DATABASE
MANAGEMENT SYSTEM
AIRPORT MANAGEMENT

NEHA AGARWAL   102003508
KARAN NASA   102003008
KARANJOT SINGH   102003257
KIRTI KAPOOR   102003003

INDEX

S no.	Title	
1	*Problem Statement*	
2	*ER to Table*	
3	*ER Diagram*	
4	*Normalization (Normalized Tables)*	
5	*SQL/PLSQL code to implement project functionalities*	
6	*Output Screenshots*	

PROBLEM STATEMENT

The database is a CENTRAL AIRPORTS MANAGEMENT DATABASE andits users are the personnel at the airport, the air travellers and their relatives. This database is well-connected to the rest of the airport modules: airline databases, revenue management, and air traffic management.

This database has or can be extended to have a lot of functionality like:

Keeping track of flight status and schedules for the travellers to knowabout flight cancellation, flight delays
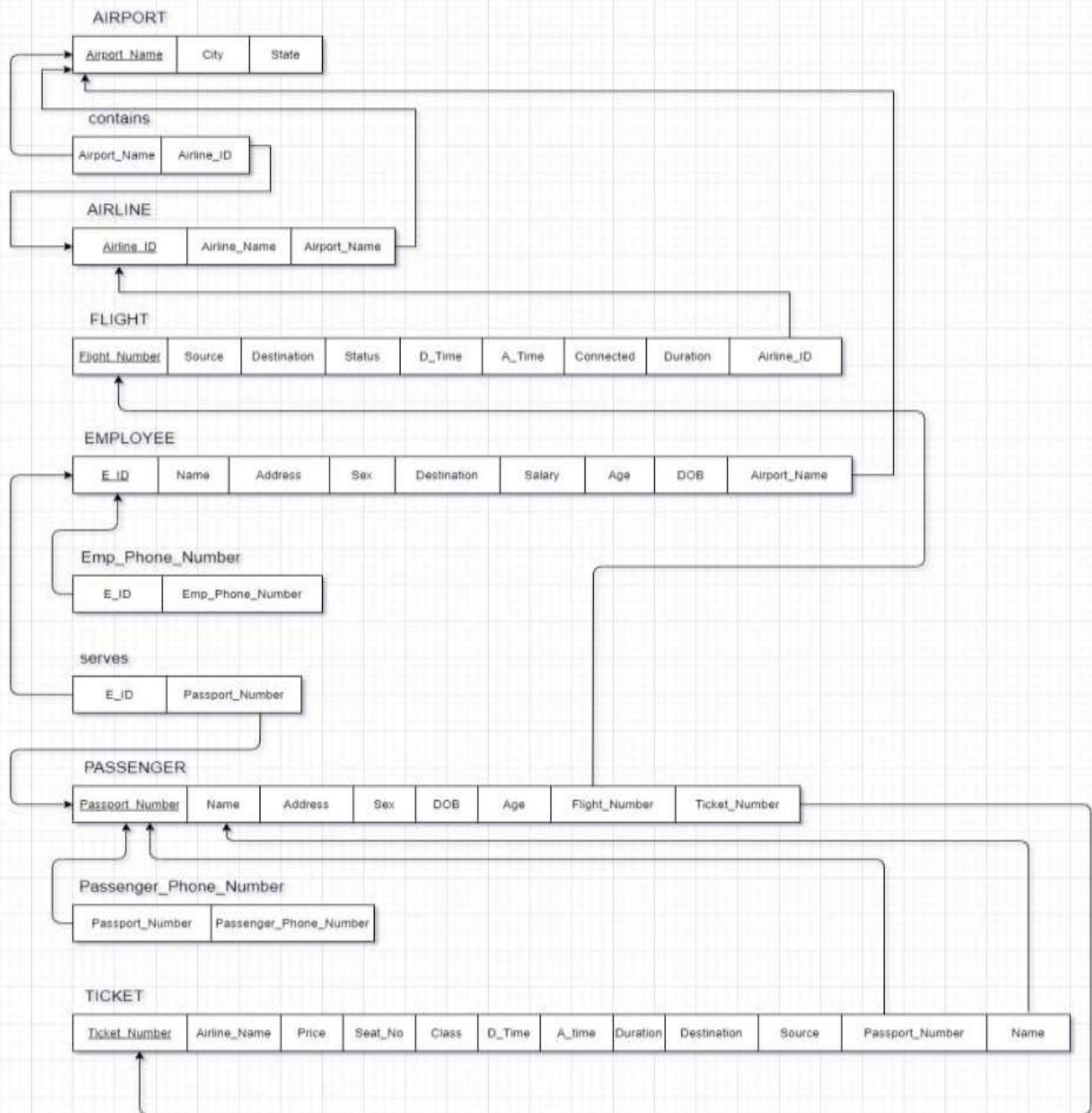Supervision of aircraft landing and take off, airport traffic management,runway status management
Retrieval of information regarding airport finances: staff payrolls, etc Baggage tagging from the time the baggage is loaded and its tracking untilthe destination is reached and the bag is returned to the owners.
Keeping a record of a passenger's journey from passenger processing (check-in, boarding) and baggage handling (dropping and handling) to themoment he boards the aircraft
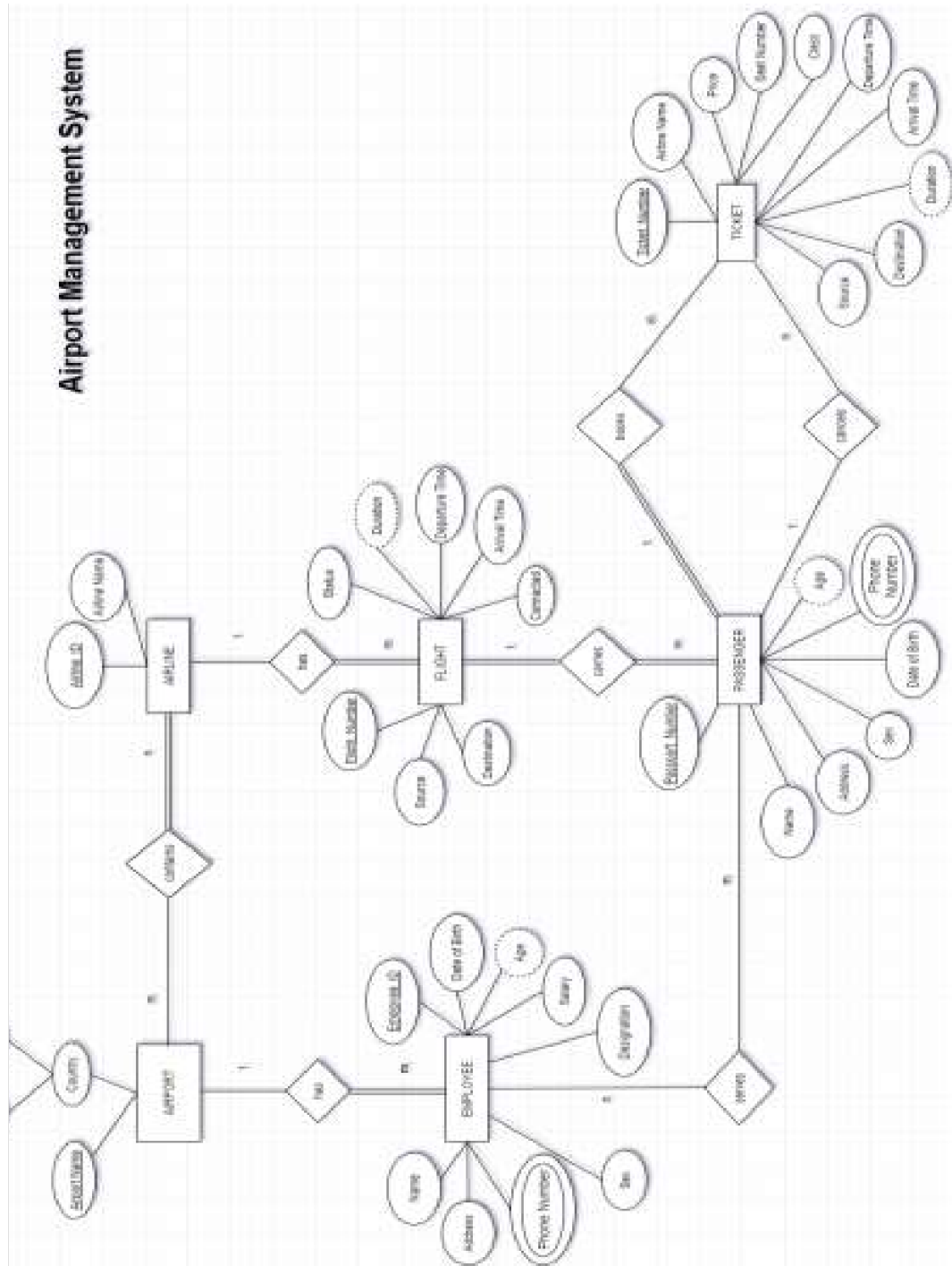Retrieving information for different segments of users: passengers, airportstaff, crew, or members of specific departments, authorities, business partners, or police

