

# RSS company

Booking a flight easily

# 1- Scenario

**RSS** is a company which help you to find and booking flight, to do that its collect personal information for each **passenger** characterized by Passenger No (unique), full-name, country **Also we need** , phone number and email.

Passengers can book 1 or more flights described by booking no. and must have a seat on plane

Every **flight** has this information: flight no(unique), take off site, landing site, number of passengers, pilot, and airplane no.

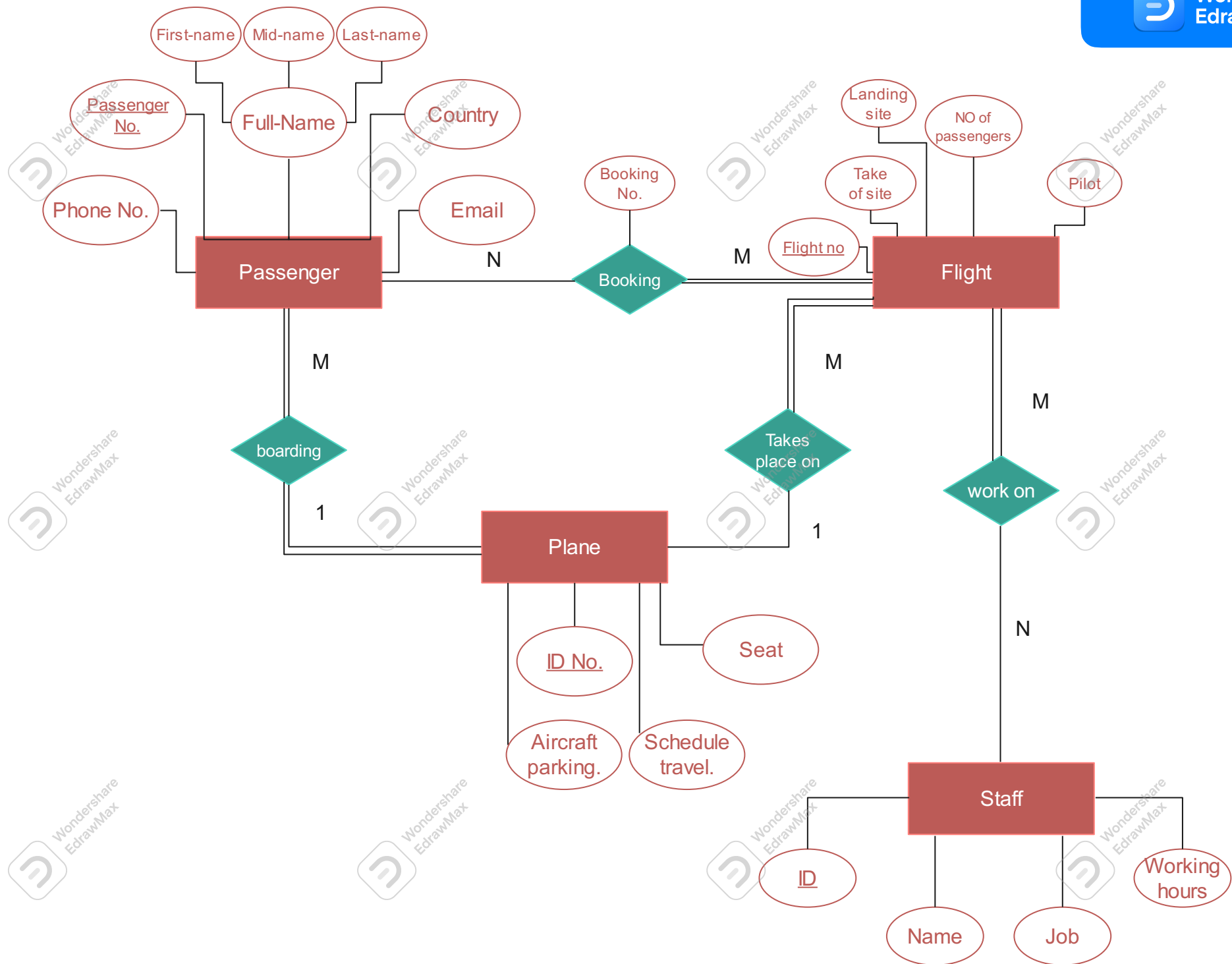
Each flight takes place on one airplane.

Every flight has a **staff** work on it. Each member of the staff has this information: Id(unique), name, job, and working hours.

Each **plane** has a unique ID no, aircraft parking, schedule travel, Number of Seat,

Every plane has only 4 trips-flights-per day,

## 2- E-R diagram



Explanations of concept on ER Diagram:

### 1- Type of Attributes:

A. We have 1 (composite Attributes),  
full-name > (first name - Middle name - Last Name)

B. The rest of attributes are (Single Attributes)

### 2- We Don't have any weak Entities.

### 3- Relationships: (All Relationships Are binary)

- Each flight has many passengers booked on it (total), and many passengers can book many flights (partial).
- Each plane has many passengers boarded on it (total), and each passenger can board on one plane at a time (total).
- Each flight takes place on one plane (total), and each plane has many flights take place on it (partial).
- Each flight has many staff members work on it (total), and each staff member can work on many flights (partial).

## 2- Schema

## PASSENGER

<u>Passenger No</u>	Phone No	First name	Mid name	Last name	Country	Email	Plane_NO	Flight NO
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## PLANE

<u>Plane_NO</u>	Aircraft parking	Travel schedule	Seat	Flight NO
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## FLIGHT

<u>Flight No</u>	Take of site	Landing site	NO of passengers	Pilot	Plane_NO
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## BOOKING FLIGHT

