

AIRLINES BOOKING SYSTEM

Report/Writeup

List of reasons/constraints to justify the choice of DBMS.

1. Maintainability : It provides easy usability. It allows database admins to maintain, control, update data into the database easily.

2. Data Structure : As RDBMS stores data in a table format, it is easily understood by the user , for example anybody could easily know when the flight took off and what is the source and destination , fare for specific flight and so on . Data is organized in a structured manner and matches entries by firing queries. Accessing and managing the data becomes easy while working with RDBMS by using the tables to store data in columns and rows.

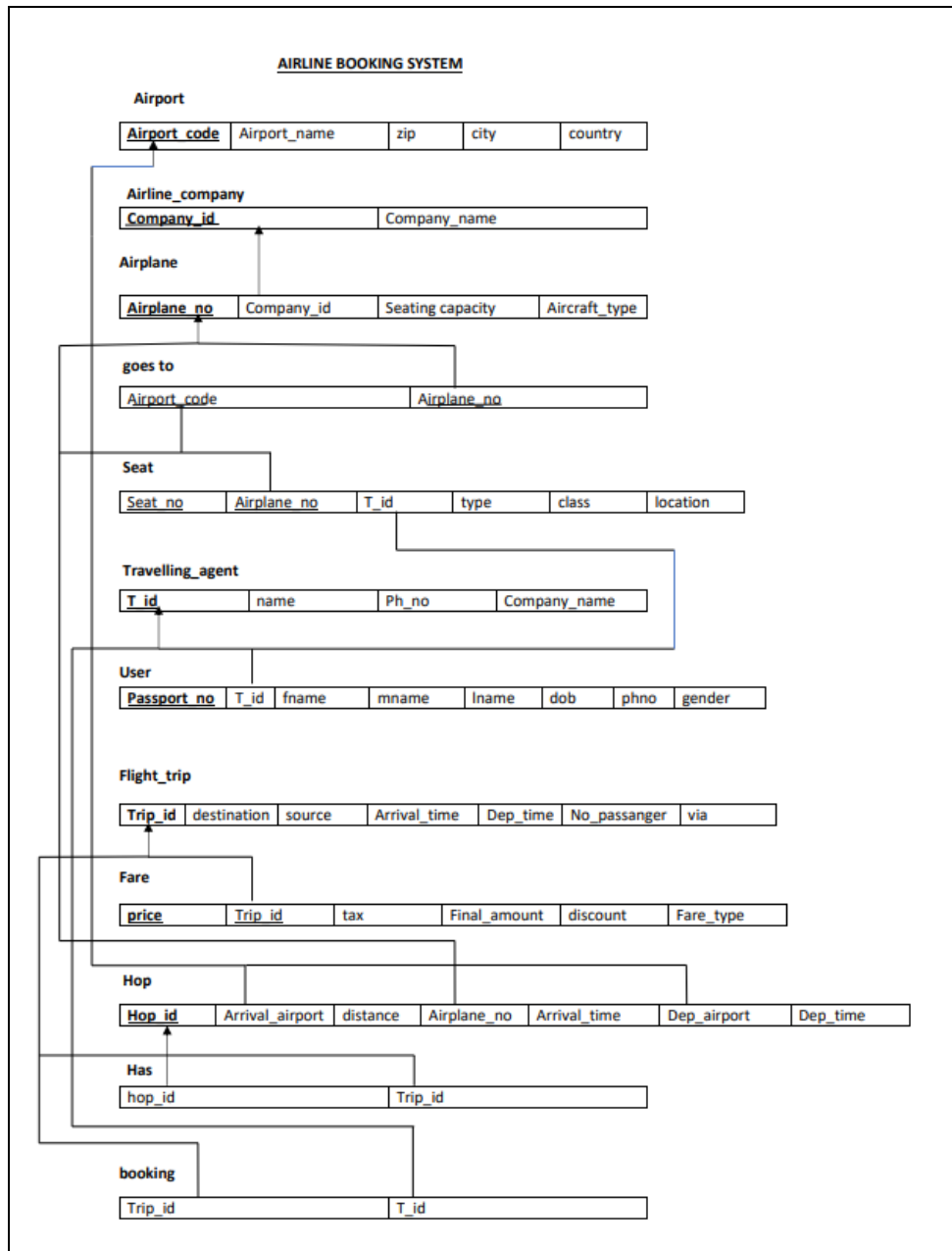
3. Privileges : This feature of RDBMS allows database administrators to control activities over the database. Administrators can give specific access to a user rather than giving all Access. Administrators can also stop user access. So here few access can be restricted to passengers where in granted to travelling agents. RDBMS provides Data Safety. data will be safe when the program crashes by authorization codes, other security layers.