ER to Table

Airport Database Management System
RELATIONAL SCHEMA

AIRPORT

Airport_Name	City	State

contains

Airport_Name	Airline_ID

AIRLINE

Airline_ID	Airline_Name	Airport_Name

FLIGHT

Flight_Number	Source	Destination	Status	D_Time	A_Time	Connected	Duration	Airline_ID

EMPLOYEE

E_ID	Name	Address	Sex	Destination	Salary	Age	DOB	Airport_Name

Emp_Phone_Number

E_ID	Emp_Phone_Number

serves

E_ID	Passport_Number

PASSENGER

Passport_Number	Name	Address	Sex	DOB	Age	Flight_Number	Ticket_Number

Passenger_Phone_Number

Passport_Number	Passenger_Phone_Number

TICKET

Ticket_Number	Airline_Name	Price	Seat_No	Class	D_Time	A_time	Duration	Destination	Source	Passport_Number	Name

ER DIAGRAM

Airport Management System

SQL Code

```sql
CREATE TABLE AIRPORT(
AIRPORT_NAME VARCHAR(20) NOT NULL,
   CITY VARCHAR(20),
   STATE VARCHAR(20), PRIMARY
KEY (AIRPORT_NAME)
);
CREATE TABLE AIRLINE(
AIRLINE_ID INT NOT NULL PRIMARY KEY,
AIRLINE_NAME VARCHAR(10),
AIRPORT_NAME VARCHAR(100),
FOREIGN KEY (AIRPORT_NAME) REFERENCES AIRPORT(AIRPORT_NAME)
);
CREATE TABLE CONTAINS(
AIRPORT_NAME VARCHAR(20),
   AIRLINE_ID INT,
FOREIGN KEY (AIRPORT_NAME) REFERENCES AIRPORT(AIRPORT_NAME),FOREIGN
KEY (AIRLINE_ID) REFERENCES AIRLINE(AIRLINE_ID)
);

CREATE TABLE FLIGHT(
FLIGHT_NO INT NOT NULL PRIMARY KEY,
SOURCE VARCHAR(20) NOT NULL,
DESTINATION VARCHAR(20) NOT NULL,
D_TIME DATE,
A_TIME DATE,
DURATION INT NOT NULL,
AIRLINE_ID INT,
FOREIGN KEY (AIRLINE_ID) REFERENCES AIRLINE(AIRLINE_ID)
);
CREATE TABLE EMPLOYEE(
E_ID INT PRIMARY KEY,
   NAME VARCHAR(20),
   ADDRESS VARCHAR(20),
   SEX VARCHAR(10),
   SALARY INT,
   AGE INT,
   AIRPORT_NAME VARCHAR(20),
  FOREIGN KEY (AIRPORT_NAME) REFERENCES      AIRPORT(AIRPORT_NAME));
CREATE TABLE EMP_PHONE_NO(
   E_ID INT,
   PHONE_NO VARCHAR(11),
FOREIGN KEY (E_ID) REFERENCES  EMPLOYEE(E_ID)
);


CREATE TABLE PASSENGER(
PASSPORT_NO VARCHAR(20) NOT NULL PRIMARY KEY,
```

```sql
 NAME VARCHAR(20) NOT NULL,
 ADDRESS VARCHAR(20),
 SEX VARCHAR(5),
 DOB DATE,
 AGE INT,
 FLIGHT_NO INT,
 TICKET_NO VARCHAR(20),
 FOREIGN KEY (FLIGHT_NO) REFERENCES FLIGHT(FLIGHT_NO));
 CREATE TABLE SERVES(
 E_ID INT,
 PASSPORT_NO VARCHAR(20),
 FOREIGN KEY (E_ID) REFERENCES  EMPLOYEE(E_ID),
 FOREIGN KEY (PASSPORT_NO) REFERENCES  PASSENGER(PASSPORT_NO)
 );

 CREATE TABLE PASSENGER_PHONE_NO(
 PASSPORT_NO VARCHAR(20), PHONE_NO
 VARCHAR(11),
 FOREIGN KEY (PASSPORT_NO) REFERENCES  PASSENGER(PASSPORT_NO));

 CREATE TABLE TICKET(
 TICKET_NO VARCHAR(20) NOT NULL PRIMARY KEY,AIRLINE_NAME
 VARCHAR(20) NOT NULL,
 PRICE INT NOT NULL,
 SEAT_NO VARCHAR(20),
 CLASS VARCHAR(5),
 D_TIME Date,
 A_TIME Date,
 DURATION INT,
 DESTINATION VARCHAR(20),
 SOURCE VARCHAR(20),
 PASSPORT_NO VARCHAR(20),
 PASSENGER_NAME VARCHAR(20),
 FOREIGN KEY (PASSPORT_NO) REFERENCES  PASSENGER(PASSPORT_NO)
 );


 // EXP3 ALTER COMMANDS:


 ALTER TABLE AIRPORT DROP COLUMN STATE;
 ALTER TABLE AIRPORT ADD STATE VARCHAR(20);
 ALTER TABLE AIRPORT RENAME COLUMN AIRPORT_NAME TO AIR_NAME;ALTER
 TABLE AIRPORT RENAME TO AIRPORT_DETAILS;
 ALTER TABLE AIRPORT_DETAILS RENAME TO AIRPORT;
 ALTER TABLE AIRPORT RENAME COLUMN AIR_NAME TO AIRPORT_NAME;
```

```sql
INSERT INTO AIRPORT VALUES ('Shivaji', 'Mumbai', 'Maharashtra'); INSERT
INTO AIRPORT VALUES ('Indra Gandhi Int', 'Delhi', 'Maharashtra');


SELECT * FROM AIRPORT;


INSERT INTO EMPLOYEE VALUES(13,'parth','mumbai','M',40000,19,'Shivaji'); INSERT
INTO EMPLOYEE VALUES(14,'ramesh','mumbai','M',30000,20,'Shivaji'); INSERT INTO
EMPLOYEE VALUES(15,'ram','delhi','M',20000,23,'Indra Gandhi Int');INSERT INTO
EMPLOYEE VALUES(16,'rani','delhi','F',22000,19,'Indra Gandhi Int');

select * from EMPLOYEE


INSERT INTO EMP_PHONE_NO VALUES(13,'1111111111');
INSERT INTO EMP_PHONE_NO VALUES(14,'3333333333');INSERT
INTO EMP_PHONE_NO VALUES(16,'6666666666');
select * from EMP_PHONE_NO
INSERT INTO AIRLINE VALUES(123,'MLines','Shivaji');
INSERT INTO AIRLINE VALUES(124,'Dlines','Indra Gandhi Int');
select * from AIRLINE


INSERT INTO FLIGHT VALUES(12345,'Mumbai','Delhi', to_date('20-FEB-2022 4:00 am','dd-mon-
yyyy hh:mi am'),to_date('20-feb-2022 8:30 am','dd-mon-yyyy hh:mi am'),360,123);
INSERT INTO FLIGHT VALUES(12356,'Delhi', 'Mumbai', to_date('20-02-2022 10:00 pm','dd-mm-
yyyy hh:mi am'),to_date('21-02-2022 4:00 am','dd-mm-yyyy hh:mi am'), 180,123);
INSERT INTO FLIGHT VALUES(12389,'Delhi', 'Mumbai', to_date('24-02-2022 9:15 am','dd-mm-
yyyy hh:mi am'),to_date('25-02-2022 9:30 am','dd-mm-yyyy hh:mi am'), 150,123);select *

from FLIGHT


INSERT INTO TICKET VALUES(786, 'SpiceJet', 6000,'A-2','First',to_date('20-FEB-2022 4:00
am','dd-mon-yyyy hh:mi am'),to_date('20-feb-2022 8:30 am','dd-mon-yyyy hh:mi am'),5,
'banglore','delhi',123,'Parth');
INSERT INTO TICKET VALUES(777, 'Mumbai Airlines',4000,'H-42','Secon',to_date('24-02-2022
9:15 am','dd-mm-yyyy hh:mi am'),to_date('25-02-2022 9:30 am','dd-mm-yyyy hh:mi
am'),4,'goa','chandigarh',456,'Tushar');
select * from TICKET

INSERT INTO PASSENGER VALUES(123,'Parth','A22','Male',date'2002-03-28',5,'12356',786); INSERT
INTO PASSENGER VALUES(456, 'Tushar', 'B22', 'Male', date'2001-08-12', 19, '12345', 777);INSERT INTO
PASSENGER VALUES(789, 'Raj', 'D45', 'Male', date'1972-06-13', 64, '12345', 786); SELECT * from
PASSENGER
```

```sql
INSERT INTO PASSENGER_PHONE_NO VALUES(123,'1111');
INSERT INTO PASSENGER_PHONE_NO VALUES(456,'3333333333');
INSERT INTO  PASSENGER_PHONE_NO VALUES(789,'6666666666');
select * from PASSENGER_PHONE_NO;
```