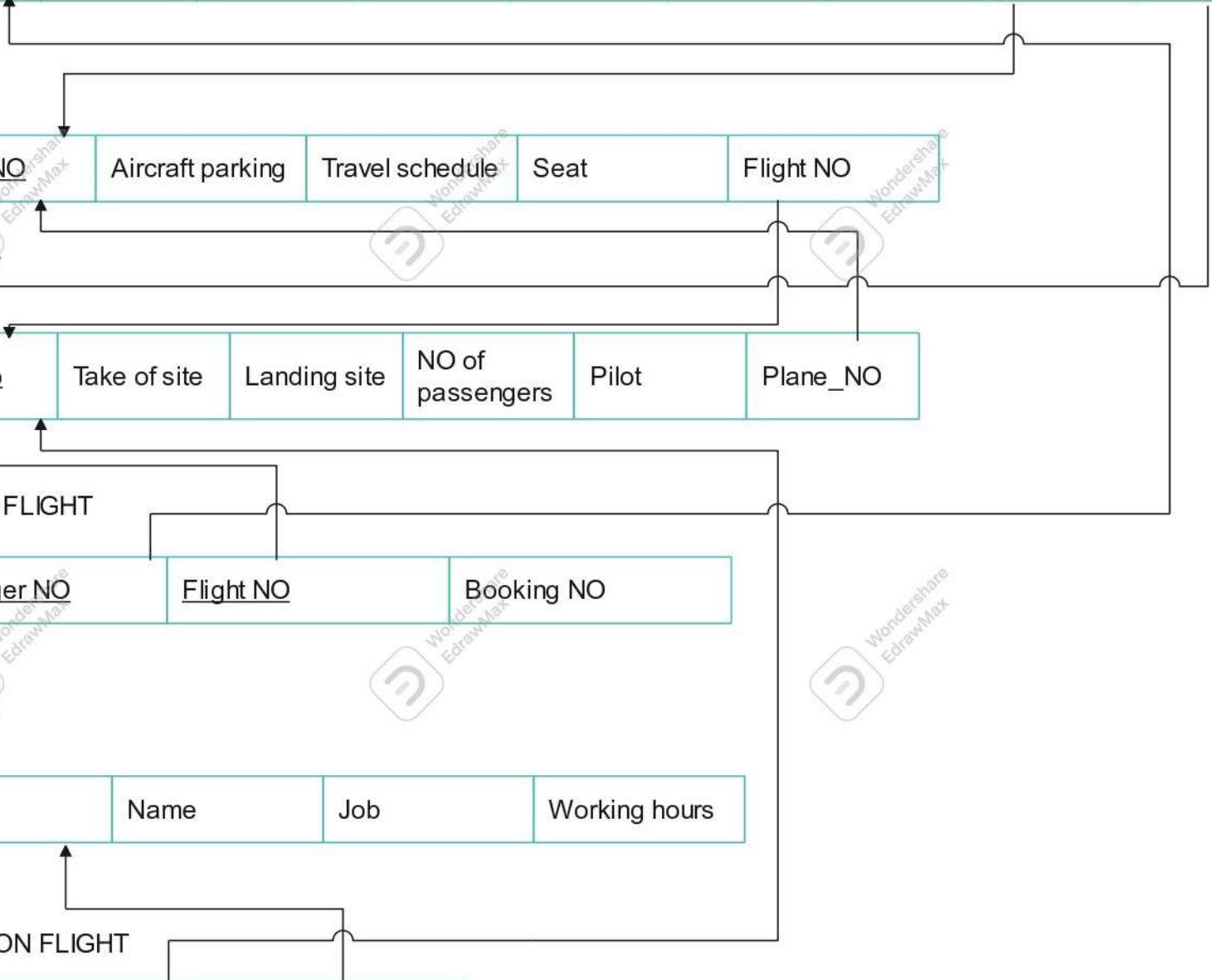
<u>Passenger NO</u>	<u>Flight NO</u>	Booking NO
---------------------	------------------	------------

## STAFF

<u>ID</u>	Name	Job	Working hours
-----------	------	-----	---------------

## WORK ON FLIGHT

<u>Flight NO</u>	<u>Staff ID</u>
------------------	-----------------





# 3- Normalization

We do it after we built a database By SQL

PASSENGER

<u>Pssenger_NO</u>	Phone NO	First name	Mid name	Last name	Country	Email	Plane_NO	Flight_NO
--------------------	----------	------------	----------	-----------	---------	-------	----------	-----------

1st form

Since each passenger may book more than one flight so Flight\_NO and Plane\_NO are multivalued

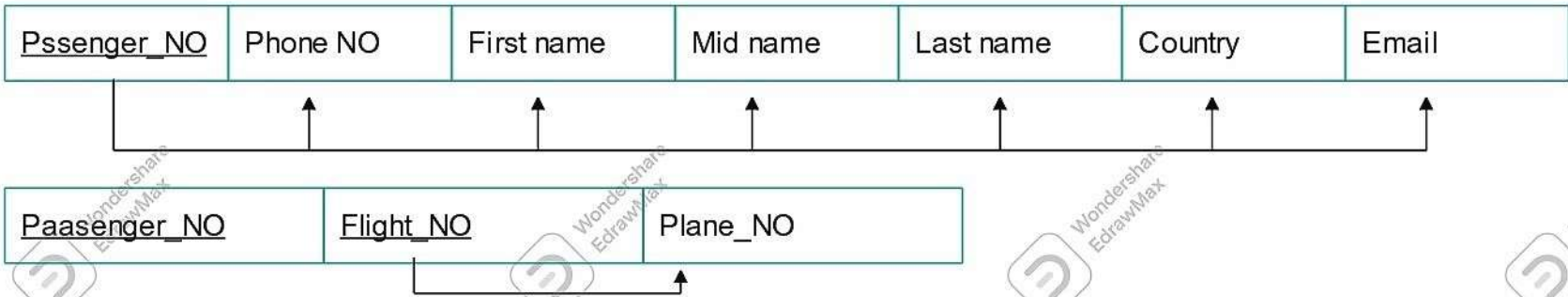
R1

<u>Pssenger_NO</u>	Phone NO	First name	Mid name	Last name	Country	Email
--------------------	----------	------------	----------	-----------	---------	-------

R2

<u>Paasenger_NO</u>	<u>Flight_NO</u>	Plane_NO
---------------------	------------------	----------

2nd form&3rd form



Since the plane\_NO does not depend on the whole key so there is an partial dependency

R3

<u>Passenger_NO</u>	<u>Flight_NO</u>
---------------------	------------------

R4

<u>Flight_NO</u>	Plane_NO
------------------	----------

Since the attributes depend on nothing but the key so it's on the 3rd form

The final result is:R1,R3,R4

PLANE

<u>Plane_NO</u>	Aircraft parking	Trave Schedual	Seat	Flight_NO
-----------------	------------------	----------------	------	-----------

