Intoduction

The purpose of this project is to design a data management system for booking and flight schedule information for airlines. The system allows the user to view different flights available at different times on a given date and allows bookings, modifications or cancellations but does not provide a cost of booking. It will manage customer information, booking enquiries and reservations. The user can view the status of a flight and be provided with time to time current information related to airline schedules.

Table structure for airline.

```
CREATE TABLE ‘airlines’ (
  ‘airline_id’ int(11) NOT NULL,
  ‘airline_at_id’ int(11) NOT NULL,
  ‘airline_name’ varchar(255) NOT NULL,
  ‘airline_no’ varchar(255) NOT NULL,
  ‘airline_from’ int(11) NOT NULL,
  ‘airline_departure’ varchar(255) NOT NULL,
  ‘airline_to’ int(11) NOT NULL,
  ‘airline_arrival’ varchar(255) NOT NULL,
  ‘airline_travel_time’ varchar(255) NOT NULL
);
```

Table structure for airline type

```
CREATE TABLE ‘airlines’ (
  ‘at_id’ int(11) NOT NULL,
  ‘at_name’ int(11) NOT NULL)
```

Table Structure for booking

```
CREATE TABLE ‘booking’(
‘booking_id’ int(11) NOT NULL,
‘booking_user_id’ varchar(255) NOT NULL,
‘booking_route_id’ varchar(255) NOT NULL,
‘booking_date’ varchar(255) NOT NULL,
‘booking_total¬_fare’ varchar(255) NOT NULL,
‘booking_journey_date’ varchar(255) NOT NULL,
‘booking_route_id’ varchar(255) NOT NULL,
‘booking_seat_type’ varchar(255) NOT NULL,
‘booking_status’ varchar(255) NOT NULL DEFAULT ‘0’,)
```

Table structure for city

```
CREATE TABLE ‘city’(
  ‘city_id’ int(11) NOT NULL,
  ‘city_name’ varchar(45) NOT NULL
  )
```

Table structure for passenger

```
CREATE TABLE ‘passenger’ (
  ‘passenger_id’ int(11) NOT NULL,
  ‘passenger_booking_id’ varchar(255) NOT NULL,
  ‘passenger_type’ varchar(255) NOT NULL,
  ‘passenger_name’ varchar(255) NOT NULL,
  ‘passenger_gender’ varchar(255) NOT NULL,
  ‘passenger_age’ varchar(255) NOT NULL,
  ‘passenger_booking_id’ varchar(255) NOT NULL);
```

Table structure for route

```
CREATE TABLE ‘route’ (
  ‘route_id’ int(11) NOT NULL,
  ‘route_airlines_id’ varchar(255) NOT NULL,
  ‘route _from_city’ varchar(255) NOT NULL,
  ‘route _from_arrival’ varchar(255) NOT NULL,
  ‘route _from_departure’ varchar(255) NOT NULL,
  ‘route _to_city’ varchar(255) NOT NULL,
  ‘route _economy_fare’ varchar(255) NOT NULL,
  ‘route _business_fare’ varchar(255) NOT NULL
);
```

Adding Primary Keys

- We add primary keys to all our tables , this process only works if we defined the Primary keys as NOT NULL.

```
ALTER TABLE ‘airline_type’ ADD PRIMARY KEY (‘at_id’);
ALTER TABLE ‘booking’ ADD PRIMARY KEY (‘booking_id’);
ALTER TABLE ‘city’ ADD PRIMARY KEY (‘city_id’);
ALTER TABLE ‘latest_booking’ ADD PRIMARY KEY (‘lb_id’);
ALTER TABLE ‘passenger’ ADD PRIMARY KEY (‘passenger_id’);
ALTER TABLE ‘route’ ADD PRIMARY KEY (‘route_id’);
```

10 Functions of choice

--Select total number of records of Airline:

```
SELECT (*) AS 'Total Count' FROM 'airline'
```

--Select maximum travel distance airlines record:

```
SELECT MAX('airline_total_distance') AS 'Maximum Distance' , airline.* FROM 'airline'
```

--Select maximum travel distance airlines record:

```
SELECT MIN('airline_total_distance') AS 'Minimum Distance' , airline.* FROM 'airline'
```

--Select average travel distance airlines record:

```
SELECT AVG('airline_total_distance') AS 'Average Distance' , airline.* FROM 'airline'
```

--Convert all airline names to Upper Case

```
SELECT UPPER('airline_name') FROM 'airline' WHERE 1
```

--Convert all airline names to Lower Case

```
SELECT LOWER('airline_name') FROM 'airline' WHERE 1
```

--Select all airline name and number and concat with ','

```
SELECT CONCAT('airline_name' ,',''airline_number') FROM 'airline' WHERE 1
```

--Remove leading trail and spaces from airline name

```
SELECT TRIM('airline_name') FROM 'airline' WHERE 1
```

--Fetch only starting 3 characters of airline name

```
SELECT SUBSTR('airline_name',1,3) FROM 'airline' WHERE 1
```

--Reverse the name of each airlines:

```
SELECT REVERSE ('airline') FROM airlines WHERE 1
```

Complicated Select Statements

```
SELECT COUNT(*) AS 'TotalCount' ,airline.* FROM airline
WHERE airline_from = 2
GROUP BY airline_at_id
HAVING TotalCount >=3
ORDER BY airline_name LIMIT,0,3
```

Join Operators

--Inner Join

```
SELECT *
FROM airline a
INNER JOIN route r on r.route_airline_id = a.airline_id;
```

--Perform a query and sub query

```
SELECT * FROM 'airline'  WHERE airline_id IN (SELECT route_airline_id FROM route)
```

--Create a users with privileges

Create User Admin with all permission:

```
CREATE USER 'admin'@'localhost' IDENTIFIED BY 'test';
GRANT ALL PRIVALLEDGES ON * . * TO 'admin'@'localhost';
```

--Drop All Users:

```
DROP USER 'admin'@'localhost';
```

PERFORM a COMMIT and ROLLBACK operation:

```
START TRANSACTION:
UPDATE 'airline' SET airline_total_distance=9000 WHERE 1;
COMMIT;
```