1. SELECT NAME AND SALARY FROM EMPLOYEE HAVING PHONE NUMBER:

```sql
begin

declare

  cursor C1 is  select NAME,SEX from EMPLOYEE where E_ID in (SELECT E_ID FROM

EMP_PHONE_NO WHERE EMPLOYEE.E_ID=EMP_PHONE_NO.E_ID);

begin

    for rec in C1 loop

    dbms_output.put_line('Name is ' || rec.NAME);

    dbms_output.put_line('Gender is ' || rec.SEX);

    end loop;

  exception

  when NO_DATA_FOUND then

    dbms_output.put_line('No data present');

  when TOO_MANY_ROWS then

    dbms_output.put_line('Multiple rows returned for a query');

  when INVALID_NUMBER then

    dbms_output.put_line('Conversion of character string to a number');

  when DUP_VAL_ON_INDEX then

    dbms_output.put_line('Attempt to insert/update in unique database column');

  when others then

    dbms_ouput.put_line('Some runtime error occured.');
```

```
end;

exception

    when NO_DATA_FOUND then

        dbms_output.put_line('No data found');

    when others then

        dbms_output.put_line('Some run-time error occured');

end;


2. SELECT NAME AND SALARY AND ID IN WHICH E_ID IS BETWEEN 1 TO 5 having phone
number:

begin
declare
    cursor C1 is select E.E_ID, E.NAME, E.SALARY from EMPLOYEE E where E.E_ID in (select EP.E_ID
from EMP_PHONE_NO EP where EP.E_ID in (1,5));
begin
    for rec in C1 loop
    dbms_output.put_line('Name is ' || rec.NAME);
    dbms_output.put_line('Gender is ' || rec.SALARY);
    end loop;
exception
    when NO_DATA_FOUND then
        dbms_output.put_line('No data present');
    when TOO_MANY_ROWS then
        dbms_output.put_line('Multiple rows returned for a query');
    when INVALID_NUMBER then
        dbms_output.put_line('Conversion of character string to a number');
    when DUP_VAL_ON_INDEX then
        dbms_output.put_line('Attempt to insert/update in unique database column');
    when others then
        dbms_ouput.put_line('Some runtime error occured.');
end;

exception

    when NO_DATA_FOUND then

        dbms_output.put_line('No data found');

    when others then

        dbms_output.put_line('Some run-time error occured');
```

```
end;
```

3. SELECT NAME BASED ON AIRPORT_NAME WHERE CITY IS MUMBAI:

```
begin
   declare
   cursor C1 is select E.NAME, E.E_ID from EMPLOYEE E where
E.AIRPORT_NAME in (select A.AIRPORT_NAME from AIRPORT A
where A.CITY='Mumbai');
begin
     for rec in C1 loop
     dbms_output.put_line('Name is ' || rec.NAME);
     dbms_output.put_line('Gender is ' || rec.E_ID);
     end loop;
exception
     when NO_DATA_FOUND then
        dbms_output.put_line('No data present');
     when TOO_MANY_ROWS then
        dbms_output.put_line('Multiple rows returned for a query');
     when INVALID_NUMBER then
        dbms_output.put_line('Conversion of character string to a number');
     when DUP_VAL_ON_INDEX then
        dbms_output.put_line('Attempt to insert/update in unique database
column');
     when others then
```

```
                    dbms_ouput.put_line('Some runtime error occured.');

  end;

exception

    when NO_DATA_FOUND then

        dbms_output.put_line('No data found');

    when others then

        dbms_output.put_line('Some run-time error occured');

end;
```

4. SELECT NAME AND SEX WHERE EMPLOYEE ID IS GREATER THAN 3 AND HAVING PHONE NUMBER

```
begin
declare
    cursor C1 is SELECT E.E_ID, E.NAME, E.SEX FROM EMPLOYEE E WHERE E.E_ID IN (SELECT
EP.E_ID FROM EMP_PHONE_NO EP WHERE E.E_ID = EP.E_ID AND EP.E_ID>=3);
begin
    for rec in C1 loop
    dbms_output.put_line('Name is ' || rec.NAME);
    dbms_output.put_line('Gender is ' || rec.E_ID);
    dbms_output.put_line('Gender is ' || rec.SEX);
    end loop;
exception
    when NO_DATA_FOUND then
      dbms_output.put_line('No data present');
    when TOO_MANY_ROWS then
      dbms_output.put_line('Multiple rows returned for a query');
    when INVALID_NUMBER then
      dbms_output.put_line('Conversion of character string to a number');
    when DUP_VAL_ON_INDEX then
      dbms_output.put_line('Attempt to insert/update in unique database column');
    when others then
      dbms_ouput.put_line('Some runtime error occured.');
end;

exception

    when NO_DATA_FOUND then
```

```
        dbms_output.put_line('No data found');

    when others then

        dbms_output.put_line('Some run-time error occured');

end;
```

5.SELECT EMPLOYEE NAME, ID HAVING MULTIPLE PHONE NUMBERS:

```
begin

declare

    cursor C1 is SELECT E.NAME, E.E_ID FROM EMPLOYEE E WHERE E.E_ID IN

(SELECT EP.E_ID FROM EMP_PHONE_NO EP GROUP BY EP.E_ID HAVING

COUNT(*) > 1);

begin

    for rec in C1 loop

    dbms_output.put_line('Name is ' || rec.NAME);

    dbms_output.put_line('ID is ' || rec.E_ID);

    end loop;

exception

    when NO_DATA_FOUND then

        dbms_output.put_line('No data present');

    when TOO_MANY_ROWS then

        dbms_output.put_line('Multiple rows returned for a query');

    when INVALID_NUMBER then

        dbms_output.put_line('Conversion of character string to a number');

    when DUP_VAL_ON_INDEX then

        dbms_output.put_line('Attempt to insert/update in unique database column');

    when others then
```

```
            dbms_ouput.put_line('Some runtime error occured.');

    end;

    exception

        when NO_DATA_FOUND then

            dbms_output.put_line('No data found');

        when others then

            dbms_output.put_line('Some run-time error occured');

    end;
```

6. SELECT NAME, ADDRESS, AGE, SEX WHERE CITY IS Mumbai or Delhi

```
begin

    declare

        cursor C1 is SELECT E.NAME, E.ADDRESS, E.AGE, E.SEX FROM EMPLOYEE E

    WHERE E.AIRPORT_NAME IN (SELECT A.AIRPORT_NAME FROM AIRPORT A

    WHERE A.CITY in ('Mumbai', 'Delhi'));


    begin

        for rec in C1 loop

        dbms_output.put_line('Name is ' || rec.NAME);

        dbms_output.put_line('Address is ' || rec.ADDRESS);

        dbms_output.put_line('AGE is ' || rec.AGE);

        dbms_output.put_line('Gender is ' || rec.SEX);

        end loop;

    exception

        when NO_DATA_FOUND then
```

```
        dbms_output.put_line('No data present');

    when TOO_MANY_ROWS then

        dbms_output.put_line('Multiple rows returned for a query');

    when INVALID_NUMBER then

        dbms_output.put_line('Conversion of character string to a number');

    when DUP_VAL_ON_INDEX then

        dbms_output.put_line('Attempt to insert/update in unique database column');

    when others then

        dbms_ouput.put_line('Some runtime error occured.');

  end;
exception

    when NO_DATA_FOUND then

        dbms_output.put_line('No data found');

    when others then

        dbms_output.put_line('Some run-time error occured');

end;
```