1st form

Since each plane have many Flight\_NO and Tavel schedual so they are multivalued

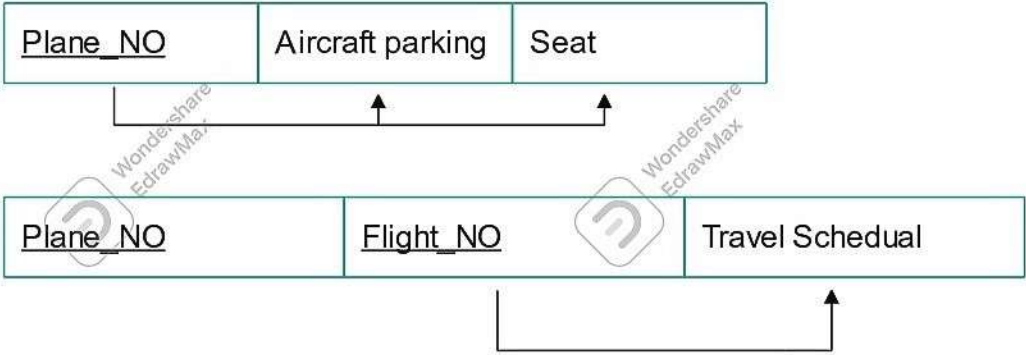
R1

<u>Plane_NO</u>	Aircraft parking	Seat
-----------------	------------------	------

R2

<u>Plane_NO</u>	Flight_NO	Travel Schedual
-----------------	-----------	-----------------

2nd form &3rd form



Since the Travel schedual does not depend on the whole key so there is an partial dependency

R3

<u>Plane_NO</u>	<u>Flight_NO</u>
-----------------	------------------

R4

<u>Flight_NO</u>	Travel Schedual
------------------	-----------------

Since the attributes depend on nothing but the key so it's on the third form

The final result is:R1,R3,R4

Flight

<u>FlightNo</u>	Take of site	Landing site	NO of passengers	Pilot	Plane_NO
-----------------	--------------	--------------	------------------	-------	----------

Since there are no multivalued,composite,nested relations so it's in the 1st form ,and all the attributes depend on the whole key so it's in the 2nd form, and the attributes depend on nothing but the key so it's on the 3rd form

BOOKING FLIGHT

<u>Passenger NO</u>	<u>Flight NO</u>	Booking NO
---------------------	------------------	------------

Since there are no multivalued,composite,nested relations so it's in the 1st form ,and all the attributes depend on the whole key so it's in the 2nd form, and the attributes depend on nothing but the key so it's on the 3rd form

Staff

<u>ID</u>	Name	Job	Working hours
-----------	------	-----	---------------

Since there are no multivalued,composite,nested relations so it's in the 1st form ,and all the attributes depend on the whole key so it's in the 2nd form, and the attributes depend on nothing but the key so it's on the 3rd form

WORK ON FLIGHT

<u>Flight NO</u>	<u>Staff ID</u>
------------------	-----------------

Since there are no multivalued,composite,nested relations so it's in the 1st form ,and all the attributes depend on the whole key so it's in the 2nd form, and the attributes depend on nothing but the key so it's on the 3rd form

# 4- SQL

We built database by SQL before we do Normalization on it

```

CREATE TABLE PASSENGER (
PASSENGER_NO CHAR(10),
PHONE_NO CHAR(10),
FIRST_NAME VARCHAR2(20) NOT NULL,
MID_NAME VARCHAR2(20),
LAST_NAME VARCHAR2(20) NOT NULL,
COUNTRY VARCHAR(50) NOT NULL,
EMAIL VARCHAR(50) NOT NULL,
PLANE_NO CHAR(6),
FLIGHT_NO CHAR(6),
CONSTRAINT PK_PASSENGER_NO PRIMARY KEY(PASSENGER_NO),
CONSTRAINT CH_PLANE_NO CHECK (EMAIL LIKE '%@%')
);

```

```

1 CREATE TABLE PASSENGER (
2 PASSENGER_NO CHAR(10),
3 PHONE_NO CHAR(10),
4 FIRST_NAME VARCHAR2(20) NOT NULL,
5 MID_NAME VARCHAR2(20),
6 LAST_NAME VARCHAR2(20) NOT NULL,
7 COUNTRY VARCHAR(50) NOT NULL,
8 EMAIL VARCHAR(50) NOT NULL,
9 PLANE_NO CHAR(6),
10 FLIGHT_NO CHAR(6),
11
12 CONSTRAINT PK_PASSENGER_NO PRIMARY KEY(PASSENGER_NO),
13 CONSTRAINT UK_PLANE_NO UNIQUE(PLANE_NO),
14 CONSTRAINT UK_FLIGHT_NO UNIQUE(FLIGHT_NO),
15 CONSTRAINT CH_PLANE_NO CHECK (EMAIL LIKE '%@%')
16 );
17
18 CREATE TABLE PLANE (
19 PLANE_NO CHAR(6),
20 AIR_PARKING VARCHAR2(50) NOT NULL,
21 TRAVEL_SCHEDULE TIMESTAMP,
22 SEAT VARCHAR(6),
23 FLIGHT_NO CHAR(6),
24
25 CONSTRAINT PK_PLANE_NO PRIMARY KEY(PLANE_NO),
26 CONSTRAINT UK_SEAT UNIQUE(SEAT),
27 CONSTRAINT UK_AIR_PARKING UNIQUE(AIR_PARKING)
28 );
29
30 CREATE TABLE FLIGHT (
31 FLIGHT_NO CHAR(6),
32 TAKE_SITE VARCHAR2(50) NOT NULL,
33 LANDING_SITE VARCHAR2(50) NOT NULL,
34 PASSENGER_NUMBER VARCHAR2(10),
35 PLANE_NO CHAR(6),
36
37 CONSTRAINT PK_FLIGHT_NO PRIMARY KEY(FLIGHT_NO)
38 );
39
40 CREATE TABLE BOOKING_FLIGHT (

```

```

insert into PASSENGER
(PASSENGER_NO, PHONE_NO, FIRST_NAME, MID_NAME, LAST_NAME, COUNTRY, EMAIL, PLANE_NO, FLIGHT_NO)
values
('1223334444', '0522222222', 'Asmaa', 'Ahmad', 'Anas', 'Kowait', 'Asamaa@gmail.com', '012345', '3')
insert into PASSENGER
(PASSENGER_NO, PHONE_NO, FIRST_NAME, MID_NAME, LAST_NAME, COUNTRY, EMAIL, PLANE_NO, FLIGHT_NO)
values
('1223335555', '0533333333', 'Badreiyah', 'Badr', 'Bandar', 'Qatar', 'Badreiyah@gmail.com', '012345', '4')
insert into PASSENGER
(PASSENGER_NO, PHONE_NO, FIRST_NAME, MID_NAME, LAST_NAME, COUNTRY, EMAIL, PLANE_NO, FLIGHT_NO)
values
('1223336666', '0544444444', 'Tala', 'Tamer', 'Mohammad', 'Emerates', 'Tala@gmail.com', '012346', '3')

select* from PASSENGER;

