NAME) REFERENCES AIRPORT(AP_NAME) ON DELETE CASCADE);
```

-- Implementing Business Rule Using Check Constraint--

AGE OF AN EMPLOYEE WORKING FOR AN AIRPORT SHOULD NOT BE GREATER THAN 65--

```
ALTER TABLE EMPLOYEE1
ADD CONSTRAINT AGE_LIMIT CHECK(AGE < 65);
```

-- Example Of Violation Of Check Constraint--

```
INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(123456799,'RAM','M','SHARMA','731 HILL TOWN, ARLINGTON, TX',4356789365, 66,
'M','ADMINISTRATIVE SUPPORT','RECEPTIONIST',',',',','Louisville International Airport');
```

-- Inserting values in table: EMPLOYEE1 --

```
INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(123456789,'LINDA','M','GOODMAN','731 Fondren, Houston, TX',4356789345, 35,
'F','ADMINISTRATIVE SUPPORT','RECEPTIONIST',',',',','Louisville International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(333445555,'JOHNY','N','PAUL','638 Voss, Houston, TX',9834561995, 40, 'M','ADMINISTRATIVE
SUPPORT','SECRETARY',',',',','Louisville International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(999887777,'JAMES','P','BOND','3321 Castle, Spring, TX',9834666995, 50,
'M','ENGINEER',','RADIO ENGINEER',',',','Louisville International Airport');


INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(987654321,'SHERLOCK','A','HOLMES','123 TOP HILL, SAN Francisco,CA',8089654321, 47,
'M','TRAFFIC MONITOR',',',','DAY',','San Francisco International Airport');
```

```
INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(666884444,'SHELDON','A','COOPER','345 CHERRY PARK, HESSE,GERMANY',1254678903, 55,'M','TRAFFIC
MONITOR','','NIGHT','','','Frankfurt Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(453453453,'RAJ','B','SHARMA','345 FLOYDS, MUMBAI,INDIA',4326789031, 35, 'M','AIRPORT
AUTHORITY','','','','MANAGER','Chhatrapati Shivaji International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(987987987,'NIKITA','C','PAUL','110 SYNERGY PARK, DALLAS,TX',5678904325, 33,
'F','ENGINEER','','AIRPORT CIVIL ENGINEER','','','Dallas/Fort Worth International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(888665555,'SHUBHAM','R','GUPTA','567 CHANDANI CHOWK, DELHI, INDIA',8566778890, 39,
'M','ADMINISTRATIVE SUPPORT','DATA ENTRY WORKER','','','','Indira GandhiInternational Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(125478909,'PRATIK','T','GOMES','334 VITRUVIAN PARK, ALBANY, NY',4444678903, 56,
'M','TRAFFIC MONITOR','','DAY','','','John F. Kennedy International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE,
ETYPE, SHIFT, POSITION, AP_NAME)
VALUES(324567897,'ADIT','P','DESAI','987 SOMNATH, CHANDIGARH, INDIA',2244658909, 36,
'M','TRAFFIC MONITOR','','DAY','','','Chandigarh International Airport');
```

-- Inserting Table: EMPLOYEE2 --

```
CREATE TABLE EMPLOYEE2
(JOBTYPE VARCHAR2(30) NOT NULL,
SALARY INT,
PRIMARY KEY(JOBTYPE));
```

--INSERTING VALUES INTO TABLE: EMPLOYEE2 --

```
INSERT INTO EMPLOYEE2(JOBTYPE, SALARY)VALUES('ADMINISTRATIVE SUPPORT',50000);
INSERT INTO EMPLOYEE2(JOBTYPE, SALARY)VALUES('ENGINEER',70000);
INSERT INTO EMPLOYEE2(JOBTYPE, SALARY)VALUES('TRAFFIC MONITOR',80000);
INSERT INTO EMPLOYEE2(JOBTYPE, SALARY)VALUES('AIRPORT AUTHORITY',90000);
```

-- Inserting Table: SERVES --

```
CREATE TABLE
SERVES(SSN INT NOT
NULL, PID INT NOT
NULL,
PASSPORTNO VARCHAR(10) NOT NULL,
PRIMARY KEY(SSN, PID, PASSPORTNO),
FOREIGN KEY(SSN) REFERENCES EMPLOYEE1(SSN) ON DELETE CASCADE,
FOREIGN KEY(PID, PASSPORTNO) REFERENCES PASSENGER1(PID, PASSPORTNO) ON DELETE CASCADE);
```

-- INSERTING VALUES INTO TABLE: SERVES --

```
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,1,'A1234568'); INSERT
INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,15,'R8990566'); INSERT INTO
SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,9,'Q1243567'); INSERT INTO
SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,4,'D1002004'); INSERT INTO
SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,13,'P3452390'); INSERT INTO
SERVES(SSN, PID, PASSPORTNO) VALUES(333445555,10,'S1243269'); INSERT INTO
SERVES(SSN, PID, PASSPORTNO) VALUES(333445555,12,'K3212322'); INSERT INTO
SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,12,'K3212322'); INSERT INTO
SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,7,'J9801235'); INSERT INTO
SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,7,'J9801235');
```

-- Inserting Table: TICKET1 --

```
CREATE TABLE TICKET1
(TICKET_NUMBER VARCHAR(13) NOT NULL,
SOURCE VARCHAR(3),
DESTINATION VARCHAR(3),
DATE_OF_BOOKING DATE,
DATE_OF_TRAVEL DATE,
SEATNO VARCHAR(5),
CLASS VARCHAR2(15),
DATE_OF_CANCELLATION DATE,
PID INT,
PASSPORTNO VARCHAR(10),
FOREIGN KEY(PID, PASSPORTNO) REFERENCES PASSENGER1(PID, PASSPORTNO) ON DELETE CASCADE);
```

-- Adding CHECK constraint on an attribute TICKET_NUMBER --

```
ALTER TABLE TICKET1
ADD CONSTRAINT TICKET_NO_LENGTH CHECK(LENGTH(TICKET_NUMBER)=13);
```

-- Checking Violation Of A Constraint--

```
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(00112341111221,'BOM','DFW','11-MAY-16','','15-DEC-16','32A','ECONOMY',1,'A1234568');
```

-- Inserting values into Table: TICKET1--

--INSERTING INTO TABLE: TICKET1--
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(0011234111122,'BOM','DFW','11-MAY-16','','15-DEC-16','32A','ECONOMY',1,'A1234568');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1570864987655,'IXC','IAH','12-NOV-16','','30-DEC-16','54C','ECONOMY',9,'Q1243567');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1579283997799,'BOM','SFO','22-JAN-16','','15-DEC-16','38A','ECONOMY',10,'S1243269');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1255701876107,'FRA','DEL','19-OCT-16','','31-DEC-16','57F','ECONOMY',11,'E3277889');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1251334499699,'IXC','IAH','20-NOV-16','','12-JAN-17','45D','ECONOMY',12,'K3212322');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1258776199490,'BOM','DFW','13-MAY-16','25-MAY-16','15-DEC-
16','37C','ECONOMY',13,'P3452390');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(5891155114477,'FRA','DEL','26-JUN-16','','23-DEC-16','55C','ECONOMY',14,'W7543336');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(5893069766787,'BOM','DFW','11-AUG-16','','22-DEC-16','33F','ECONOMY',15,'R8990566');

-- Inserting Table: TICKET2--