7. SELECT NAME, PASSPORT NUMBER OF PASSENGERS WHERE AIRLINE_NAME IS Mumbai Airlines

```
begin
declare
    cursor C1 is SELECT P.NAME, P.PASSPORT_NO FROM PASSENGER P WHERE P.TICKET_NO IN
(SELECT T.TICKET_NO FROM TICKET T WHERE T.AIRLINE_NAME = 'Mumbai Airlines');

begin
     for rec in C1 loop
     dbms_output.put_line('Name is ' || rec.NAME);
     dbms_output.put_line('Passport number is ' || rec.PASSPORT_NO);
     end loop;
exception
     when NO_DATA_FOUND then
        dbms_output.put_line('No data present');
     when TOO_MANY_ROWS then
        dbms_output.put_line('Multiple rows returned for a query');
     when INVALID_NUMBER then
        dbms_output.put_line('Conversion of character string to a number');
     when DUP_VAL_ON_INDEX then
        dbms_output.put_line('Attempt to insert/update in unique database column');
     when others then
        dbms_ouput.put_line('Some runtime error occured.');
end;
```

8. SELECT NAME, PASSPORT NUMBER OF PASSENGERS WHERE CLASS IS First Class

```
declare
    cursor C1 is SELECT P.NAME, P.PASSPORT_NO FROM PASSENGER P WHERE P.TICKET_NO IN (SELECT
T.TICKET_NO FROM TICKET T WHERE T.CLASS = 'First Class');
begin
     for rec in C1 loop
     dbms_output.put_line('Name is ' || rec.NAME);
     dbms_output.put_line('Passport number is ' || rec.PASSPORT_NO);
     end loop;
exception
     when NO_DATA_FOUND then
        dbms_output.put_line('No data present');
     when TOO_MANY_ROWS then
        dbms_output.put_line('Multiple rows returned for a query');
     when INVALID_NUMBER then
        dbms_output.put_line('Conversion of character string to a number');
     when DUP_VAL_ON_INDEX then
        dbms_output.put_line('Attempt to insert/update in unique database column');
     when others then
        dbms_ouput.put_line('Some runtime error occured.');
end;

exception
```

```
    when NO_DATA_FOUND then

        dbms_output.put_line('No data found');

    when others then

        dbms_output.put_line('Some run-time error occured');

end;
```

9. SELECT PASSENGER NAME HAVING MULTIPLE PHONE NUMBERS:

```
begin

  declare

    nam1 PASSENGER.NAME%type;

  begin

      SELECT P.NAME into nam1 FROM PASSENGER P WHERE
P.PASSPORT_NO IN (SELECT PPN.PASSPORT_NO FROM
PASSENGER_PHONE_NO PPN GROUP BY PPN.PASSPORT_NO
HAVING COUNT(*)>1);

 exception

    when NO_DATA_FOUND then

      dbms_output.put_line('No data present');

    when TOO_MANY_ROWS then

      dbms_output.put_line('Multiple rows returned for a query');

    when INVALID_NUMBER then

      dbms_output.put_line('Conversion of character string to a number');

    when DUP_VAL_ON_INDEX then

      dbms_output.put_line('Attempt to insert/update in unique database
column');

    when others then
```

```
        dbms_ouput.put_line('Some runtime error occured.');

end;

exception

    when NO_DATA_FOUND then

        dbms_output.put_line('No data found');

    when others then

        dbms_output.put_line('Some run-time error occured');

end;
```

10. SELECT PASSENGER NAME, SEX, TICKET NUMBER HAVING FLIGHT DESTINATION AS Delhi

```
begin
  declare
    cursor C1 is SELECT P.NAME, P.SEX,
P.TICKET_NO FROM PASSENGER P
WHERE P.FLIGHT_NO IN (SELECT
F.FLIGHT_NO FROM FLIGHT F WHERE
F.DESTINATION = 'Delhi');

  begin
      for rec in C1 loop
      dbms_output.put_line('Name is ' ||
rec.NAME);
      dbms_output.put_line('Gender is ' ||
rec.SEX);
      dbms_output.put_line('Name is ' ||
rec.TICKET_NO);
      end loop;
  exception
      when NO_DATA_FOUND then
        dbms_output.put_line('No data
present');
      when TOO_MANY_ROWS then
        dbms_output.put_line('Multiple rows
returned for a query');
      when INVALID_NUMBER then
        dbms_output.put_line('Conversion of
character string to a number');
      when DUP_VAL_ON_INDEX then
        dbms_output.put_line('Attempt to
insert/update in unique database column');
      when others then
        dbms_ouput.put_line('Some runtime
error occured.');
  end;

exception

   when NO_DATA_FOUND then

      dbms_output.put_line('No data found');
```

```
      when others then

            dbms_output.put_line('Some run-time error occured');

end;
```

//COMPLEX QURIES:
 1. SELECT EMPLOYEE ID, PHONE NUMBER, AND AIRPORT NAME WHERE CITY IS Delhi

```
begin
 declare
    cursor C1 is select E.E_ID,P.PHONE_NO,A.AIRPORT_NAME from EMPLOYEE E,EMP_PHONE_NO
 P,AIRPORT A where E.E_ID=P.E_ID and E.AIRPORT_NAME=A.AIRPORT_NAME and A.CITY in
 ('Delhi');
 begin
      for rec in C1 loop
      dbms_output.put_line('ID is ' || rec.E_ID);
      dbms_output.put_line('Phone Number is ' || rec.PHONE_NO);
      dbms_output.put_line('Airport Name is ' || rec.AIRPORT_NAME);
      end loop;
 exception
      when NO_DATA_FOUND then
        dbms_output.put_line('No data present');
      when TOO_MANY_ROWS then
        dbms_output.put_line('Multiple rows returned for a query');
      when INVALID_NUMBER then
        dbms_output.put_line('Conversion of character string to a number');
      when DUP_VAL_ON_INDEX then
        dbms_output.put_line('Attempt to insert/update in unique database column');
      when others then
        dbms_ouput.put_line('Some runtime error occured.');
end;

exception

   when NO_DATA_FOUND then

        dbms_output.put_line('No data found');

   when others then

        dbms_output.put_line('Some run-time error occured');

end;
```

 2. Select children (with age 10 or less) Senior Citizens (with age 60 or greater) - Passport Number,Name,
 Age, Flight Number, Ticket Number, travelling from Delhi.

```
begin
declare
    cursor C1 is select P.PASSPORT_NO, P.NAME, P.AGE,
P.FLIGHT_NO, T.TICKET_NO from PASSENGER P,
TICKET T where T.SOURCE in ('Delhi') and (P.AGE >= 60
or P.AGE <= 10);
begin
    for rec in C1 loop
    dbms_output.put_line('Passport number is ' ||
rec.PASSPORT_NO);
    dbms_output.put_line('Name is ' || rec.NAME);
    dbms_output.put_line('Flight No is ' || rec.FLIGHT_NO);
    dbms_output.put_line('Ticket No is ' ||
rec.TICKET_NO);
    end loop;
exception
    when NO_DATA_FOUND then
      dbms_output.put_line('No data present');
    when TOO_MANY_ROWS then
      dbms_output.put_line('Multiple rows returned for a
query');
    when INVALID_NUMBER then
      dbms_output.put_line('Conversion of character string
to a number');
    when DUP_VAL_ON_INDEX then
      dbms_output.put_line('Attempt to insert/update in
unique database column');
    when others then
      dbms_ouput.put_line('Some runtime error occured.');
end;

exception

   when NO_DATA_FOUND then

      dbms_output.put_line('No data found');

   when others then

      dbms_output.put_line('Some run-time error occured');

end;


// Views in DBMS

 CREATE  TABLE tblAirport( AIRPORT_NAME
 VARCHAR(20) NOT NULL,
      CITY VARCHAR(20),
      STATE VARCHAR(20),
```

```sql
PRIMARY KEY (AIRPORT_NAME)
)

describe tblAIRPORT

CREATE TABLE tblAirline(
AIRLINE_ID INT NOT NULL,
AIRLINE_NAME VARCHAR(10),
AP_NAME VARCHAR(10),
PRIMARY KEY (AIRLINE_ID)
)

CREATE TABLE tblFLIGHT(
FLIGHT_NO INT NOT NULL,
SOURCE VARCHAR(20) NOT NULL,
DESTINATION VARCHAR(20) NOT NULL,
D_TIME INT,
A_TIME INT,
DURATION INT NOT NULL,
A_ID INT,
FOREIGN KEY (A_ID) REFERENCES tblAirline(AIRLINE_ID)
);


Insert into tblAirport values ('Mum','Mumbai','Maharashtra');Insert

into tblAirport values ('Del','Delhi','Haryana');

Insert into tblAirport values ('Kol','Kolkata','West Bengal');

Insert into tblAirport values ('Ban','Bangalore','Karnataka');select
 * from tblAirport

Insert into tblAirline values (1,'Indigo','Mum');

Insert into tblAirline values (2,'Spicejet','Del'); Insert

into tblAirline values (3,'Air India','Kol'); Insert into

tblAirline values (4,'Air India','Ban');

 select * from tblAirline
Insert into tblFLIGHT values (11,'Mum','Del',2,4,2,1);

Insert into tblFLIGHT values (22,'Del','Kol',3,4,1,2); Insert

into tblFLIGHT values (33,'Kol','Che',11,2,3,3); Insert into

tblFLIGHT values (44,'Ban','Mum',2,3,1,4);select * from

tblFLIGHT
```

```
update tblAirport set AIRPORT_NAME='Mumb', CITY='Mumbai',STATE='Maharashtra' where
STATE='Karnataka'
```