```

PASSENGER_NO	PHONE_NO	FIRST_NAME	MID_NAME	LAST_NAME	COUNTRY	EMAIL	PLANE_NO	FLIGHT_NO
1223335555	0533333333	Badreiyah	Badr	Bandar	Qatar	Badreiyah@gmail.com	012345	4
1223336666	0544444444	Tala	Tamer	Mohammad	Emerates	Tala@gmail.com	012346	3
1223334444	0522222222	Asmaa	Ahmad	Anas	Kowait	Asamaa@gmail.com	012345	3



```

CREATE TABLE PLANE (
    PLANE_NO CHAR(6),
    AIR_PARKING VARCHAR2(50) NOT NULL,
    TRAVEL_SCHEDULE TIMESTAMP,
    SEAT VARCHAR2(4),
    FLIGHT_NO CHAR(6),

    CONSTRAINT PK_PLANE_NO PRIMARY KEY(PLANE_NO),
    CONSTRAINT UN_SEAT UNIQUE(SEAT),
    CONSTRAINT UN_AIR_PARKING UNIQUE(AIR_PARKING)
);

```

```

18 CREATE TABLE PLANE (
19     PLANE_NO CHAR(6),
20     AIR_PARKING VARCHAR2(50) NOT NULL,
21     TRAVEL_SCHEDULE TIMESTAMP,
22     SEAT VARCHAR2(4),
23     FLIGHT_NO CHAR(6),
24
25     CONSTRAINT PK_PLANE_NO PRIMARY KEY(PLANE_NO),
26     CONSTRAINT UN_SEAT UNIQUE(SEAT),
27     CONSTRAINT UN_AIR_PARKING UNIQUE(AIR_PARKING)
28 );
29
30 CREATE TABLE FLIGHT (
31     FLIGHT_NO CHAR(6),
32     TAKE_SITE VARCHAR2(50) NOT NULL,
33     LANDING_SITE VARCHAR2(50) NOT NULL,
34     PASSENGERS_NUMBER VARCHAR2(10),
35     PLANE_NO CHAR(6),
36
37     CONSTRAINT PK_FLIGHT_NO PRIMARY KEY(FLIGHT_NO)
38 );
39
40 CREATE TABLE BOOKING_FLIGHT (

```

Table created.

insert into PLANE

(PLANE\_NO, AIR\_PARKING, TRAVEL\_SCHEDULE, SEAT, FLIGHT\_NO)  
values

('012346', 'Gate 2-Right side', '12-aug-14 02.30.22.178', '300', '3')

insert into PLANE

(PLANE\_NO, AIR\_PARKING, TRAVEL\_SCHEDULE, SEAT, FLIGHT\_NO)  
values

('012345', 'Gate 2-Left side', '30-aug-14 02.30.22.178', '400', '4')

select \* from PLANE;

PLANE_NO	AIR_PARKING	TRAVEL_SCHEDULE	SEAT	FLIGHT_NO
012346	Gate 2-Right side	12-AUG-14 02.30.22.178000 AM	300	3
012345	Gate 2-Left side	30-AUG-14 02.30.22.178000 AM	400	4

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```

CREATE TABLE FLIGHT (
    FLIGHT_NO CHAR(6),
    TAKE_SITE VARCHAR2(50) NOT NULL,
    LANDING_SITE VARCHAR2(50) NOT NULL,
    PASSENGERS_NUMBER VARCHAR2(10),
    PLANE_NO CHAR(6),

    CONSTRAINT PK_FLIGHT_NO PRIMARY KEY(FLIGHT_NO)
);

```

```

29
30 CREATE TABLE FLIGHT (
31     FLIGHT_NO CHAR(6),
32     TAKE_SITE VARCHAR2(50) NOT NULL,
33     LANDING_SITE VARCHAR2(50) NOT NULL,
34     PASSENGERS_NUMBER VARCHAR2(10),
35     PLANE_NO CHAR(6),
36
37     CONSTRAINT PK_FLIGHT_NO PRIMARY KEY(FLIGHT_NO)
38 );
39
40 CREATE TABLE BOOKING_FLIGHT (

```

Table created.

```

insert into FLIGHT
(FLIGHT_NO, TAKE_SITE, LANDING_SITE, PASSENGERS_NUMBER, PLANE_NO)
values

```

```

('3', 'Front line', 'Gate 2-Right side', '252', '012346')

```

```

insert into FLIGHT
(FLIGHT_NO, TAKE_SITE, LANDING_SITE, PASSENGERS_NUMBER, PLANE_NO)
values

```

```

('4', 'Second line', 'Gate 2-Left side', '394', '012345')

```

```

select * from FLIGHT;

```

FLIGHT_NO	TAKE_SITE	LANDING_SITE	PASSENGERS_NUMBER	PLANE_NO
3	Front line	Gate 2-Right side	252	012346
4	Second line	Gate 2-Left side	394	012345

```

CREATE TABLE BOOKING_FLIGHT (
    PASSENGER_NO CHAR(10),
    FLIGHT_NO CHAR(10),
    BOOKING_NO CHAR(6) NOT NULL,

```

```

CONSTRAINT PK_BOOKING_FLIGHT PRIMARY KEY(PASSENGER_NO,FLIGHT_NO),

CONSTRAINT UN_BOOKING_NO UNIQUE(BOOKING_NO)