```
CREATE TABLE TICKET2
(DATE_OF_BOOKING DATE NOT NULL,
SOURCE VARCHAR(3) NOT NULL,
DESTINATION VARCHAR(3) NOT NULL,
CLASS VARCHAR2(15) NOT NULL,
PRICE INT,
PRIMARY KEY(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS));
```

-- Inserting Values into: TICKET2 --

```
INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('11-MAY-16','BOM','DFW','ECONOMY',95000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('11-JUN-16','JFK','BOM','ECONOMY',100000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('21-AUG-16','IAH','DEL','BUSINESS',200000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('10-AUG-16','IXC','IAH','FIRST-CLASS',150000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('13-JUN-16','JFK','TPA','ECONOMY',98000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('11-NOV-16','BOM','DFW','ECONOMY',125000);
```

-- Inserting Table: TICKET3 --

```
CREATE TABLE TICKET3
(DATE_OF_CANCELLATION DATE NOT NULL,
SURCHARGE INT,
PRIMARY KEY(DATE_OF_CANCELLATION));
```

-- INSERTING VALUES INTO TABLE: TICKET3 --

```
INSERT INTO TICKET3(DATE_OF_CANCELLATION, SURCHARGE) VALUES('10-DEC-16',75000);
INSERT INTO TICKET3(DATE_OF_CANCELLATION, SURCHARGE) VALUES('25-MAY-16',25000);
```

SQL Queries Corresponding to given questions

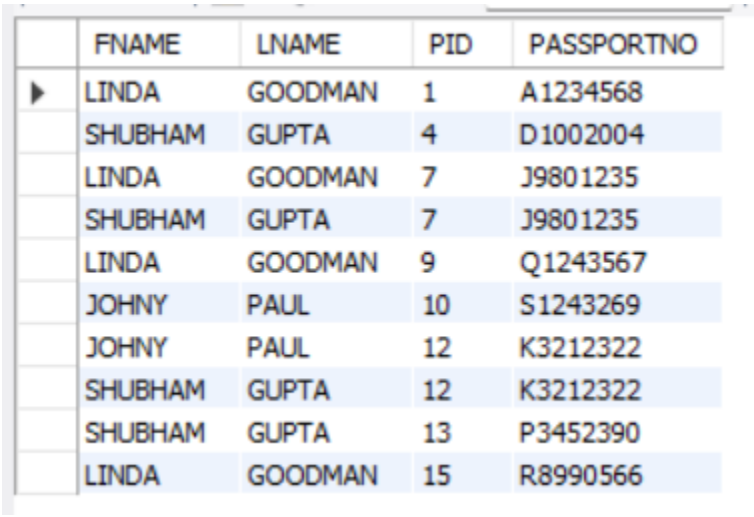
- Retrieve all flights departing from and arriving at a specific airport:

```
SELECT FLIGHT_CODE, SOURCE, DESTINATION
FROM FLIGHT
WHERE SOURCE = 'BOM' OR DESTINATION = 'BOM';
```

FLIGHT_CODE	SOURCE	DESTINATION
AI2014	BOM	DFW
BA3056	BOM	DFW
EK3456	BOM	SFO
LH9876	JFK	BOM
QR2305	BOM	DFW
NULL	NULL	NULL

- List all employees who serve passengers along with the passengers they serve:

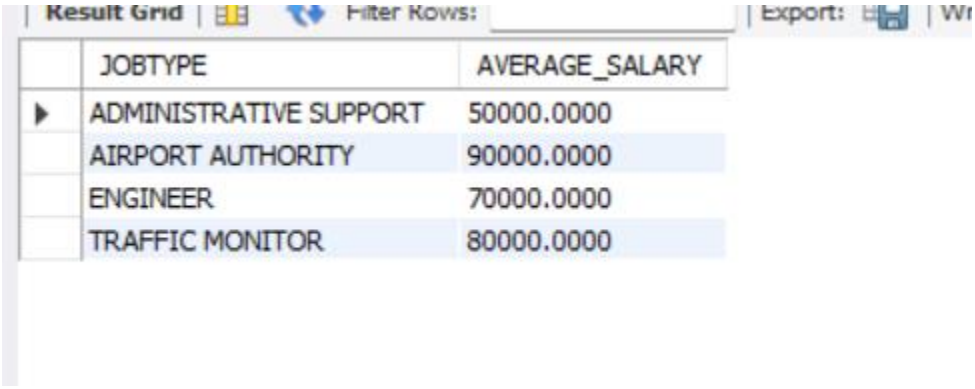
```
SELECT e.FNAME, e.LNAME, p.PID, p.PASSPORTNO
FROM EMPLOYEE1 e
INNER JOIN SERVES s ON e.SSN = s.SSN
INNER JOIN PASSENGER1 p ON s.PID = p.PID AND s.PASSPORTNO = p.PASSPORTNO;
```



FNAME	LNAME	PID	PASSPORTNO
LINDA	GOODMAN	1	A1234568
SHUBHAM	GUPTA	4	D1002004
LINDA	GOODMAN	7	J9801235
SHUBHAM	GUPTA	7	J9801235
LINDA	GOODMAN	9	Q1243567
JOHNY	PAUL	10	S1243269
JOHNY	PAUL	12	K3212322
SHUBHAM	GUPTA	12	K3212322
SHUBHAM	GUPTA	13	P3452390
LINDA	GOODMAN	15	R8990566

- Find the average salary of employees for each job type:

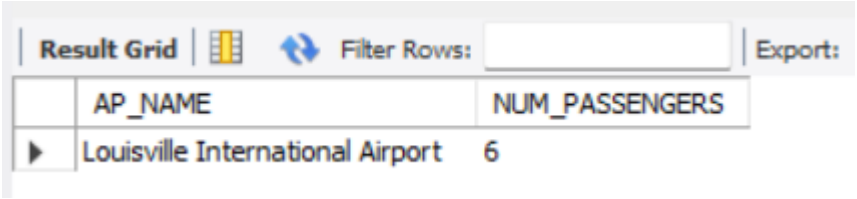
```
SELECT JOBTYPE, AVG(SALARY) AS AVERAGE_SALARY
FROM EMPLOYEE2
GROUP BY JOBTYPE;
```



JOBTYPE	AVERAGE_SALARY
ADMINISTRATIVE SUPPORT	50000.0000
AIRPORT AUTHORITY	90000.0000
ENGINEER	70000.0000
TRAFFIC MONITOR	80000.0000

- Find the busiest airport by the total number of passengers served:

```
SELECT ap.AP_NAME, COUNT(DISTINCT s.PID) AS NUM_PASSENGERS
FROM AIRPORT ap
LEFT JOIN EMPLOYEE1 e ON ap.AP_NAME = e.AP_NAME
LEFT JOIN SERVES s ON e.SSN = s.SSN
GROUP BY ap.AP_NAME
ORDER BY NUM_PASSENGERS DESC
LIMIT 1;
```



Result Grid | Filter Rows: | Export:

AP_NAME	NUM_PASSENGERS
Louisville International Airport	6

- Retrieve the top 5 passengers with the most flight bookings:

```
SELECT p.PID, p.PASSPORTNO, COUNT(*) AS NUM_BOOKINGS
FROM PASSENGER1 p
INNER JOIN TICKET1 t ON p.PID = t.PID AND p.PASSPORTNO = t.PASSPORTNO
GROUP BY p.PID, p.PASSPORTNO
ORDER BY NUM_BOOKINGS DESC
LIMIT 5;
```

Result Grid | Filter Rows:

PID	PASSPORTNO	NUM_BOOKINGS
1	A1234568	1
2	B9876541	1
3	C2345698	1
4	D1002004	1
5	X9324666	1

- List all flights that have a duration of more than 5 hours:

```
SELECT FLIGHT_CODE, SOURCE, DESTINATION, DURATION
FROM FLIGHT
WHERE DURATION > '05:00:00';
```

Result Grid | Filter Rows: | Edit:

FLIGHT_CODE	SOURCE	DESTINATION	DURATION
9W2334	IAH	DEL	23hrs
AA4367	SFO	FRA	21hrs
AI2014	BOM	DFW	24hr
BA1689	FRA	DEL	14hrs
BA3056	BOM	DFW	29hrs
EK3456	BOM	SFO	30hrs
EY1234	JFK	TPA	16hrs
LH9876	JFK	BOM	18hrs
QR1902	IXC	IAH	28hrs
QR2305	BOM	DFW	21hr
NULL	NULL	NULL	NULL

PL/SQL Procedures

Stored procedure -

1.1 For details of economy class passengers with destination ‘DFW’

```
CREATE OR REPLACE PROCEDURE DFWECONOMYPASSENGERS AS
   CURSOR ECOPASSDETAILS IS
      SELECT al.AL_NAME,
           fl.FLIGHT_CODE,
           p2.FNAME,
           p2.LNAME,
           p2.PASSPORTNO,
           t.CLASS,
           t.DATE_OF_TRAVEL,
           t.DESTINATION,
           t.SOURCE,
           t.SEATNO,
           t.TICKET_NUMBER
      FROM Airline al,
         Flight fl,
         PASSENGER1 p1,
         PASSENGER2 p2,
         PASSENGER3 p3,
         TICKET1 t
      WHERE al.AIRLINEID = fl.AIRLINEID
        AND p1.PID = p3.PID
        AND p1.PASSPORTNO = p2.PASSPORTNO
        AND fl.FLIGHT_CODE = p3.FLIGHT_CODE
        AND t.PASSPORTNO = p2.PASSPORTNO
        AND t.CLASS = 'ECONOMY'
        AND t.DESTINATION = 'DFW';
   PASSDETAILS ECOPASSDETAILS%ROWTYPE;

BEGIN
   OPEN ECOPASSDETAILS;
   LOOP
      FETCH ECOPASSDETAILS INTO PASSDETAILS;
      EXIT WHEN ECOPASSDETAILS%NOTFOUND;
      DBMS_OUTPUT.PUT_LINE(PASSDETAILS.AL_NAME || ' ' || PASSDETAILS.FLIGHT_CODE || ' ' ||
PASSDETAILS.FNAME || ' ' || PASSDETAILS.LNAME || ' ' || PASSDETAILS.PASSPORTNO || ' ' ||
PASSDETAILS.CLASS || ' ' || PASSDETAILS.SOURCE || ' ' || PASSDETAILS.SEATNO || ' ' ||
PASSDETAILS.TICKET_NUMBER);
   END LOOP;
   CLOSE ECOPASSDETAILS;
END DFWECONOMYPASSENGERS;
/
```

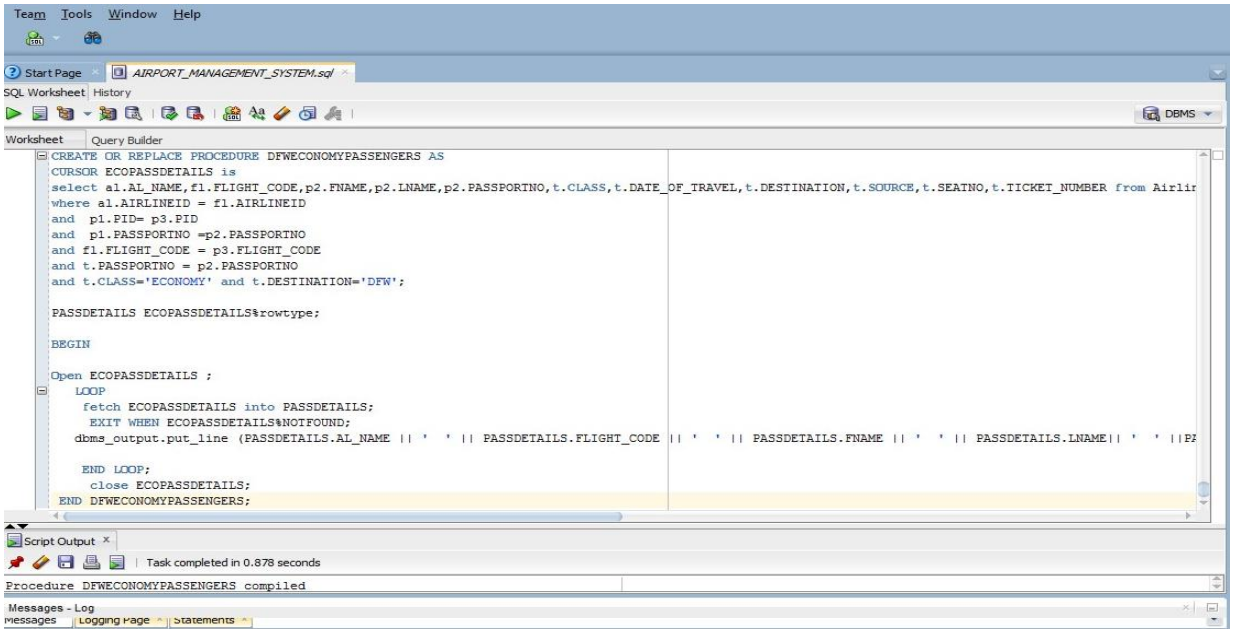


Figure 2: Stored Procedure 1

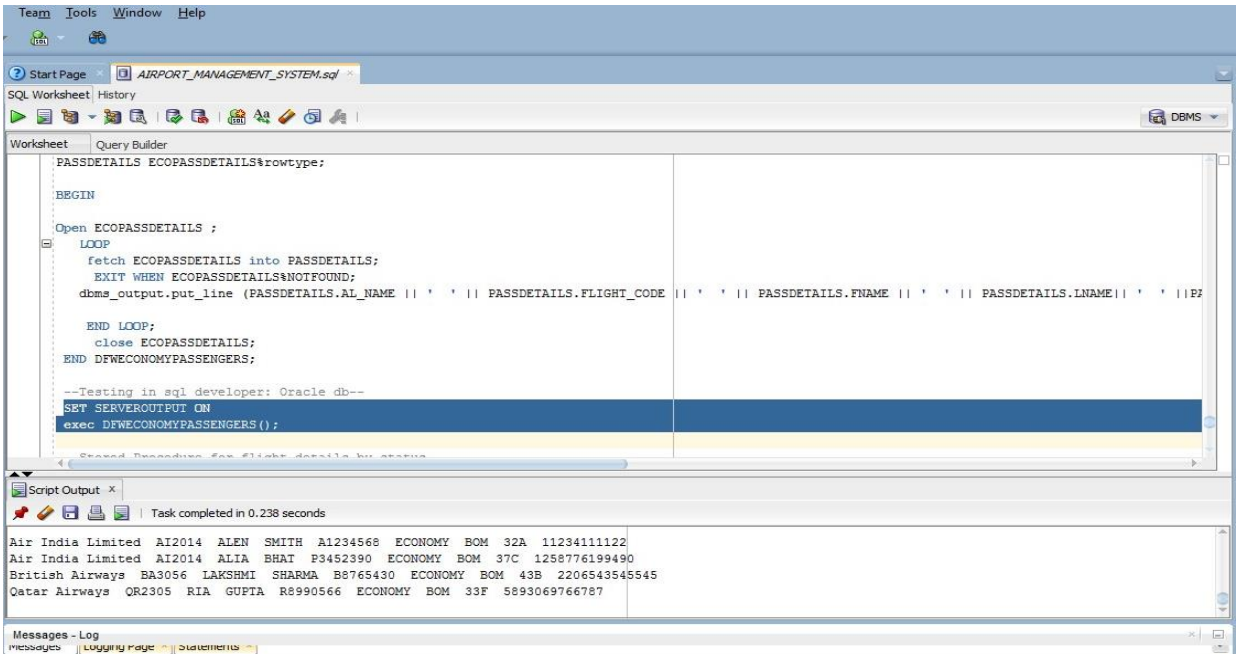


Figure 3: Stored Procedure 1

1.2 Stored Procedure for flight details by status