4. Scalability : It can handle any amount of quantities of data uniformly. In RDBMS, indexes are used to sort data and speed up performance.

5. Low Repetition and Redundancy : In a database, the chances of data duplication are quite high as several users use the same database. A DBMS reduces data repetition and redundancy by creating a single data repository accessible by multiple users and minimizing isolated files with repetition.

6. Improved File Consistency : By implementing a database management system, organizations can create a standardized way to use files and ensure consistency of data with other systems and applications. Manipulating and streamlining advanced data management systems is essential.

Relational Schema Diagram



Create Statements .SQL File

```
drop database abs;
create database abs;

\c abs

create table airport
(
    airport_code varchar(4) not null,
    airport_name varchar(20),
    city char(20) not null,
    country char(20) not null,
    zip int not null,
    primary key(airport_code)
);

create table airline_company
(
    company_id varchar(3) not null,
    company_name varchar(20) not null,
    primary key(company_id)
);

create table airplane
(
    airplane_no varchar(4) not null,
    aircraft_type varchar(20) not null,
    seating_capacity int not null,
    company_id varchar(20),

    primary key(airplane_no),
    foreign key(company_id) references airline_company(company_id)
);

create table travelling_agent
(
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        name char(20) not null,
        t_id varchar(20) not null,
        ph_no int not null,
        company_name varchar(20) not null,
        primary key(t_id)
    );

create table Usser
(
    fname char(20) not null,
    mname char(20),
    lname char(20) not null,
    dob date not null,
    ph_no int(10) not null,
    gender char(1) not null,
    passport_id varchar(20) not null,
    t_id varchar(20),

    primary key(passport_id),
    foreign key(t_id) references travelling_agent(t_id)
);

create table seat
(
    seat_no int not null,
    type varchar(20) not null,
    class varchar(15) not null,
    location varchar(20),
    airplane_no varchar(10),
    t_id varchar(20),

    primary key(seat_no, airplane_no),
    foreign key(airplane_no) references airplane(airplane_no),
    foreign key(t_id) references travelling_agent(t_id)
);

```

```

create table flight_trip
(
    source char(20) not null,
    destination char(20) not null,
    via char(20),
    dept_time time not null,
    arrival_time time not null,
    no_of_passengers int,
    trip_id varchar(20) not null,
    primary key(trip_id)
);

create table fare
(
    discount int,
    tax int,
    final_amount decimal not null,
    price int not null,
    fare_type char(20) not null,
    trip_id varchar(20),

    primary key(price),
    foreign key(trip_id) references flight_trip(trip_id)
);

create table goes_to
(
    airport_code varchar(15) not null,
    airplane_no varchar(10) not null,

    foreign key(airport_code) references airport(airport_code),
    foreign key(airplane_no) references airplane(airplane_no)
);

create table booking
(

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    t_id varchar(20) not null,
    trip_id varchar(20) not null,
    PNR char(6) not null,

    foreign key(t_id) references travelling_agent(t_id),
    foreign key(trip_id) references flight_trip(trip_id)
);

create table hop
(
    hop_id varchar(20) not null,
    distance decimal(7,2) not null,
    dept_time time,
    arrival_time time,
    dept_airport varchar(15) not null,
    arrival_airport varchar(15) not null,
    airplane_no varchar(10) not null,

    primary key(hop_id),
    foreign key(arrival_airport) references airport(airport_code),
    foreign key(dept_airport) references airport(airport_code),
    foreign key(airplane_no) references airplane(airplane_no)
);

create table has
(
    hop_id varchar(20) not null,
    trip_id varchar(20) not null,

    foreign key(hop_id) references hop(hop_id),
    foreign key(trip_id) references flight_trip(trip_id)
);