Q1) Display airline_id, airline_name,AP_name from tblAirline such that airline_ID=A_ID.

```
begin
declare
    cursor C1 is Select AIRLINE_ID, AIRLINE_NAME, AP_NAME from tblAirline join
tblFLIGHT on tblAirline.AIRLINE_ID = tblFLIGHT.A_ID;
begin
      for rec in C1 loop
      dbms_output.put_line('Airline_ID is ' || rec.AIRLINE_ID);
      dbms_output.put_line('AIRLINE_NAME is ' || rec.AIRLINE_NAME);
      dbms_output.put_line('Airport Name is ' || rec.AP_NAME);
      end loop;
exception
      when NO_DATA_FOUND then
         dbms_output.put_line('No data present');
      when TOO_MANY_ROWS then
         dbms_output.put_line('Multiple rows returned for a query');
      when INVALID_NUMBER then
         dbms_output.put_line('Conversion of character string to a number');
      when DUP_VAL_ON_INDEX then
         dbms_output.put_line('Attempt to insert/update in unique database column');
      when others then
         dbms_ouput.put_line('Some runtime error occured.');
 end;

exception

   when NO_DATA_FOUND then

        dbms_output.put_line('No data found');

   when others then

        dbms_output.put_line('Some run-time error occured');

end;
```

```sql
CREATE TABLE AAIRPORT(
    AIRPORT_NAME VARCHAR(20) NOT NULL,
    CITY VARCHAR(20),
    STATE VARCHAR(20), PRIMARY
 KEY (AIRPORT_NAME)
);

INSERT INTO AAIRPORT VALUES('mumbai', 'mumbai', 'maharashtra');
INSERT INTO AAIRPORT VALUES('delhi', 'delhi', 'delhi');
INSERT INTO AAIRPORT VALUES('pune', 'pune', 'maharashtra');SELECT *

FROM AAIRPORT;

CREATE OR REPLACE TRIGGER AFTER_INSERT_TR
AFTER INSERT ON AIRPORT
FOR EACH ROW
BEGIN
dbms_output.put_line('insert successfully');END;

INSERT INTO AAIRPORT VALUES('A', 'A', 'A');

DROP TRIGGER AFTER_INSERT_TR;

CREATE OR REPLACE TRIGGER BEFORE_INSERT_TRBEFORE
INSERT ON AIRPORT
FOR EACH ROW
BEGIN
 :new.AIRPORT_NAME := TRIM(:new.AIRPORT_NAME);
 :new.CITY := TRIM(:new.CITY);
 :new.STATE := TRIM(:new.STATE);
END;

INSERT INTO AIRPORT VALUES('B   ','B     ','B ');

SELECT * FROM AAIRPORT;

DROP TRIGGER BEFORE_INSERT_TR;
```

--Procedure

Q1) Write a procedure that will add a new airport to the AIRPORT table using procedure.

```
create or replace Procedure add3(n in varchar , c in varchar,s in varchar) is
    begin
        insert into AIRPORT(AIRPORT_NAME,CITY,STATE) values(n,c,s);
    end;

declare
  nam2 AIRPORT.AIRPORT_NAME%type;
  cit2 AIRPORT.CITY%type;
  stat2 AIRPORT.STATE%type;
begin
  nam2:='Dabolim Airport';
  cit2:='Dabolim';
  stat2:='Goa';
  add3(nam2,cit2,stat2);
end;
select * from AIRPORT;
```

Q2) Write a procedure to add a new airline in AIRLINE table using procedure.

```
create or replace procedure add4(num5 in number,nam10 in varchar,nam11 in varchar) is
  begin
    insert into AIRLINE values(num5,nam10,nam11);
  end;

declare
  nam2 AIRLINE.AIRLINE_ID%type;
  cit2 AIRLINE.AIRLINE_NAME%type;
  stat2 AIRLINE.AIRPORT_NAME%type;
begin
  nam2:=130;
  cit2:='Indigo';
  stat2:='Dabolim Airport';
  add4(nam2,cit2,stat2);
end;

select * from AIRLINE;
```

--Function

Q1) Write a function that will return the number of employees that are working at a particular airport using function.

```
declare
    nam9 EMPLOYEE.AIRPORT_NAME%type;
    ans number;
    function no_of_employee(nam6 in varchar) return number is
    a number;
    begin
        select count(*) into a from EMPLOYEE where AIRPORT_NAME=nam6;
        return a;
    end;
begin
    nam9:='Shivaji';
    ans:=no_of_employee(nam9);
    dbms_output.put_line('No. of employees at '||nam9||' airport are '||ans);
end;
```

Output Screenshots

SQL Worksheet

```
1   CREATE TABLE AIRPORT(
2   AIRPORT_NAME VARCHAR(20) NOT NULL, CITY VARCHAR(20),
3   STATE VARCHAR(20), PRIMARY KEY (AIRPORT_NAME)
4   );
```

Table created.

SQL Worksheet

```
5   CREATE TABLE AIRLINE(
6   AIRLINE_ID INT NOT NULL PRIMARY KEY,
7   AIRLINE_NAME VARCHAR(10),
8   AIRPORT_NAME VARCHAR(10),
9   FOREIGN KEY (AIRPORT_NAME) REFERENCES AIRPORT(AIRPORT_NAME)
10  );
```

Table created.

SQL Worksheet

```
11  CREATE TABLE CONTAINS( AIRPORT_NAME VARCHAR(20),
12  AIRLINE_ID INT,
13  FOREIGN KEY (AIRPORT_NAME) REFERENCES AIRPORT(AIRPORT_NAME),
14  FOREIGN KEY (AIRLINE_ID) REFERENCES AIRLINE(AIRLINE_ID)
15  );
16
```

Table created.

Output Screenshots

SQL Worksheet

```
16
17  CREATE TABLE FLIGHT(
18  FLIGHT_NO INT NOT NULL PRIMARY KEY,
19  SOURCE VARCHAR(20) NOT NULL,
20  DESTINATION VARCHAR(20) NOT NULL,
21  D_TIME DATE,
22  A_TIME DATE,
23  DURATION INT NOT NULL, AIRLINE_ID INT,
24  FOREIGN KEY (AIRLINE_ID) REFERENCES AIRLINE(AIRLINE_ID)
25  );
26
```

Table created.

SQL Worksheet

```
26
27  CREATE TABLE EMPLOYEE(
28  E_ID INT PRIMARY KEY,
29  NAME VARCHAR(20),
30  ADDRESS VARCHAR(20),
31  SEX VARCHAR(10),
32  SALARY INT,
33  AGE INT,
34  AIRPORT_NAME VARCHAR(20),
35  FOREIGN KEY (AIRPORT_NAME) REFERENCES   AIRPORT(AIRPORT_NAME));
36
```

Table created.

Output Screenshots

SQL Worksheet

```
37  CREATE TABLE EMP_PHONE_NO(
38  E_ID INT,
39  PHONE_NO VARCHAR(11),
40  FOREIGN KEY (E_ID) REFERENCES EMPLOYEE(E_ID)
41  );
42
43  CREATE TABLE PASSENGER(
44  PASSPORT_NO VARCHAR(20) NOT NULL PRIMARY KEY,
45  NAME VARCHAR(20) NOT NULL, ADDRESS VARCHAR(20),
46  SEX VARCHAR(5), DOB DATE,
47  AGE INT, FLIGHT_NO INT,
48  TICKET_NO VARCHAR(20),
49  FOREIGN KEY (FLIGHT_NO) REFERENCES FLIGHT(FLIGHT_NO));
50
```

Table created.

SQL Worksheet

```
51  CREATE TABLE SERVES(
52  E_ID INT,
53  PASSPORT_NO VARCHAR(20),
54  FOREIGN KEY (E_ID) REFERENCES EMPLOYEE(E_ID),
55  FOREIGN KEY (PASSPORT_NO) REFERENCES PASSENGER(PASSPORT_NO)
56  );
57
58  CREATE TABLE PASSENGER_PHONE_NO( PASSPORT_NO VARCHAR(20),
59  PHONE_NO VARCHAR(11),
60  FOREIGN KEY (PASSPORT_NO) REFERENCES PASSENGER(PASSPORT_NO));
61
```

Table created.