```
CREATE OR REPLACE PROCEDURE FLIGHTSBYSTATUS (IN_STATUS IN VARCHAR2) AS
   CURSOR fSTATUS IS
      SELECT DISTINCT F.FLIGHT_CODE,
                  AL.AL_NAME,
                  F.ARRIVAL,
                  F.DEPARTURE,
                  F.SOURCE,
                  F.DESTINATION,
                  F.STATUS,
                  F.FLIGHTTYPE
      FROM AIRLINE AL,
          AIRPORT AP,
          FLIGHT F
      WHERE AL.AIRLINEID = F.AIRLINEID
        AND F.STATUS = IN_STATUS;
   FlightStatus fSTATUS%ROWTYPE;
BEGIN
   OPEN fSTATUS;
   LOOP
      FETCH fSTATUS INTO FlightStatus;
      EXIT WHEN fSTATUS%NOTFOUND;
      DBMS_OUTPUT.PUT_LINE (FlightStatus.FLIGHT_CODE || ' ' || FlightStatus.AL_NAME || ' ' ||
FlightStatus.ARRIVAL || ' ' || FlightStatus.DEPARTURE || ' ' || FlightStatus.SOURCE || ' ' ||
FlightStatus.DESTINATION || ' ' || FlightStatus.STATUS || ' ' || FlightStatus.FLIGHTTYPE);