);

```

Live SQL

SQL Worksheet

```

39
40 CREATE TABLE BOOKING_FLIGHT (
41     PASSENGER_NO CHAR(10),
42     FLIGHT_NO CHAR(10),
43     BOOKING_NO CHAR(6) NOT NULL,
44
45     CONSTRAINT PK_BOOKING_FLIGHT PRIMARY KEY(PASSENGER_NO,FLIGHT_NO),
46     CONSTRAINT UN_BOOKING_NO UNIQUE(BOOKING_NO)
47 );
48
49 CREATE TABLE STAFF (
50     STAFF_NO CHAR(10),
51     STAFF_NAME VARCHAR2(50) NOT NULL,
52     JOB VARCHAR2(50) NOT NULL,
53     WORKING_HOURS NUMBER(10) NOT NULL,
54
55     CONSTRAINT PK_STAFF_NO PRIMARY KEY(STAFF_NO)
56 );
57
58 CREATE TABLE WORK_ON_FLIGHT (
59     FLIGHT_NO CHAR(10),
60     STAFF_NO CHAR(10),
61
62     CONSTRAINT PK_WORK_ON_FLIGHT PRIMARY KEY(FLIGHT_NO,STAFF_NO)
63 );
64
65 ALTER TABLE PASSENGER
66 ADD (
67     CONSTRAINT FKPASSENGER_PLANE_NO FOREIGN KEY(PLANE_NO)
68     REFERENCES PLANE(PLANE_NO),
69     CONSTRAINT FKPASSENGER_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
70     REFERENCES FLIGHT(FLIGHT_NO)
71 );
72
73 ALTER TABLE PLANE
74 ADD
75     CONSTRAINT FKPLANE_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
76     REFERENCES FLIGHT(FLIGHT_NO);
77
78 ALTER TABLE FLIGHT

```

Table created.

```

insert into BOOKING_FLIGHT
(PASSENGER_NO, FLIGHT_NO, BOOKING_NO)
values ('1223335555', '4', 'A1')
insert into BOOKING_FLIGHT
(PASSENGER_NO, FLIGHT_NO, BOOKING_NO)
values ('1223336666', '3', 'A4')
insert into BOOKING_FLIGHT
(PASSENGER_NO, FLIGHT_NO, BOOKING_NO)
values ('1223334444', '3', 'B1')

```

```
select* from BOOKING_FLIGHT;
```

PASSENGER_NO	FLIGHT_NO	BOOKING_NO
1223335555	4	A1
1223336666	3	A4
1223334444	3	B1

```

CREATE TABLE STAFF (

STAFF_NO CHAR(10),

STAFF_NAME VARCHAR2(50) NOT NULL,

JOB VARCHAR2(50) NOT NULL,

WORKING_HOURS NUMBER(10) NOT NULL,

CONSTRAINT PK_STAFF_NO PRIMARY KEY(STAFF_NO)

```

);

```
49 CREATE TABLE STAFF (  
50 STAFF_NO CHAR(10),  
51 STAFF_NAME VARCHAR2(50) NOT NULL,  
52 JOB VARCHAR2(50) NOT NULL,  
53 WORKING_HOURS NUMBER(10) NOT NULL,  
54  
55 CONSTRAINT PK_STAFF_NO PRIMARY KEY(STAFF_NO)  
56 );  
57  
58 CREATE TABLE WORK_ON_FLIGHT (  
59 FLIGHT_NO CHAR(10),  
60 STAFF_NO CHAR(10),  
61  
62 CONSTRAINT PK_WORK_ON_FLIGHT PRIMARY KEY(FLIGHT_NO,STAFF_NO)  
63 );  
64  
65 ALTER TABLE PASSENGER  
66 ADD (  
67 CONSTRAINT FKPASSENGER_PLANE_NO FOREIGN KEY(PLANE_NO)  
68 REFERENCES PLANE(PLANE_NO),  
69 CONSTRAINT FKPASSENGER_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)  
70 REFERENCES FLIGHT(FLIGHT_NO)  
71 );  
72  
73 ALTER TABLE PLANE  
74 ADD  
75 CONSTRAINT FKPLANE_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)  
76 REFERENCES FLIGHT(FLIGHT_NO);  
77  
78 ALTER TABLE FLIGHT
```

Table created.

insert into STAFF

(STAFF\_NO, STAFF\_NAME, JOB, WORKING\_HOURS)

values

('1', 'Khaled', 'Engineer', 8)

insert into STAFF

(STAFF\_NO, STAFF\_NAME, JOB, WORKING\_HOURS)

values

('2', 'Osama', 'pilot', 8)

insert into STAFF

(STAFF\_NO, STAFF\_NAME, JOB, WORKING\_HOURS)

values

('3', 'Hosam', 'Police', 5)

insert into STAFF

(STAFF\_NO, STAFF\_NAME, JOB, WORKING\_HOURS)

values

('4', 'Hanaa', 'Host Aviation', 8)

select \* from STAFF;

STAFF_NO	STAFF_NAME	JOB	WORKING_HOURS
3	Hosam	Police	5
1	Khaled	Engineer	8
4	Hanaa	Host Aviation	8
2	Osama	pilot	8

CREATE TABLE WORK\_ON\_FLIGHT (

FLIGHT\_NO CHAR(10),

STAFF\_NO CHAR(10),



CONSTRAINT PK\_WORK\_ON\_FLIGHT PRIMARY KEY(FLIGHT\_NO,STAFF\_NO)

);

```
57
58 CREATE TABLE WORK_ON_FLIGHT (
59     FLIGHT_NO CHAR(10),
60     STAFF_NO CHAR(10),
61
62     CONSTRAINT PK_WORK_ON_FLIGHT PRIMARY KEY(FLIGHT_NO,STAFF_NO)
63 );
64
65 ALTER TABLE PASSENGER
66 ADD (
67     CONSTRAINT FKPASSENGER_PLANE_NO FOREIGN KEY(PLANE_NO)
68     REFERENCES PLANE(PLANE_NO),
69     CONSTRAINT FKPASSENGER_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
70     REFERENCES FLIGHT(FLIGHT_NO)
71 );
72
73 ALTER TABLE PLANE
74 ADD
75     CONSTRAINT FKPLANE_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
76     REFERENCES FLIGHT(FLIGHT_NO);
77
78 ALTER TABLE FLIGHT
79 ADD
80     CONSTRAINT FKFLIGHT_PLANE_NO FOREIGN KEY(PLANE_NO)
81     REFERENCES PLANE(PLANE_NO);
82
83 ALTER TABLE BOOKING_FLIGHT
84 ADD (
85     CONSTRAINT FKBOOKING_FLIGHT_PASSENGER_NO FOREIGN KEY(PASSENGER_NO)
86     REFERENCES PASSENGER(PASSENGER_NO)
87 );
88
89 Table created.
```

insert into WORK\_ON\_FLIGHT

(FLIGHT\_NO, STAFF\_NO)

values('3', '1')

insert into WORK\_ON\_FLIGHT

values ('3', '2')

insert into WORK\_ON\_FLIGHT

values ('4', '3')

insert into WORK\_ON\_FLIGHT

values ('4', '4')

select \* from WORK\_ON\_FLIGHT;

FLIGHT_NO	STAFF_NO
3	1
3	2
4	3
4	4

ALTER TABLE PASSENGER

ADD (

CONSTRAINT FKPASSENGER\_PLANE\_NO FOREIGN KEY(PLANE\_NO)

REFERENCES PLANE(PLANE\_NO),

CONSTRAINT FKPASSENGER\_FLIGHT\_NO FOREIGN KEY(FLIGHT\_NO)

REFERENCES FLIGHT(FLIGHT\_NO)

);