```

Insert Statements .SQL File

```
\c abs

/*INSERT into AIRPORT values(airport_code, airport_name, city, country,
zip)*/
INSERT into AIRPORT values('VIJU','Jammu Airport', 'Jammu', 'India',
190007);
INSERT into AIRPORT values('VAAH','Sardar Vallabhbhai Patel
International Airport', 'Ahmedabad', 'India', 382475);
INSERT into AIRPORT values('VOBG','HAL Airport', 'Bengaluru', 'India',
560017);
INSERT into AIRPORT values('VIDD','Safdarjung Airport', 'New Delhi',
'India', 110003);
INSERT into AIRPORT values('VCCB', 'Batticaloa Airport', 'Batticaloa',
'Srilanka', 30000);
INSERT into AIRPORT values('VCKK', 'Koggala Airport', 'Galle',
'Srilanka', 80000);
INSERT into AIRPORT values('VGRJ', 'Shah Makhdum Airport', 'Rajshahi',
'Bangladesh', 6202);
INSERT into AIRPORT values('VHSS', 'Shun Tak Heliport', 'Sheung Wan',
'Hong Kong', 999077);
INSERT into AIRPORT values('VNKT', 'Tribhuvan International Airport',
'Kathmandu', 'Nepal', 44600);
INSERT into AIRPORT values('VQPR', 'Paro Airport', 'Paro', 'Bhutan',
12002);
INSERT into AIRPORT values('VLPS', 'Pakse Airport', 'Pakse', 'Laos',
1600);

/*INSERT into AIRLINE_COMPANY values(company_id, company_name);*/
INSERT into AIRLINE_COMPANY values('BML', 'Bismillah Airlines');
INSERT into AIRLINE_COMPANY values('BAV', 'Bay Aviation Ltd');
INSERT into AIRLINE_COMPANY values('DRK', 'Druk Air');
INSERT into AIRLINE_COMPANY values('CPA', 'Cathay Pacific');
INSERT into AIRLINE_COMPANY values('HKG', 'Government Flying Service');
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INSERT into AIRLINE_COMPANY values('LEP', 'Air Costa');
INSERT into AIRLINE_COMPANY values('IGO', 'IndiGo');
INSERT into AIRLINE_COMPANY values('PMW', 'Paramount Airways');
INSERT into AIRLINE_COMPANY values('AMU', 'Air Macau');
INSERT into AIRLINE_COMPANY values('LAO', 'Lao Airlines');
INSERT into AIRLINE_COMPANY values('CIN', 'Cinnamon Air');

/*INSERT into AIRPLANE values(airplane_no, aircraft_type, seating
capaity, company_id);*/
INSERT into AIRPLANE values('A158', NULL, 4000, 'BML');
INSERT into AIRPLANE values('B37M', NULL, 3500, 'BAV');
INSERT into AIRPLANE values('B748', NULL, 5900, 'DRK');
INSERT into AIRPLANE values('D328', NULL, 1100, 'CPA');
INSERT into AIRPLANE values('CONI', NULL, 900, 'HKG');
INSERT into AIRPLANE values('T210', NULL, 2400, 'LEP');
INSERT into AIRPLANE values('BL8', NULL, 1600, 'IGO');
INSERT into AIRPLANE values('E190', NULL, 4600, 'PMW');
INSERT into AIRPLANE values('F2TH', NULL, 2000, 'AMU');
INSERT into AIRPLANE values('GA8', NULL, 3100, 'LAO');
INSERT into AIRPLANE values('DOVE', NULL, 1500, 'CIN');

/*INSERT into TRAVELLING_AGENT values(name, travel_id, ph_no,
company_name)*/
INSERT into TRAVELLING_AGENT values('Raj', 'TA128101', 9182638213,
'Yatra');
INSERT into TRAVELLING_AGENT values('Hank', 'TA273518', 7162643927,