   END LOOP;
   CLOSE fSTATUS;
END FLIGHTSBYSTATUS;
/
```

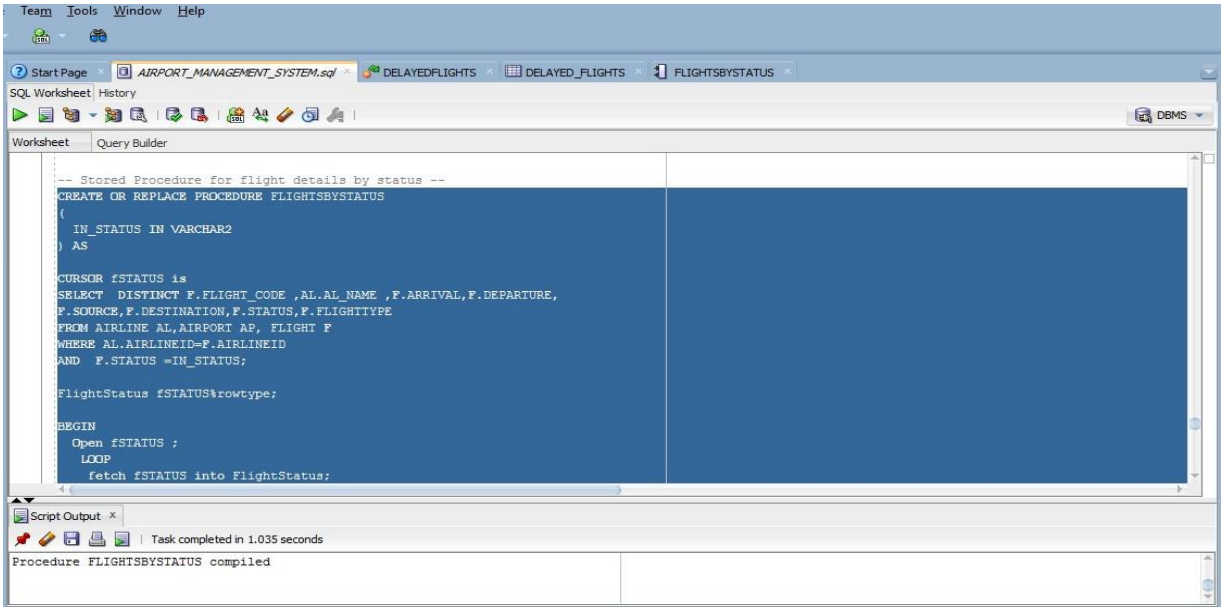


Figure 4: Stored Procedure 2

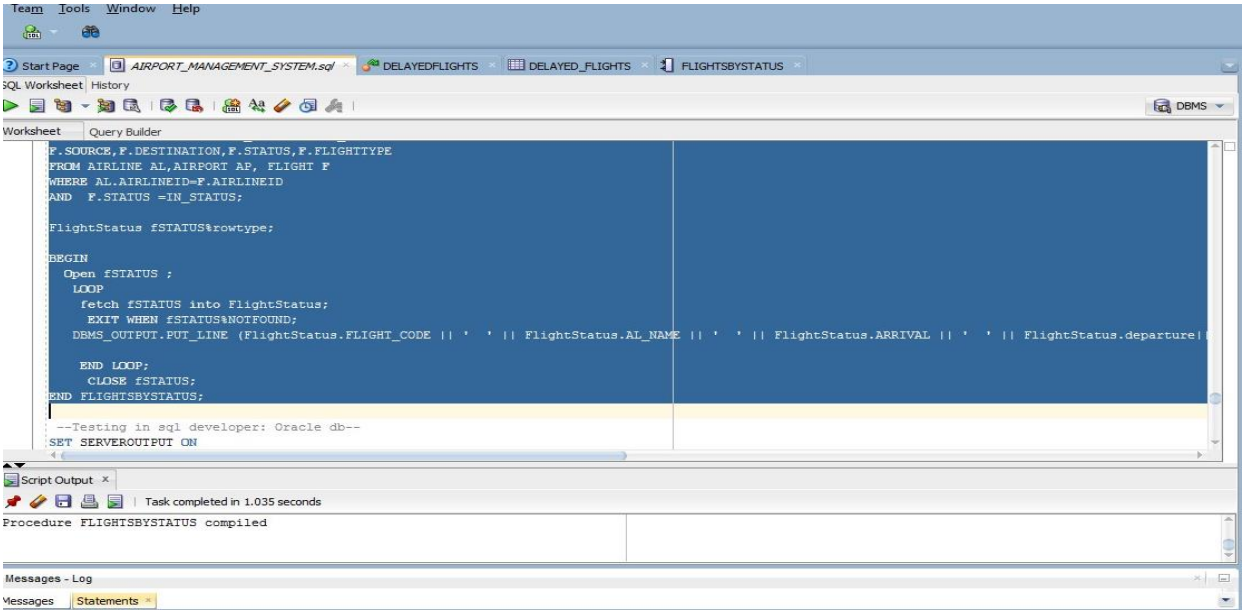


Figure 5: Stored Procedure 2

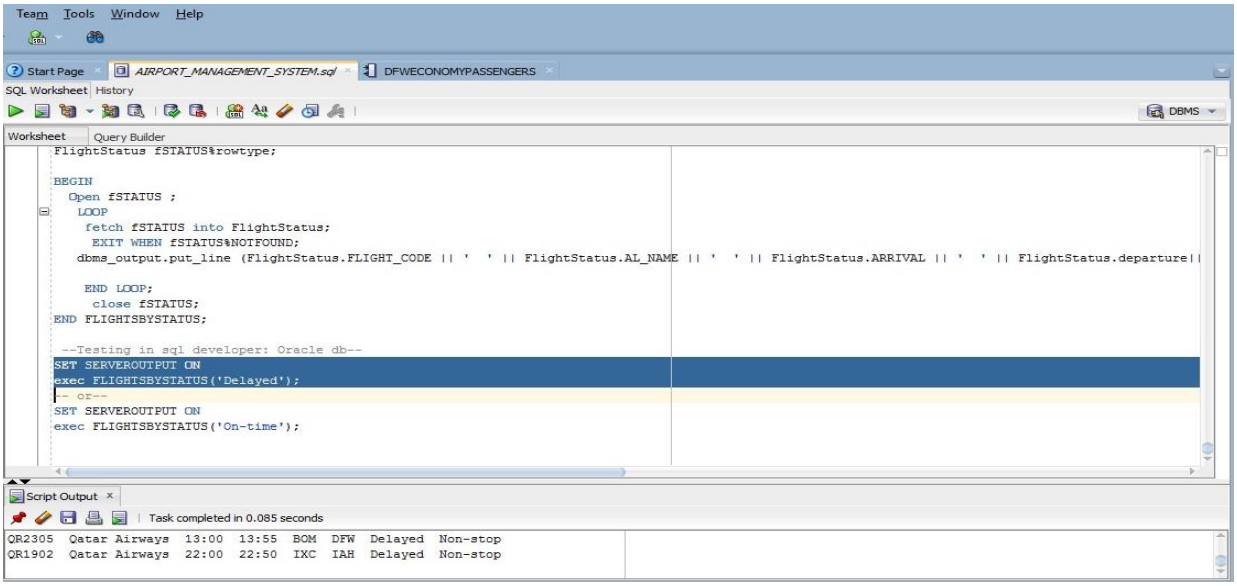


Figure 6: Stored Procedure 2

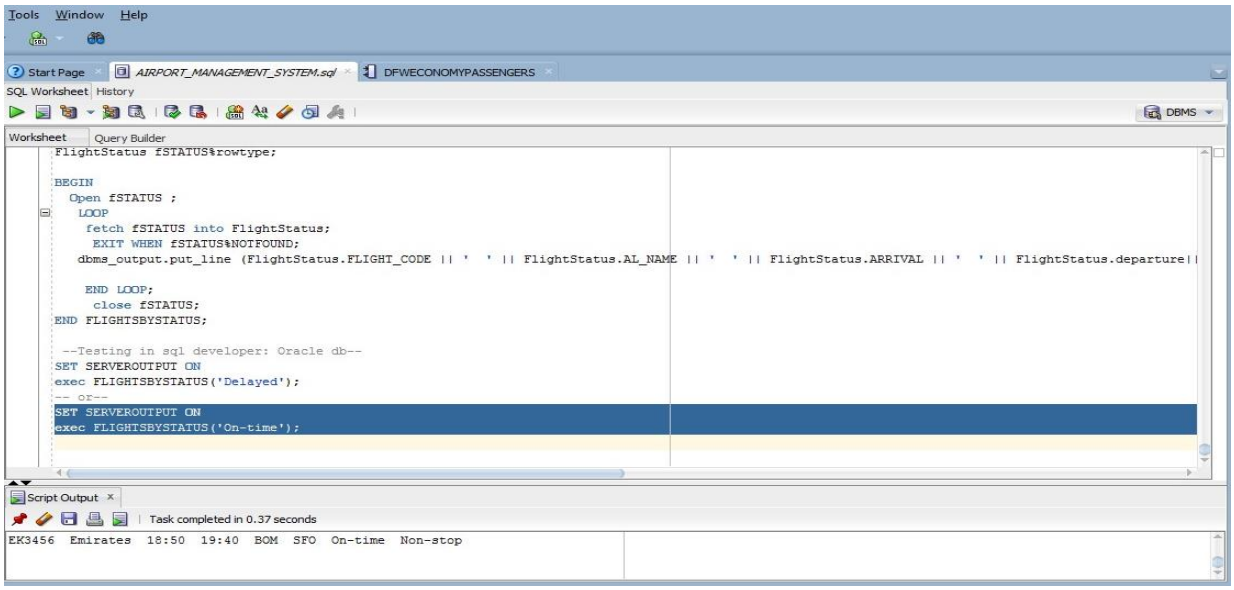


Figure 7: Stored Procedure 2

Airline- X Interface

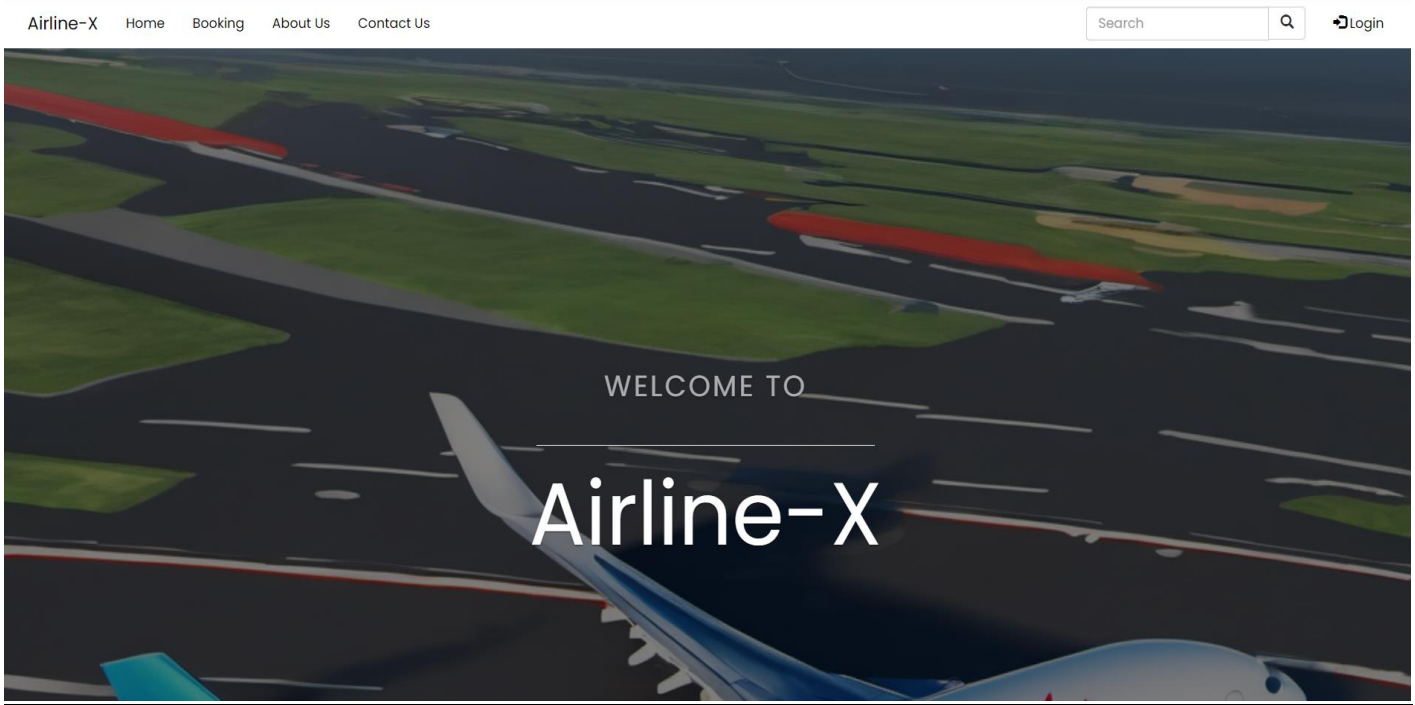
The frontend of the Airline Management System offers intuitive interfaces, including a dynamic home page, an admin portal for system management, account management for users, seamless flight booking, efficient contact options, and secure payment processing. It ensures a user-friendly experience with visually appealing designs and easy navigation.

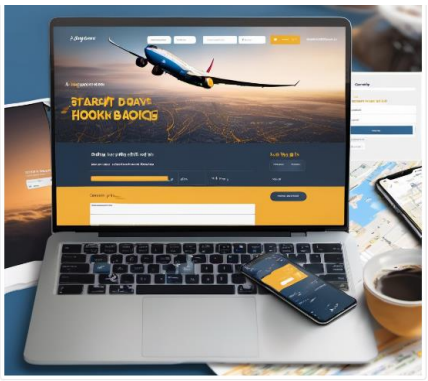
Requirements -

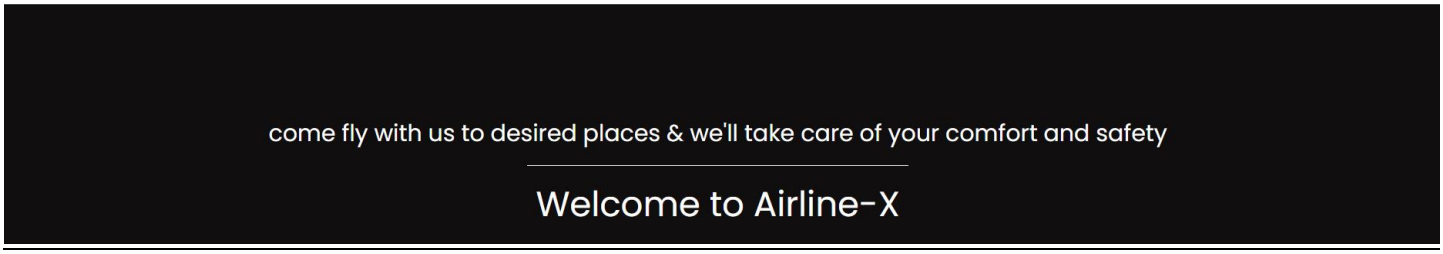