SQL Worksheet

```
63  CREATE TABLE TICKET(
64  TICKET_NO VARCHAR(20) NOT NULL PRIMARY KEY,
65  AIRLINE_NAME VARCHAR(20) NOT NULL,
66  PRICE INT NOT NULL,
67  SEAT_NO VARCHAR(20),
68  CLASS VARCHAR(5),
69  D_TIME Date,
70  A_TIME Date,
71  DURATION INT,
72  DESTINATION VARCHAR(20), SOURCE VARCHAR(20), PASSPORT_NO VARCHAR(20), PASSENGER_NAME VARCHAR(20),
73  FOREIGN KEY (PASSPORT_NO) REFERENCES PASSENGER(PASSPORT_NO));
74
```

Table created.

Output Screenshots

```
74
75   ALTER TABLE AIRPORT DROP COLUMN STATE;
76   ALTER TABLE AIRPORT ADD STATE VARCHAR(20);
77   ALTER TABLE AIRPORT RENAME COLUMN AIRPORT_NAME TO AIR_NAME;
78   ALTER TABLE AIRPORT RENAME TO AIRPORT_DETAILS;
79   ALTER TABLE AIRPORT_DETAILS RENAME TO AIRPORT;
80   ALTER TABLE AIRPORT RENAME COLUMN AIR_NAME TO AIRPORT_NAME;
81
```

Table altered.

Table altered.

Table altered.

Table altered.

Table altered.

Table altered.

```
81
82   INSERT INTO AIRPORT VALUES ('Shivaji', 'Mumbai', 'Maharashtra');
83   INSERT INTO AIRPORT VALUES ('Indra Gandhi Int', 'Delhi', 'Maharashtra');
84   SELECT * FROM AIRPORT;
85
```

1 row(s) inserted.

1 row(s) inserted.

AIRPORT_NAME	CITY	STATE
Shivaji	Mumbai	Maharashtra
Indra Gandhi Int	Delhi	Maharashtra

Download CSV
2 rows selected.

Output Screenshots

```
85
86   INSERT INTO EMPLOYEE VALUES(13,'parth','mumbai','M',40000,19,'Shivaji');
87   INSERT INTO EMPLOYEE VALUES(14,'ramesh','mumbai','M',30000,20,'Shivaji');
88   INSERT INTO EMPLOYEE VALUES(15,'ram','delhi','M',20000,23,'Indra Gandhi Int');
89   INSERT INTO EMPLOYEE VALUES(16,'rani','delhi','F',22000,19,'Indra Gandhi Int');
90
91   select * from EMPLOYEE;
92
93
94
```

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

E_ID	NAME	ADDRESS	SEX	SALARY	AGE	AIRPORT_NAME
13	parth	mumbai	M	40000	19	Shivaji
14	ramesh	mumbai	M	30000	20	Shivaji
15	ram	delhi	M	20000	23	Indra Gandhi Int
16	rani	delhi	F	22000	19	Indra Gandhi Int

```
92
93      INSERT INTO EMP_PHONE_NO VALUES(13,'1111111111');
94      INSERT INTO EMP_PHONE_NO VALUES(14,'3333333333');
95      INSERT INTO EMP_PHONE_NO VALUES(16,'6666666666');
96      select * from EMP_PHONE_NO;
```

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

E_ID	PHONE_NO
13	1111111111
14	3333333333
16	6666666666

Download CSV

3 rows selected.

Output Screenshots

```
 99
100    INSERT INTO AIRLINE VALUES(123,'MLines','Shivaji');
101    INSERT INTO AIRLINE VALUES(124,'Dlines','Indra Gandhi Int');
102    select * from AIRLINE;
103    |
104
105
```

AIRLINE_ID	AIRLINE_NAME	AIRPORT_NAME
124	Dlines	Indra Gandhi Int
123	MLines	Shivaji

Download CSV

2 rows selected.

```
103
104    INSERT INTO FLIGHT VALUES(12345,'Mumbai','Delhi', to_date('20-FEB-2022 4:00 am','dd-mon-
105    yyyy hh:mi am'),to_date('20-feb-2022 8:30 am','dd-mon-yyyy hh:mi am'),360,123);
106    INSERT INTO FLIGHT VALUES(12356,'Delhi', 'Mumbai', to_date('20-02-2022 10:00 pm','dd-mm-
107    yyyy hh:mi am'),to_date('21-02-2022 4:00 am','dd-mm-yyyy hh:mi am'), 180,123);
108    INSERT INTO FLIGHT VALUES(12389,'Delhi', 'Mumbai', to_date('24-02-2022 9:15 am','dd-mm-
109    yyyy hh:mi am'),to_date('25-02-2022 9:30 am','dd-mm-yyyy hh:mi am'), 150,123);
110
111    select * from FLIGHT;|
112
```

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

FLIGHT_NO	SOURCE	DESTINATION	D_TIME	A_TIME	DURATION	AIRLINE_ID
12345	Mumbai	Delhi	20-FEB-22	20-FEB-22	360	123
12356	Delhi	Mumbai	20-FEB-22	21-FEB-22	180	123
12389	Delhi	Mumbai	24-FEB-22	25-FEB-22	150	123

Download CSV

3 rows selected.

Output Screenshots

```
112
113    INSERT INTO PASSENGER VALUES(123,'Parth','A22','Male',date'2002-03-28',5,'12356',786);
114    INSERT INTO PASSENGER VALUES(456, 'Tushar', 'B22', 'Male', date'2001-08-12', 19, '12345', 777);
115    INSERT INTO PASSENGER VALUES(789, 'Raj', 'D45', 'Male', date'1972-06-13', 64, '12345', 786);
116    SELECT * from PASSENGER;
117
118    ◄
```

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

PASSPORT_NO	NAME	ADDRESS	SEX	DOB	AGE	FLIGHT_NO	TICKET_NO
123	Parth	A22	Male	28-MAR-02	5	12356	786
456	Tushar	B22	Male	12-AUG-01	19	12345	777
789	Raj	D45	Male	13-JUN-72	64	12345	786

Download CSV

3 rows selected.

```
119
120    INSERT INTO TICKET VALUES(786, 'SpiceJet', 6000,'A-2','First',to_date('20-FEB-2022 4:00
121    am','dd-mon-yyyy hh:mi am'),to_date('20-feb-2022 8:30 am','dd-mon-yyyy hh:mi am'),5, 'banglore','delhi',123,'Parth');
122    INSERT INTO TICKET VALUES(777, 'Mumbai Airlines',4000,'H-42','Secon',to_date('24-02-2022
123    9:15 am','dd-mm-yyyy hh:mi am'),to_date('25-02-2022 9:30 am','dd-mm-yyyy hh:mi am'),4,'goa','chandigarh',456,'Tushar');
124    select * from TICKET;
125
126    ◄
```

1 row(s) inserted.

1 row(s) inserted.

TICKET_NO	AIRLINE_NAME	PRICE	SEAT_NO	CLASS	D_TIME	A_TIME	DURATION	DESTINATION	SOURCE	PASSPORT_NO	PASSENGER_NAME
786	SpiceJet	6000	A-2	First	20-FEB-22	20-FEB-22	5	banglore	delhi	123	Parth
777	Mumbai Airlines	4000	H-42	Secon	24-FEB-22	25-FEB-22	4	goa	chandigarh	456	Tushar

Download CSV

2 rows selected.

Output Screenshots

```
126
127    INSERT INTO PASSENGER_PHONE_NO VALUES(123,'1111');
128    INSERT INTO PASSENGER_PHONE_NO VALUES(456,'3333333333');
129    INSERT INTO PASSENGER_PHONE_NO VALUES(789,'6666666666');
130    select * from PASSENGER_PHONE_NO;
131    |
```

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

PASSPORT_NO	PHONE_NO
123	1111
456	3333333333
789	6666666666

Download CSV
3 rows selected.