'Cheapflights');
INSERT into TRAVELLING_AGENT values('Jones', 'TA836374', 8263411032,
'Skyscanner');
INSERT into TRAVELLING_AGENT values('Karthik', 'TA813576', 9173428819,
'Kiwi.com');
INSERT into TRAVELLING_AGENT values('Bala', 'TA528169', 6172539271,
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'LowFares.com');
INSERT into TRAVELLING_AGENT values('Peter', 'TA252611', 9327436222,
'Goibibo');
INSERT into TRAVELLING_AGENT values('Mike', 'TA826329', 8299917238,
'Makemytrip');
INSERT into TRAVELLING_AGENT values('Shaurya', 'TA361892', 9122910199,
'Kesari Tours');
INSERT into TRAVELLING_AGENT values('Chen', 'TA173023', 8279918201,
'Expedia');
INSERT into TRAVELLING_AGENT values('Debarghya', 'TA162416', 7771912435,
'Priceline');
INSERT into TRAVELLING_AGENT values('Abe', 'TA817253', 6618181717,
'Cheapflights');

/*INSERT into USER values(fname, mname, lname, dob, ph_no, gender,
passport_no, travel_id)*/
INSERT into USSER values('Roseline', NULL, 'Matthew', '1999-02-05',
9928183641, 'F', 'A2938101', 'TA128101');
INSERT into USSER values('Sriranga', 'S', 'K', '1971-05-09', 8837856281,
'M', '19273518', 'TA273518');
INSERT into USSER values('Bhumika', 'M', 'S', '1985-11-16', 8777272622,
'F', 'M1836374', 'TA836374');
INSERT into USSER values('Simon', 'H', 'Peter', '2001-09-11',
6628367188, 'M', 'B2813576', 'TA813576');
INSERT into USSER values('Mohammad', NULL, 'Talha', '2000-07-23',
9992837599, 'M', '62528169', 'TA528169');
INSERT into USSER values('Anika', NULL, 'Sharma', '1994-04-29',
7199976567, 'F', 'H7252611', 'TA252611');
INSERT into USSER values('Debarghya', 'S', 'Bose', '1999-11-25',
6978179763, 'M', 'X1826329', 'TA826329');
INSERT into USSER values('Sonakshi', NULL, 'Dixit', '1964-08-13',
9739389992, 'F', '28361892', 'TA361892');
INSERT into USSER values('Agasthya', NULL, 'Kasthuri', '2005-06-01',
8199181772, 'M', 'A9173023', 'TA173023');

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INSERT into USSER values('Akshay', 'A', 'Law', '1997-01-18', 8771871898,
'M', 'N8162416', 'TA162416');
INSERT into USSER values('Rashmi', NULL, 'Kousalya', '2001-12-14',
9188277163, 'F', 'C8817253', 'TA817253');

/*INSERT into SEAT values(seat_no, type, class, location, airplane_no,
travel_id)*/
INSERT into SEAT values(45, 'seater', 'Economy', 'Aisle', 'A158',
'TA128101');
INSERT into SEAT values(69, 'sleeper', 'Business', 'Window', 'B37M',
'TA162416');
INSERT into SEAT values(236, 'couch', 'Business', 'Aisle', 'B748',
'TA173023');
INSERT into SEAT values(123, 'sleeper', 'First', 'Window', 'D328',
'TA252611');
INSERT into SEAT values(164, 'seater', 'Business', 'Window', 'CONI',
'TA273518');
INSERT into SEAT values(97, 'seater', 'Business', 'Aisle', 'T210',
'TA361892');
INSERT into SEAT values(61, 'seater', 'Economy', 'Middle', 'BL8',
'TA528169');