The system is developed using MySQL for the backend database and HTML, CSS, and JavaScript for the frontend interface, providing a user-friendly experience for both airport staff and passengers. Through effective data management and seamless user interaction, the Airline Management System aims to enhance efficiency, accuracy, and convenience in airport operations and passenger services

1. Home Page –

The home page serves as the entry point to the Airline Management System, offering a visually appealing interface that welcomes users and provides an overview of the system's functionalities. It may feature captivating imagery of airplanes, airports, or travel destinations, accompanied by brief descriptions of key features and services offered by the system.

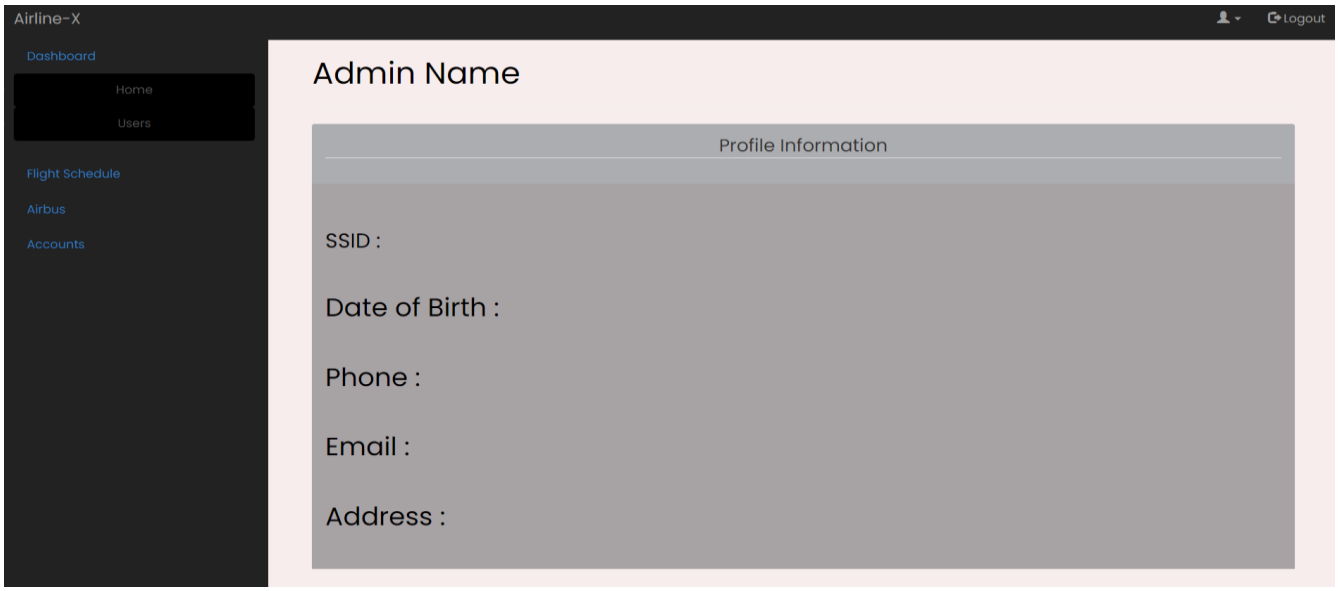


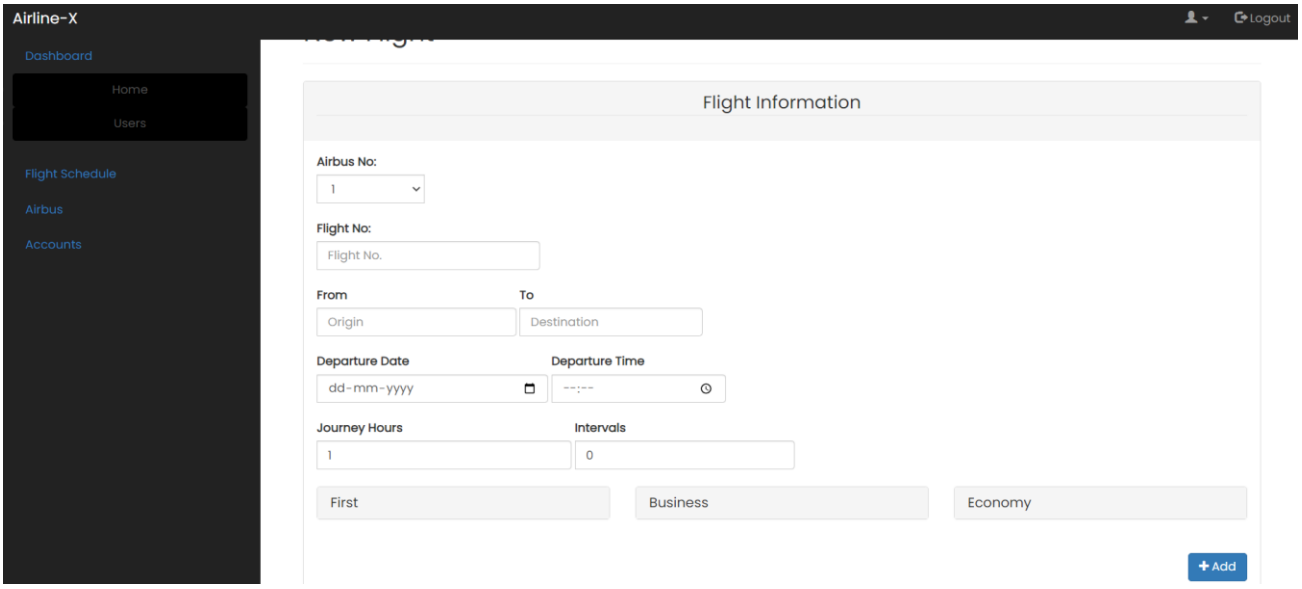


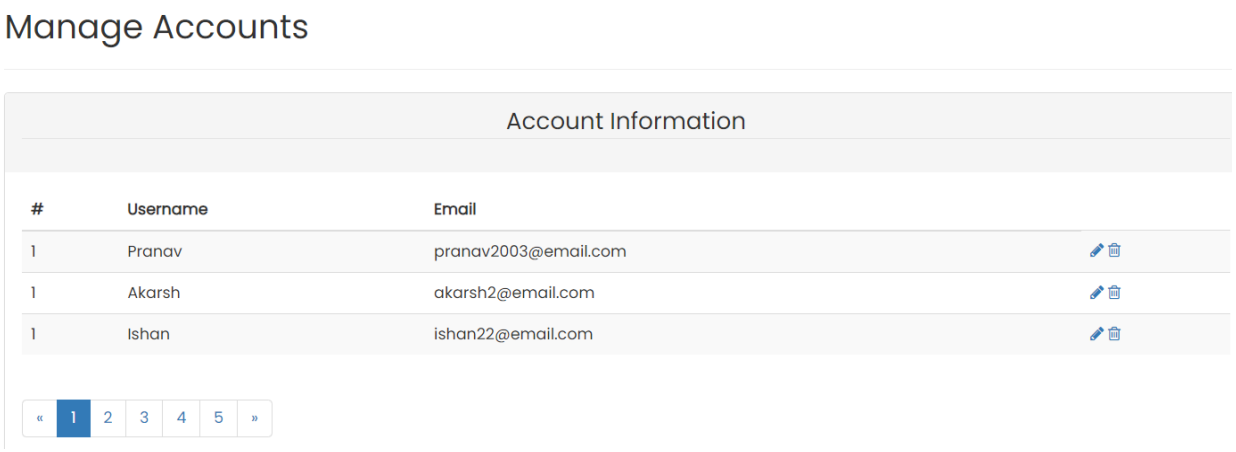