// Questions

```
4     declare
5         cursor C1 is  select NAME,SEX from EMPLOYEE where E_ID in (SELECT E_ID FROM EMP_PHONE_NO WHERE EMPLOYEE.E_ID=EMP_PHONE_NO.E_ID);
6     begin
7             for rec in C1 loop
8             dbms_output.put_line('Name is ' || rec.NAME);
9             dbms_output.put_line('Gender is ' || rec.SEX);
10            end loop;
11    end;
12
13    SELECT E.NAME, E.SALARY
14    FROM EMPLOYEE E WHERE E_ID IN (SELECT EP.E_ID
15    FROM EMP_PHONE_NO EP WHERE EP.E_ID=E.E_ID);
16
```

```
Statement processed.
Name is parth
SEX is M
Name is ramesh
SEX is M
Name is rani
SEX is F
```

Output Screenshots

```
  3
  4   declare
  5       cursor C1 is select E.E_ID, E.NAME, E.SALARY from EMPLOYEE E where E.E_ID in (select EP.E_ID from EMP_PHONE_NO EP where EP.E_ID in (1,5));
  6   begin
  7       for rec in C1 loop
  8           dbms_output.put_line('Name is ' || rec.NAME);
  9           dbms_output.put_line('Gender is ' || rec.SALARY);
 10       end loop;
 11   end;
 12
```

Statement processed.

```
  8
  9   declare
 10       cursor C1 is select E.NAME, E.E_ID from EMPLOYEE E where E.AIRPORT_NAME in (select A.AIRPORT_NAME from AIRPORT A where A.CITY='Mumbai');
 11   begin
 12       for rec in C1 loop
 13           dbms_output.put_line('Name is ' || rec.NAME);
 14           dbms_output.put_line('Gender is ' || rec.E_ID);
 15       end loop;
 16   end;
 17
 18
 19
```

Statement processed.
Name is parth
Gender is 13
Name is ramesh
Gender is 14

SQL Worksheet   ◇ Clear   🔍 Find   Actions ▾   💾 Save

```
  1
  2   declare
  3       cursor C1 is SELECT E.E_ID, E.NAME, E.SEX FROM EMPLOYEE E WHERE E.E_ID IN (SELECT EP.E_ID FROM EMP_PHONE_NO EP WHERE E.E_ID = EP.E_ID AND EP.E_ID>=3);
  4   begin
  5       for rec in C1 loop
  6           dbms_output.put_line('Name is ' || rec.NAME);
  7           dbms_output.put_line('Gender is ' || rec.E_ID);
  8           dbms_output.put_line('Gender is ' || rec.SEX);
  9       end loop;
 10   end;
 11
 12
```

Statement processed.
Name is parth
Gender is 13
Gender is M
Name is ramesh
Gender is 14
Gender is M
Name is ran1
Gender is 16
Gender is F

SQL Worksheet   ◇ Clear   🔍 Find   Acti

```
  1
  2   declare
  3       cursor C1 is SELECT E.NAME, E.E_ID FROM EMPLOYEE E WHERE E.E_ID IN (SELECT EP.E_ID FROM EMP_PHONE_NO EP GROUP BY EP.E_ID HAVING COUNT(*) > 1);
  4   begin
  5       for rec in C1 loop
  6           dbms_output.put_line('Name is ' || rec.NAME);
  7           dbms_output.put_line('Gender is ' || rec.E_ID);
  8       end loop;
  9   end;
 10
```

Statement processed.

Output Screenshots

```
 3
 4   declare
 5       cursor C1 is SELECT E.NAME, E.ADDRESS, E.AGE, E.SEX FROM EMPLOYEE E WHERE E.AIRPORT_NAME IN (SELECT A.AIRPORT_NAME FROM AIRPORT A WHERE A.CITY in ('Mumbai', 'Delhi'));
 6
 7   begin
 8          for rec in C1 loop
 9          dbms_output.put_line('Name is ' || rec.NAME);
10          dbms_output.put_line('Address is ' || rec.ADDRESS);
11          dbms_output.put_line('AGE is ' || rec.AGE);
12          dbms_output.put_line('Gender is ' || rec.SEX);
13          end loop;
14   end;
15
```

```
Statement processed.
Name is parth
Address is mumbai
AGE is 19
Gender is M
Name is ramesh
Address is mumbai
AGE is 20
Gender is M
Name is ram
Address is delhi
AGE is 23
Gender is M
Name is rani
Address is delhi
AGE is 19
Gender is F
```

```
 1
 2   SELECT E.NAME, E.ADDRESS, E.AGE, E.SEX FROM EMPLOYEE E WHERE E.AIRPORT_NAME IN (SELECT A.AIRPORT_NAME FROM AIRPORT A WHERE A.CITY in ('Mumbai', 'Delhi'));
 3
 4   declare
 5       cursor C1 is SELECT P.NAME, P.PASSPORT_NO FROM PASSENGER P WHERE P.TICKET_NO IN (SELECT T.TICKET_NO FROM TICKET T WHERE T.AIRLINE_NAME = 'Mumbai Airlines');
 6
 7   begin
 8          for rec in C1 loop
 9          dbms_output.put_line('Name is ' || rec.NAME);
10          dbms_output.put_line('Passport number is ' || rec.PASSPORT_NO);
11          end loop;
12   end;
13
14
```

```
Statement processed.
Name is Tushar
Passport number is 456
```

```
 8
 9
10   declare
11       cursor C1 is SELECT P.NAME, P.PASSPORT_NO FROM PASSENGER P WHERE P.TICKET_NO IN (SELECT T.TICKET_NO FROM TICKET T WHERE T.CLASS = 'First Class');
12   begin
13          for rec in C1 loop
14          dbms_output.put_line('Name is ' || rec.NAME);
15          dbms_output.put_line('Passport number is ' || rec.PASSPORT_NO);
16          end loop;
17   end;
18
```

```
Statement processed.
```

```
 7
 8
 9   declare
10       cursor C1 is SELECT P.NAME FROM PASSENGER P WHERE P.PASSPORT_NO IN (SELECT PPN.PASSPORT_NO FROM PASSENGER_PHONE_NO PPN GROUP BY PPN.PASSPORT_NO HAVING COUNT(*)>1);
11   begin
12          for rec in C1 loop
13          dbms_output.put_line('Name is ' || rec.NAME);
14          end loop;
15   end;
16
```

```
Statement processed.
```

Output Screenshots

```
11
12  declare
13      cursor C1 is SELECT P.NAME, P.SEX, P.TICKET_NO FROM PASSENGER P WHERE P.FLIGHT_NO IN (SELECT F.FLIGHT_NO FROM FLIGHT F WHERE F.DESTINATION = 'Delhi');
14
15  begin
16      for rec in C1 loop
17          dbms_output.put_line('Name is ' || rec.NAME);
18          dbms_output.put_line('Gender is ' || rec.SEX);
19          dbms_output.put_line('Name is ' || rec.TICKET_NO);
20      end loop;
21  end;
22
```

```
Statement processed.
Name is Tushar
Gender is Male
Name is 777
Name is Raj
Gender is Male
Name is 786
```

```
14
15
16  declare
17      cursor C1 is select E.E_ID,P.PHONE_NO,A.AIRPORT_NAME from EMPLOYEE E,EMP_PHONE_NO P,AIRPORT A where E.E_ID=P.E_ID and E.AIRPORT_NAME=A.AIRPORT_NAME and A.CITY in ('Delhi');
18  begin
19      for rec in C1 loop
20          dbms_output.put_line('ID is ' || rec.E_ID);
21          dbms_output.put_line('Phone Number is ' || rec.PHONE_NO);
22          dbms_output.put_line('Airport Name is ' || rec.AIRPORT_NAME);
23      end loop;
24  end;
25
```

```
Statement processed.
ID is 16
Phone Number is 6666666666
Airport Name is Indra Gandhi Int
```

```
11
12
13  declare
14      cursor C1 is select P.PASSPORT_NO, P.NAME, P.AGE, P.FLIGHT_NO, T.TICKET_NO from PASSENGER P, TICKET T where T.SOURCE in ('Delhi') and (P.AGE >= 60 or P.AGE <= 10);
15  begin
16      for rec in C1 loop
17          dbms_output.put_line('Passport number is ' || rec.PASSPORT_NO);
18          dbms_output.put_line('Name is ' || rec.NAME);
19          dbms_output.put_line('Flight No is ' || rec.FLIGHT_NO);
20          dbms_output.put_line('Ticket No is ' || rec.TICKET_NO);
21      end loop;
22  end;
23
```

```
Statement processed.
```

Views in DBMS

```
9
10  CREATE TABLE tblAirport(
11  AIRPORT_NAME VARCHAR(20) NOT NULL,
12  CITY VARCHAR(20),
13  STATE VARCHAR(20),
14  PRIMARY KEY (AIRPORT_NAME));
15  |
16  describe tblAIRPORT;
17
```

TABLE TBLAIRPORT

Column	Null?	Type
AIRPORT_NAME	NOT NULL	VARCHAR2(20)
CITY	-	VARCHAR2(20)
STATE	-	VARCHAR2(20)

Download CSV
3 rows selected.