```

64
65 ALTER TABLE PASSENGER
66 ADD (
67 CONSTRAINT FKPASSENGER_PLANE_NO FOREIGN KEY(PLANE_NO)
68 REFERENCES PLANE(PLANE_NO),
69 CONSTRAINT FKPASSENGER_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
70 REFERENCES FLIGHT(FLIGHT_NO)
71 );
72
73 ALTER TABLE PLANE
74 ADD
75 CONSTRAINT FKPLANE_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
76 REFERENCES FLIGHT(FLIGHT_NO);
77
78 ALTER TABLE FLIGHT
79 ADD
80 CONSTRAINT FKFLIGHT_PLANE_NO FOREIGN KEY(PLANE_NO)
81 REFERENCES PLANE(PLANE_NO);
82
83 ALTER TABLE BOOKING_FLIGHT
84 ADD (
85 CONSTRAINT FKBOOKING_FLIGHT_PASSENGER_NO FOREIGN KEY(PASSENGER_NO)
86 REFERENCES PASSENGER(PASSENGER_NO),
87 CONSTRAINT FKBOOKING_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
88 REFERENCES FLIGHT(FLIGHT_NO)
89 );
90
91 ALTER TABLE WORK_ON_FLIGHT
92 ADD (
93 CONSTRAINT FKWORK_ON_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
94 REFERENCES FLIGHT(FLIGHT_NO)

```

Table altered.

ALTER TABLE PLANE

ADD

CONSTRAINT FKPLANE\_FLIGHT\_NO FOREIGN KEY(FLIGHT\_NO)

REFERENCES FLIGHT(FLIGHT\_NO);

```

72
73 ALTER TABLE PLANE
74 ADD
75 CONSTRAINT FKPLANE_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
76 REFERENCES FLIGHT(FLIGHT_NO);
77
78 ALTER TABLE FLIGHT
79 ADD
80 CONSTRAINT FKFLIGHT_PLANE_NO FOREIGN KEY(PLANE_NO)
81 REFERENCES PLANE(PLANE_NO);
82
83 ALTER TABLE BOOKING_FLIGHT
84 ADD (
85 CONSTRAINT FKBOOKING_FLIGHT_PASSENGER_NO FOREIGN KEY(PASSENGER_NO)
86 REFERENCES PASSENGER(PASSENGER_NO),
87 CONSTRAINT FKBOOKING_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
88 REFERENCES FLIGHT(FLIGHT_NO)
89 );
90
91 ALTER TABLE WORK_ON_FLIGHT
92 ADD (
93 CONSTRAINT FKWORK_ON_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
94 REFERENCES FLIGHT(FLIGHT_NO)

```

Table altered.

ALTER TABLE FLIGHT

ADD

CONSTRAINT FKFLIGHT\_PLANE\_NO FOREIGN KEY(PLANE\_NO)

REFERENCES PLANE(PLANE\_NO);

```

77
78 ALTER TABLE FLIGHT
79 ADD
80 CONSTRAINT FKFLIGHT_PLANE_NO FOREIGN KEY(PLANE_NO)
81 REFERENCES PLANE(PLANE_NO);
82
83 ALTER TABLE BOOKING_FLIGHT
84 ADD (
85 CONSTRAINT FKBOOKING_FLIGHT_PASSENGER_NO FOREIGN KEY(PASSENGER_NO)
86 REFERENCES PASSENGER(PASSENGER_NO),
87 CONSTRAINT FKBOOKING_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
88 REFERENCES FLIGHT(FLIGHT_NO)
89 );
90
91 ALTER TABLE WORK_ON_FLIGHT
92 ADD (
93 CONSTRAINT FKWORK_ON_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
94 REFERENCES FLIGHT(FLIGHT_NO)

```

Table altered.

ALTER TABLE BOOKING\_FLIGHT

ADD (

CONSTRAINT FKBOOKING\_FLIGHT\_PASSENGER\_NO FOREIGN KEY(PASSENGER\_NO)

REFERENCES PASSENGER(PASSENGER\_NO),

```
CONSTRAINT FKBOOKING_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
REFERENCES FLIGHT(FLIGHT_NO)
);
```

```
83 ALTER TABLE BOOKING_FLIGHT
84 ADD (
85 CONSTRAINT FKBOOKING_FLIGHT_PASSENGER_NO FOREIGN KEY(PASSENGER_NO)
86 REFERENCES PASSENGER(PASSENGER_NO),
87 CONSTRAINT FKBOOKING_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
88 REFERENCES FLIGHT(FLIGHT_NO)
89 );
90
91 ALTER TABLE WORK_ON_FLIGHT
92 ADD (
93 CONSTRAINT FKWORK_ON_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
94 REFERENCES FLIGHT(FLIGHT_NO),
95 CONSTRAINT FKWORK_ON_FLIGHT_STAFF_NO FOREIGN KEY(STAFF_NO)
96 REFERENCES STAFF(STAFF_NO)
97 );
98
```

Table altered.