2. Admin Page –

The admin page is a secure portal accessible only to authorized personnel responsible for managing the Airline Management System. It provides comprehensive tools and functionalities for administrators to oversee user accounts, flight details, bookings, and system configurations.

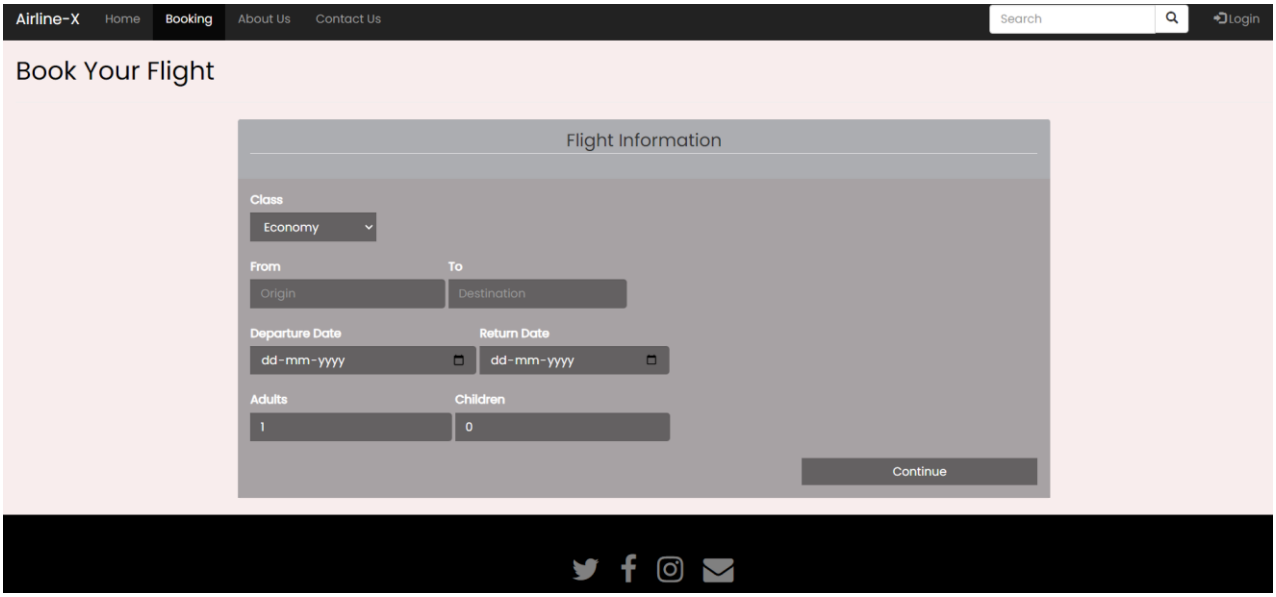






3. Book a Flight -

The "Book a Flight" page provides users with a user-friendly interface to search, select, and book flights. It allows users to specify travel details, view available flights with comprehensive information, choose seating preferences, and seamlessly complete bookings through secure payment processing, ensuring a convenient and efficient flight booking experience.


Airline-X
Home
Booking
About Us
Contact Us
Search
Login
Book Your Flight
Flight Information
Class
Economy
From
To
Origin