Output Screenshots

```
17
18   CREATE TABLE tblAirline(
19   AIRLINE_ID INT NOT NULL,
20   AIRLINE_NAME VARCHAR(10),
21   AP_NAME VARCHAR(10),
22   PRIMARY KEY (AIRLINE_ID)
23   )
24   CREATE TABLE tblFLIGHT(
25   FLIGHT_NO INT NOT NULL,
26   SOURCE VARCHAR(20) NOT NULL,
27   DESTINATION VARCHAR(20) NOT NULL,
28   D_TIME INT,
29   A_TIME INT,
30   DURATION INT NOT NULL,
31   A_ID INT,
32   FOREIGN KEY (A_ID) REFERENCES tblAirline(AIRLINE_ID)
33   );
34
35
```

Table created.

```
36
37
38   Insert into tblAirport values ('Mum','Mumbai','Maharashtra');
39   Insert into tblAirport values ('Del','Delhi','Haryana');
40   Insert into tblAirport values ('Kol','Kolkata','West Bengal');
41   Insert into tblAirport values ('Ban','Bangalore','Karnataka');
42   select * from tblAirport;
43
44
45
46
```

AIRPORT_NAME	CITY	STATE
Kol	Kolkata	West Bengal
Ban	Bangalore	Karnataka
Mum	Mumbai	Maharashtra
Del	Delhi	Haryana

Download CSV
4 rows selected.

Output Screenshots

```
42    select * from tblAirport;
43
44    Insert into tblAirline values (1,'Indigo','Mum');
45    Insert into tblAirline values (2,'Spicejet','Del');
46    Insert into tblAirline values (3,'Air India','Kol');
47    Insert into tblAirline values (4,'Air India','Ban');
48    select * from tblAirline;
49    |
50
```

1 row(s) inserted.

1 row(s) inserted.

AIRLINE_ID	AIRLINE_NAME	AP_NAME
1	Indigo	Mum
2	Spicejet	Del
3	Air India	Kol
4	Air India	Ban

Download CSV

4 rows selected.

```
50
51    Insert into tblFLIGHT values (11,'Mum','Del',2,4,2,1);
52    Insert into tblFLIGHT values (22,'Del','Kol',3,4,1,2);
53    Insert into tblFLIGHT values (33,'Kol','Che',11,2,3,3);
54    Insert into tblFLIGHT values (44,'Ban','Mum',2,3,1,4);
55    select * from tblFLIGHT;|
56
```

1 row(s) inserted.

1 row(s) inserted.

FLIGHT_NO	SOURCE	DESTINATION	D_TIME	A_TIME	DURATION	A_ID
11	Mum	Del	2	4	2	1
22	Del	Kol	3	4	1	2
33	Kol	Che	11	2	3	3
44	Ban	Mum	2	3	1	4

Download CSV

4 rows selected.

```
4
5
6    declare
7        cursor C1 is Select AIRLINE_ID, AIRLINE_NAME, AP_NAME from tblAirline join tblFLIGHT on tblAirline.AIRLINE_ID = tblFLIGHT.A_ID;
8    begin
9        for rec in C1 loop
10       dbms_output.put_line('Airline_ID is ' || rec.AIRLINE_ID);
11       dbms_output.put_line('AIRLINE_NAME is ' || rec.AIRLINE_NAME);|
12       dbms_output.put_line('Airport Name is ' || rec.AP_NAME);
13       end loop;
14   end;
15
```

```
Statement processed.
Airline_ID is 1
AIRLINE_NAME is Indigo
Airport Name is Mum
Airline_ID is 2
AIRLINE_NAME is Spicejet
Airport Name is Del
Airline_ID is 3
AIRLINE_NAME is Air India
Airport Name is Kol
Airline_ID is 4
AIRLINE_NAME is Air India
Airport Name is Ban
```

Output Screenshots

```
23  |
24  INSERT INTO AAIRPORT VALUES('mumbai', 'mumbai', 'maharashtra');
25  INSERT INTO AAIRPORT VALUES('delhi', 'delhi', 'delhi');
26  INSERT INTO AAIRPORT VALUES('pune', 'pune', 'maharashtra');
27  SELECT * FROM AAIRPORT;
28
```

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

AIRPORT_NAME	CITY	STATE
mumbai	mumbai	maharashtra
delhi	delhi	delhi
pune	pune	maharashtra

Download CSV
3 rows selected.

```
28
29  CREATE OR REPLACE TRIGGER AFTER_INSERT_TR AFTER INSERT ON AIRPORT
30  FOR EACH ROW BEGIN
31  dbms_output.put_line('insert successfully');
32  END;
33  INSERT INTO AAIRPORT VALUES('A', 'A', 'A');
34  |
35
```

1 row(s) inserted.

Output Screenshots

```
34
35  CREATE OR REPLACE TRIGGER BEFORE_INSERT_TR BEFORE INSERT ON AIRPORT
36      FOR EACH ROW BEGIN
37          :new.AIRPORT_NAME := TRIM(:new.AIRPORT_NAME);
38          :new.CITY := TRIM(:new.CITY);
39          :new.STATE := TRIM(:new.STATE);
40  END;
41  INSERT INTO AIRPORT VALUES('B ','B  ','B ');
42  SELECT * FROM AIRPORT;
43
```

AIRPORT_NAME	CITY	STATE
B	B	B
Shivaji	Mumbai	Maharashtra
Indra Gandhi Int	Delhi	Maharashtra

Download CSV

3 rows selected.

// Exception Handling

```
3
4   begin
5       declare
6           nam1 PASSENGER.NAME%type;
7       begin
8           SELECT P.NAME into nam1 FROM PASSENGER P WHERE P.PASSPORT_NO IN (SELECT PPN.PASSPORT_NO FROM PASSENGER_PHONE_NO PPN GROUP BY PPN.PASSPORT_NO HAVING COUNT(*)>1);
9       exception
10          when NO_DATA_FOUND then
11              dbms_output.put_line('No data present');
12          when TOO_MANY_ROWS then
13              dbms_output.put_line('Multiple rows returned for a query');
14          when INVALID_NUMBER then
15              dbms_output.put_line('Conversion of character string to a number');
16          when DUP_VAL_ON_INDEX then
17              dbms_output.put_line('Attempt to insert/update in unique database column');
18      end;
19  exception
20      when NO_DATA_FOUND then
21          dbms_output.put_line('No data present');
22  end;
23
```

Statement processed.
No data present

// Procedure

Output Screenshots

```
29
30  -- to add a new airport using Procedure
31  create or replace Procedure add3(n in varchar , c in varchar,s in varchar) is
32      begin
33          insert into AIRPORT(AIRPORT_NAME,CITY,STATE) values(n,c,s);
34      end;
35
36  declare
37      nam2 AIRPORT.AIRPORT_NAME%type;
38      cit2 AIRPORT.CITY%type;
39      stat2 AIRPORT.STATE%type;
40  begin
41      nam2:='Dabolim Airport';
42      cit2:='Dabolim';
43      stat2:='Goa';
44      add3(nam2,cit2,stat2);
45  end;
46  select * from AIRPORT;
47
48
49
```

AIRPORT_NAME	CITY	STATE
B	B	B
Shivaji	Mumbai	Maharashtra
Indra Gandhi Int	Delhi	Maharashtra
Dabolim Airport	Dabolim	Goa

Download CSV
4 rows selected.

```
57  -- Add a new airline using procedure.
58  create or replace procedure add4(num5 in number,nam10 in varchar,nam11 in varchar) is
59      begin
60          insert into AIRLINE values(num5,nam10,nam11);
61      end;
62
63  declare
64      nam2 AIRLINE.AIRLINE_ID%type;
65      cit2 AIRLINE.AIRLINE_NAME%type;
66      stat2 AIRLINE.AIRPORT_NAME%type;
67  begin
68      nam2:=130;
69      cit2:='Indigo';
70      stat2:='Dabolim Airport';
71      add4(nam2,cit2,stat2);
72  end;
73
74  select * from AIRLINE;
75
76
77
```

AIRLINE_ID	AIRLINE_NAME	AIRPORT_NAME
130	Indigo	Dabolim Airport
123	MLines	Shivaji
124	Dlines	Indra Gandhi Int

Download CSV
3 rows selected.

- Function

Output Screenshots

```
78   declare
79       nam9 EMPLOYEE.AIRPORT_NAME%type;
80       ans number;
81       function no_of_employee(nam6 in varchar) return number is
82       a number;
83       begin
84           select count(*) into a from EMPLOYEE where AIRPORT_NAME=nam6;
85           return a;
86       end;
87   begin
88       nam9:='Shivaji';
89       ans:=no_of_employee(nam9);
90       dbms_output.put_line('No. of employees at '||nam9||' airport are '||ans);
91   end;
92
93
94
95
96
97
```

```
Statement processed.
No. of employees at Shivaji airport are 2
```