```
ALTER TABLE WORK_ON_FLIGHT
ADD (
CONSTRAINT FKWORK_ON_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
REFERENCES FLIGHT(FLIGHT_NO),
CONSTRAINT FKWORK_ON_FLIGHT_STAFF_NO FOREIGN KEY(STAFF_NO)
REFERENCES STAFF(STAFF_NO)
);
```

```
91 ALTER TABLE WORK_ON_FLIGHT
92 ADD (
93 CONSTRAINT FKWORK_ON_FLIGHT_FLIGHT_NO FOREIGN KEY(FLIGHT_NO)
94 REFERENCES FLIGHT(FLIGHT_NO),
95 CONSTRAINT FKWORK_ON_FLIGHT_STAFF_NO FOREIGN KEY(STAFF_NO)
96 REFERENCES STAFF(STAFF_NO)
97 );
98
```

Table altered.

Updated:

update PASSENGER

set FLIGHT\_NO = '4'

where PHONE\_NO = '0522222222';

update PLANE

set AIR\_PARKING = 'Gate 4-Right side'

where PLANE\_NO = '012346';

update STAFF

set WORKING\_HOURS = 10

where JOB = 'Engineer';

Query:

select STAFF\_NAME, WORKING\_HOURS

from STAFF

where WORKING\_HOURS >5;

STAFF_NAME	WORKING_HOURS
Khaled	10
Hanaa	8
Osama	8

select FIRST\_NAME, MID\_NAME, LAST\_NAME

from PASSENGER

where FLIGHT\_NO ='4';

FIRST_NAME	MID_NAME	LAST_NAME
Badreiyah	Badr	Bandar
Asmaa	Ahmad	Anas

Download CSV  
2 rows selected.

select FIRST\_NAME || ' ' || LAST\_NAME AS FULL\_NAME

from PASSENGER;

FULL_NAME
Badreiyah Bandar
Tala Mohammad
Asmaa Anas

select STAFF\_NAME, WORKING\_HOURS

from STAFF

where upper (JOB) like ('E%');

STAFF_NAME	WORKING_HOURS
Khaled	10

Download CSV

select BOOKING\_NO, PASSENGER\_NO

from BOOKING\_FLIGHT

where PASSENGER\_NO like ('122%');

BOOKING_NO	PASSENGER_NO
A1	1223335555
A4	1223336666
B1	1223334444

```

select STAFF_NAME, FLIGHT_NO as "Flight numberr"
from STAFF
join WORK_ON_FLIGHT
on STAFF.STAFF_NO=WORK_ON_FLIGHT.STAFF_NO;

```

STAFF_NAME	Flight numberr
Khaled	3
Osama	3
Hosam	4
Hanaa	4

[Download CSV](#)  
4 rows selected.

```

select FLIGHT.FLIGHT_NO, PLANE.PLANE_NO, PLANE.TRAVEL_SCHEDULE
from FLIGHT join PLANE
on PLANE.PLANE_NO=FLIGHT.PLANE_NO;

```

FLIGHT_NO	PLANE_NO	TRAVEL_SCHEDULE
3	012346	12-AUG-14 02.30.22.178000 AM
4	012345	30-AUG-14 02.30.22.178000 AM

[Download CSV](#)  
2 rows selected.