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Departure Date
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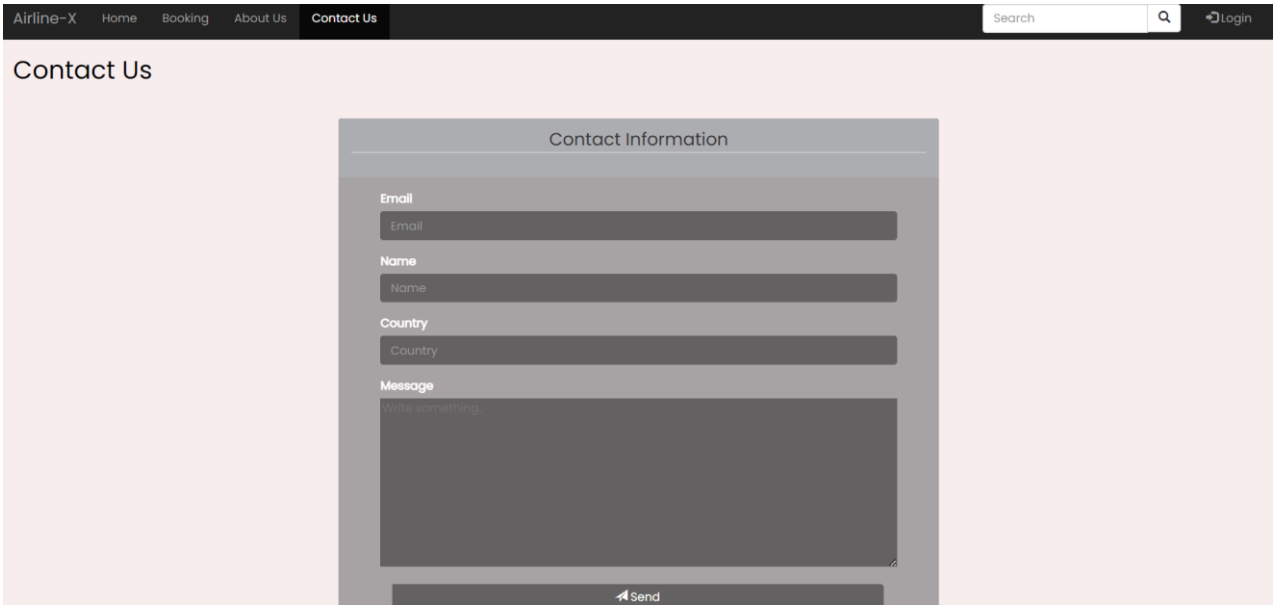
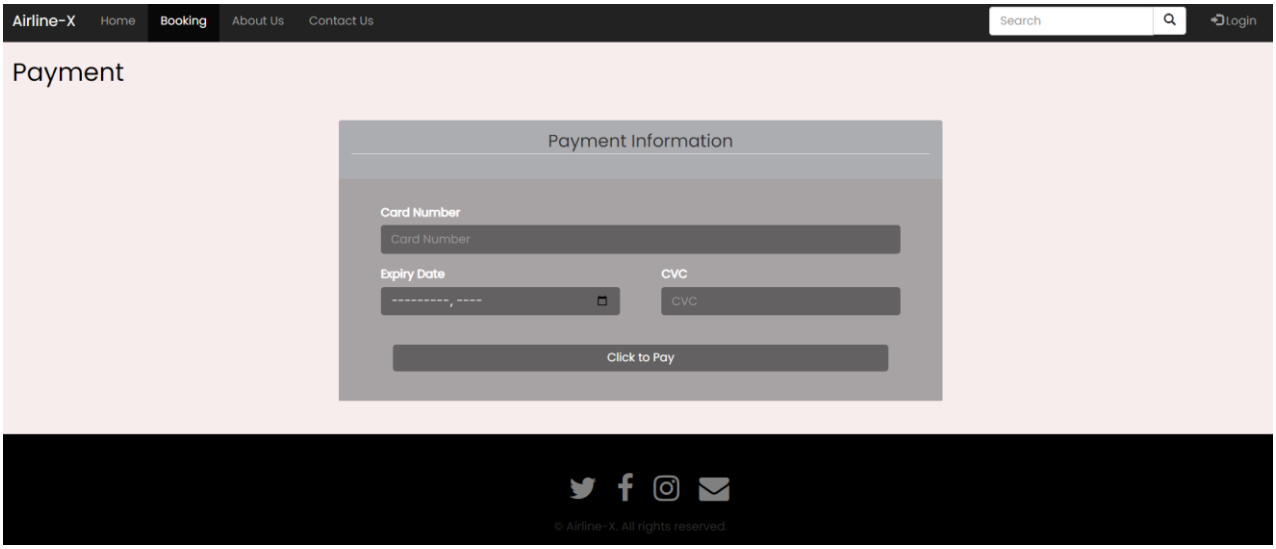
Adults
Children
1
0
Continue

4. Contact Us


Airline-X
Home
Booking
About Us
Contact Us
Search
Login
Contact Us
Contact Information
Email
Email
Name
Name
Country
Country
Message
Write something..
Send

5. Payment Page –

The payment section facilitates secure and hassle-free transactions for users to complete their flight bookings and make payments for reserved seats. It integrates with trusted payment gateways to accept various payment methods, including credit cards, debit cards, and online banking. Users can securely enter their payment details, review transaction summaries, and confirm their bookings with confidence



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