INSERT into SEAT values(401, 'couch', 'First', 'Aisle', 'E190',
'TA813576');
INSERT into SEAT values(10, 'seater', 'Economy', 'Middle', 'F2TH',
'TA817253');
INSERT into SEAT values(538, 'sleeper', 'Business', 'Middle', 'GA8',
'TA836374');
INSERT into SEAT values(379, 'couch', 'First', 'Window', 'DOVE',
'TA826329');

/*INSERT into FLIGHT_TRIP values(source, dest, via, dept_time,
arrival_time, no_of_passengers, trip_id)*/
INSERT into FLIGHT_TRIP values('VIJU', 'VLPS', NULL, '13:00:00',
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'21:20:00', 2655, 'T123');
INSERT into FLIGHT_TRIP values('VOBG', 'VHSS', NULL, '19:30:00',
'02:00:00', 1829, 'T261');
INSERT into FLIGHT_TRIP values('VAAH', 'VNKT', NULL, '23:40:00',
'18:30:00', 923, 'T433');
INSERT into FLIGHT_TRIP values('VNKT', 'VIDD', NULL, '06:00:00',
'12:15:00', 5432, 'T728');
INSERT into FLIGHT_TRIP values('VLPS', 'VQPR', NULL, '11:45:00',
'14:30:00', 4276, 'T153');
INSERT into FLIGHT_TRIP values('VGRJ', 'VOBG', NULL, '08:10:00',
'13:00:00', 3701, 'T192');
INSERT into FLIGHT_TRIP values('VIDD', 'VCKK', NULL, '15:25:00',
'19:55:00', 2200, 'T839');
INSERT into FLIGHT_TRIP values('VHSS', 'VLPS', NULL, '21:20:00',
'04:10:00', 799, 'T523');
INSERT into FLIGHT_TRIP values('VCCB', 'VGRJ', NULL, '05:00:00',
'10:35:00', 3302, 'T222');
INSERT into FLIGHT_TRIP values('VQPR', 'VOBG', NULL, '17:50:00',
'22:40:00', 1220, 'T437');
INSERT into FLIGHT_TRIP values('VCKK', 'VAAH', NULL, '09:35:00',
'12:25:00', 2937, 'T325');

/*INSERT into FARE values(discount, tax, final_amt, price, fare_type,
trip_id)*/
INSERT into FARE values(100.00, 45.53, 1645.53, 1700.00, 'cash',
'T123');
INSERT into FARE values(150.00, 53.22, 1903.22, 2000.00, 'online',
'T261');
INSERT into FARE values(90.00, 26.49, 1336.49, 1400.00, 'online',
'T433');
INSERT into FARE values(125.00, 57.03, 1732.03, 1800.00, 'card',
'T728');
INSERT into FARE values(110.00, 49.77, 2039.77, 2100.00, 'card',

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'T153');
INSERT into FARE values(200.00, 91.04, 2391.04, 2500.00, 'online',
'T192');
INSERT into FARE values(80.00, 32.16, 1552.16, 1600.00, 'cash', 'T839');
INSERT into FARE values(75.00, 23.98, 1168.98, 1200.00, 'online',
'T523');
INSERT into FARE values(125.00, 56.12, 1681.12, 1750.00, 'cash',
'T222');
INSERT into FARE values(175.00, 69.25, 2194.25, 2300.00, 'card',
'T437');
INSERT into FARE values(125.00, 57.13, 1732.13, 1820.00, 'card',
'T325');

/*INSERT into GOES_TO values(airport_code, airplane_no)*/
INSERT into GOES_TO values('VIJU', 'A158');
INSERT into GOES_TO values('VAAH', 'B37M');
INSERT into GOES_TO values('VOBG', 'B748');
INSERT into GOES_TO values('VIDD', 'D328');
INSERT into GOES_TO values('VCCB', 'CONI');
INSERT into GOES_TO values('VCKK', 'T210');
INSERT into GOES_TO values('VGRJ', 'BL8');
INSERT into GOES_TO values('VHSS', 'E190');