```

select FIRST_NAME, LAST_NAME, FLIGHT.FLIGHT_NO
from PASSENGER
join FLIGHT
on PASSENGER.FLIGHT_NO=FLIGHT.FLIGHT_NO
where PASSENGER_NO=1223334444 or FIRST_NAME like ('B%');

```

FIRST_NAME	LAST_NAME	FLIGHT_NO
Asmaa	Anas	4
Badreiyah	Bandar	4

[Download CSV](#)  
2 rows selected.

# 5- Oracle Schema

- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

Schema \

PASSENGER Syntax Help Actions View All Objects

Show All Table Attributes Columns Indexes Triggers Constraints

Table Name	PASSENGER
Status	VALID
Temporary	No
Nested	No
Owner	SQL_XMJKQWXURCTWLGYZQIHZDQNA

Columns

#	Column	Type	Length	Precision	Scale	Nullable	Semantics
1	PASSENGER_NO	CHAR	10			No	Byte
2	PHONE_NO	CHAR	10			Yes	Byte
3	FIRST_NAME	VARCHAR2	20			No	Byte
4	MID_NAME	VARCHAR2	20			Yes	Byte
5	LAST_NAME	VARCHAR2	20			No	Byte

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- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

7	EMAIL	VARCHAR2	50			No	Byte
8	PLANE_NO	CHAR	6			Yes	Byte
9	FLIGHT_NO	CHAR	6			Yes	Byte

Indexes

Index Name	Index Type	Uniqueness	Status	
PK_PASSENGER_NO	NORMAL	UNIQUE	VALID	PASSENGE
UN_FLIGHT_NO	NORMAL	UNIQUE	VALID	FLIGHT_NC
UN_PLANE_NO	NORMAL	UNIQUE	VALID	PLANE_NC

Triggers

No triggers defined.

Constraints

Constraint	Type	Condition	On Delete	Status	Last Cha
CH_PLANE_NO	Check	EMAIL LIKE '%@%'	-	ENABLED	7 minute
SYS_C0099461372	Check	"FIRST_NAME" IS NOT NULL	-	ENABLED	7 minute

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SYS_C0099461375	Check	"EMAIL" IS NOT NULL	-	ENABLED	7 minute
FKPASSENGER_FLIGHT_NO	Foreign Key	-	NO ACTION	ENABLED	7 minute
FKPASSENGER_PLANE_NO	Foreign Key	-	NO ACTION	ENABLED	7 minute
PK_PASSENGER_NO	Primary Key	-	-	ENABLED	7 minute
UN_FLIGHT_NO	Unique Key	-	-	ENABLED	7 minute
UN_PLANE_NO	Unique Key	-	-	ENABLED	7 minute

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- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

Schema \

FLIGHT

Syntax HelpActionsView All Objects

Show AllTable AttributesColumnsIndexesTriggersConstraints

Table Name	FLIGHT
Status	VALID
Temporary	No
Nested	No
Owner	SQL_XMJKQWXURCTWLGYOZQIHZDQNA

Columns							
#	Column	Type	Length	Precision	Scale	Nullable	Semantic
1	FLIGHT_NO	CHAR	6			No	Byte
2	TAKE_SITE	VARCHAR2	50			No	Byte
3	LANDING_SITE	VARCHAR2	50			No	Byte
4	PASSENGERS_NUMBER	VARCHAR2	10			Yes	Byte
5	PI ANF NO	CHAR	6			Yes	Byte

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- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

indexes

Index Name	Index Type	Uniqueness	Status	
PK_FLIGHT_NO	NORMAL	UNIQUE	VALID	FLIGH

Triggers

No triggers defined.

Constraints

Constraint	Type	Condition	On Delete	Status	Last Chan
SYS_C0099461384	Check	"TAKE_SITE" IS NOT NULL	-	ENABLED	11 minutes
SYS_C0099461385	Check	"LANDING_SITE" IS NOT NULL	-	ENABLED	11 minutes
FKFLIGHT_PLANE_NO	Foreign Key	-	NO ACTION	ENABLED	10 minutes
PK_FLIGHT_NO	Primary Key	-	-	ENABLED	11 minutes

- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

Schema \

# PLANE

Syntax Help Actions View All Objects

Show All Table Attributes Columns Indexes Triggers Constraints

Table Name	PLANE
Status	VALID
Temporary	No
Nested	No
Owner	SQL_XMJKQWXURCTWLGYOZQIHZDQNA

## Columns

#	Column	Type	Length	Precision	Scale	Nullable	Semantic
1	PLANE_NO	CHAR	6			No	Byte
2	AIR_PARKING	VARCHAR2	50			No	Byte
3	TRAVEL_SCHEDULE	TIMESTAMP(6)	11		6	Yes	
4	SEAT	VARCHAR2	4			Yes	Byte
5	FLIGHT_NO	CHAR	6			Yes	Byte

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- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

## Indexes

Index Name	Index Type	Uniqueness	Status	
PK_PLANE_NO	NORMAL	UNIQUE	VALID	PLANE_
UN_AIR_PARKING	NORMAL	UNIQUE	VALID	AIR_PAF
UN_SEAT	NORMAL	UNIQUE	VALID	SEAT

## Triggers

No triggers defined.

## Constraints

Constraint	Type	Condition	On Delete	Status	Last Change
SYS_C0099461380	Check	"AIR_PARKING" IS NOT NULL	-	ENABLED	10 minutes
FKPLANE_FLIGHT_NO	Foreign Key	-	NO ACTION	ENABLED	9 minutes
PK_PLANE_NO	Primary Key	-	-	ENABLED	10 minutes
UN_AIR_PARKING	Unique Key	-	-	ENABLED	10 minutes
UN_SEAT	Unique Key	-	-	ENABLED	10 minutes

- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

Schema \

BOOKING\_FLIGHT

Syntax Help

Actions

View All Objects

Show All

Table Attributes	Columns	Indexes	Triggers	Constraints
Table Name	BOOKING_FLIGHT			
Status	VALID			
Temporary	No			
Nested	No			
Owner	SQL_XMJKQWXURCTWLGYOZQIHZDQNA			

Columns							
#	Column	Type	Length	Precision	Scale	Nullable	Semantics
1	PASSENGER_NO	CHAR	10			No	Byte
2	FLIGHT_NO	CHAR	10			No	Byte
3	BOOKING_NO	CHAR	6			No	Byte

Indexes							
---------	--	--	--	--	--	--	--

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- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

PK_BOOKING_FLIGHT	NORMAL	UNIQUE	VALID	PASSENGER_NO, FLIGHT
UN_BOOKING_NO	NORMAL	UNIQUE	VALID	BOOKING_NO

Triggers				
No triggers defined.				

Constraint	Type	Condition	On Delete	Status	Last Cl
SYS_C0099461387	Check	"BOOKING_NO" IS NOT NULL	-	ENABLED	13 min ago
FKBOOKING_FLIGHT_FLIGHT_NO	Foreign Key	-	NO ACTION	ENABLED	12 min ago
FKBOOKING_FLIGHT_PASSENGER_NO	Foreign Key	-	NO ACTION	ENABLED	12 min ago
PK_BOOKING_FLIGHT	Primary Key	-	-	ENABLED	13 min ago
UN_BOOKING_NO	Unique Key	-	-	ENABLED	13 min ago

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- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

Schema \

STAFF

Syntax Help Actions View All Objects

Show All Table Attributes Columns Indexes Triggers Constraints

Table Name	STAFF
Status	VALID
Temporary	No
Nested	No
Owner	SQL_XMJKQWXURCTWLGYOZQIHZDQNA

Columns

#	Column	Type	Length	Precision	Scale	Nullable	Semantics
1	STAFF_NO	CHAR	10			No	Byte
2	STAFF_NAME	VARCHAR2	50			No	Byte
3	JOB	VARCHAR2	50			No	Byte
4	WORKING_HOURS	NUMBER	22	10	0	No	

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- Home
- SQL Worksheet
- My Session
- Schema
- Quick SQL
- My Scripts
- My Tutorials
- Code Library

Index Name	Index Type	Uniqueness	Status	
PK_STAFF_NO	NORMAL	UNIQUE	VALID	STAF

Triggers

No triggers defined.

Constraints

Constraint	Type	Condition	On Delete	Status	Last Change
SYS_C0099461390	Check	"STAFF_NAME" IS NOT NULL	-	ENABLED	15 minutes
SYS_C0099461391	Check	"JOB" IS NOT NULL	-	ENABLED	15 minutes
SYS_C0099461392	Check	"WORKING_HOURS" IS NOT NULL	-	ENABLED	15 minutes
PK_STAFF_NO	Primary Key	-	-	ENABLED	15 minutes

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[Home](#)[SQL Worksheet](#)[My Session](#)[Schema](#)[Quick SQL](#)[My Scripts](#)[My Tutorials](#)[Code Library](#)

Schema \

## WORK\_ON\_FLIGHT

[Syntax Help](#)[Actions](#)[View All Objects](#)[Show All](#) [Table Attributes](#) [Columns](#) [Indexes](#) [Triggers](#) [Constraints](#)

Table Name	WORK_ON_FLIGHT
Status	VALID
Temporary	No
Nested	No
Owner	SQL_XMJKQWXURCTWLGYOZQIHZDQNA

## Columns

#	Column	Type	Length	Precision	Scale	Nullable	Semantics
1	FLIGHT_NO	CHAR	10			No	Byte
2	STAFF_NO	CHAR	10			No	Byte

## Indexes

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## Triggers

No triggers defined.

## Constraints

Constraint	Type	Condition	On Delete	Status	Last Change
FKWORK_ON_FLIGHT_FLIGHT_NO	Foreign Key	-	NO ACTION	ENABLED	13 minutes a
FKWORK_ON_FLIGHT_STAFF_NO	Foreign Key	-	NO ACTION	ENABLED	13 minutes a
PK_WORK_ON_FLIGHT	Primary Key	-	-	ENABLED	16 minutes a

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## Group:

1. Shrouq Mohammed
2. Rand Mohammed Ghalib
3. Sama Ali

Fundamentals of Database Systems (IS2511)

Dr. Nouf Al-jurayban