INSERT into GOES_TO values('VNKT', 'F2TH');
INSERT into GOES_TO values('VQPR', 'GA8');
INSERT into GOES_TO values('VLPS', 'GA8');

/*INSERT into BOOKING values(travel_id, trip_id, PNR)*/
INSERT into BOOKING values('TA128101', 'T123', 'X37Q1C');
INSERT into BOOKING values('TA273518', 'T261', 'HS829V');
INSERT into BOOKING values('TA836374', 'T433', 'B927SH');
INSERT into BOOKING values('TA813576', 'T728', 'K88DGA');
INSERT into BOOKING values('TA528169', 'T153', 'SI0123');
INSERT into BOOKING values('TA252611', 'T192', 'UAG237');
INSERT into BOOKING values('TA826329', 'T839', '27GA7W');

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INSERT into BOOKING values('TA361892', 'T523', '81GAJS');
INSERT into BOOKING values('TA173023', 'T222', 'V18WYB');
INSERT into BOOKING values('TA162416', 'T437', '9XBAU2');
INSERT into BOOKING values('TA817253', 'T325', 'U9DCB6');

/*INSERT into HOP values(hop_id, distance, dep_time, arrival_time,
dep_airport, arrival_airport, airplane_no)*/
INSERT into HOP values('A122', 1235, '13:00:00', '15:20:00', 'VIJU',
'VAAH', 'A158');
INSERT into HOP values('B817', 967, '19:30:00', '22:00:00', 'VAAH',
'VOBG', 'B37M');
INSERT into HOP values('H412', 843, '23:40:00', '03:30:00', 'VOBG',
'VIDD', 'B748');
INSERT into HOP values('B019', 1249, '06:00:00', '10:15:00', 'VIDD',
'VCCB', 'D328');
INSERT into HOP values('L726', 2013, '11:45:00', '14:30:00', 'VCCB',
'VCK', 'CONI');
INSERT into HOP values('N661', 1651, '08:10:00', '09:00:00', 'VCK',
'VGRJ', 'T210');
INSERT into HOP values('I915', 702, '15:25:00', '16:55:00', 'VGRJ',
'VHSS', 'BL8');
INSERT into HOP values('Y524', 911, '21:20:00', '01:10:00', 'VHSS',
'VNKT', 'E190');
INSERT into HOP values('C880', 1393, '05:00:00', '08:35:00', 'VNKT',
'VQPR', 'F2TH');
INSERT into HOP values('D911', 1086, '17:50:00', '18:40:00', 'VQPR',
'VLPS', 'GA8');
INSERT into HOP values('J333', 1198, '09:35:00', '11:25:00', 'VLPS',
'VIJU', 'DOVE');

/*INSERT into HAS values(hop_id, trip_id)*/
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INSERT into HAS values('A122', 'T123');
INSERT into HAS values('B817', 'T261');
INSERT into HAS values('H412', 'T433');
INSERT into HAS values('B019', 'T728');
INSERT into HAS values('L726', 'T153');
INSERT into HAS values('N661', 'T192');
INSERT into HAS values('I915', 'T839');
INSERT into HAS values('Y524', 'T523');
INSERT into HAS values('C880', 'T222');
INSERT into HAS values('D911', 'T437');
INSERT into HAS values('J333', 'T325');

```

Member Contributions

Name SRN	Distribution of work
Sahana G PES1UG19CS412	Report, Relation schema, Research on tools and DBMS
Pavana PES1UG20CS822	Relation schema, Research on tools and DBMS
Sathi Sreyahsri PES1UG19CS434	Create statements, Research on tools and DBMS
Sanjana PES1UG19CS431	Inserting values, Research on tools and DBMS