**Advanced Database System Design**

**CS632002- Spring 2013**

**Project Deliverable 1**

**Submitted by:**

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1. **a) Create a table PERSON with the columns: FirstName, MiddleInitial, LastName, BirthDate, PersonID.**

CREATE TABLE PERSON(

PersonID INTEGER NOT NULL,

FirstName VARCHAR(30) NOT NULL,

MiddleInitial VARCHAR(5) NOT NULL,

LastName VARCHAR(30) NOT NULL,

BirthDate DATE NOT NULL,

PRIMARY KEY (PersonID));

desc person;

Name Null Type

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PERSONID NOT NULL NUMBER(38)

FIRSTNAME NOT NULL VARCHAR2(30)

MIDDLEINITIAL NOT NULL VARCHAR2(5)

LASTNAME NOT NULL VARCHAR2(30)

BIRTHDATE NOT NULL DATE

1. **Create a table PERSONINTERESTS with the columns: PersonID, Interest.**

CREATE TABLE PERSONINTERESTS(

PersonID INTEGER NOT NULL REFERENCES PERSON (PersonID),

Interest VARCHAR(30) NOT NULL,

PRIMARY KEY (PersonID,Interest));

desc personinterests;

Name Null Type

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PERSONID NOT NULL NUMBER(38)

INTEREST NOT NULL VARCHAR2(30)

1. **Enter 20 tuples into your table PERSON.**

INSERT INTO PERSON VALUES (1001,'John', 'B','Smith','2-MARCH-1985');

INSERT INTO PERSON VALUES (1002,'Franklin', 'T', 'Wong','4-JAN-1981');

INSERT INTO PERSON VALUES (1003,'Alicia', 'J', 'Zelaya','2-FEB-1967');

INSERT INTO PERSON VALUES (1004,'Jennifer','S','Wallace','12-MAY-1950');

INSERT INTO PERSON VALUES (1005,'Ramesh','K','Narayan','20-JUNE-1986');

INSERT INTO PERSON VALUES (1006, 'Joyce', 'A','English','1-MAR-1982');

INSERT INTO PERSON VALUES (1007, 'Ahmed', 'V','Jabbar','18-FEB-1970');

INSERT INTO PERSON VALUES (1008, 'James', 'E', 'Borg','14-JAN-1965');

INSERT INTO PERSON VALUES (1009, 'Mike', 'B', 'Smith','22-MAR-1988');

INSERT INTO PERSON VALUES (1010, 'Frank', 'M', 'Scher''24-JAN-1971');

INSERT INTO PERSON VALUES (1011, 'Alice', 'A', 'Brown','18-FEB-1977');

INSERT INTO PERSON VALUES (1012, 'Jen', 'D', 'Wilson','12-MAY-1955');

INSERT INTO PERSON VALUES (1013, 'Raj', 'P', 'Shah','29-JUNE-1985');

INSERT INTO PERSON VALUES (1014, 'Joy', 'G', 'Clark','16-MAR-1949');

INSERT INTO PERSON VALUES (1015, 'Abner', 'B', 'Lee','11-FEB-1956');

INSERT INTO PERSON VALUES (1016, 'James', 'E', 'Borg','19-JAN-1969');

INSERT INTO PERSON VALUES (1017, 'David', 'A', 'Hall','9-JUNE-1985');

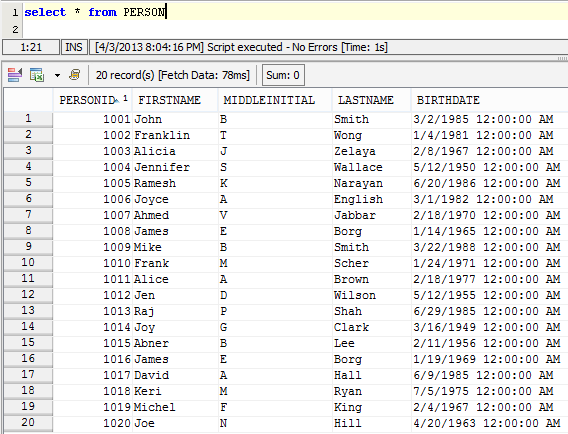
INSERT INTO PERSON VALUES (1018, 'Keri', 'M', 'Ryan','5-JULY-1975');

INSERT INTO PERSON VALUES (1019, 'Michel', 'F', 'King','4-FEB-1967');

INSERT INTO PERSON VALUES (1020, 'Joe', 'N', 'Hill','20-APRIL-1963');

Select \* from Person;

PERSON TABLE OUTPUT:



1. **Enter the following data into the Interest Table:**

INSERT INTO PERSONINTERESTS VALUES (1001, 'Swimming');

INSERT INTO PERSONINTERESTS VALUES (1002, 'Dancing');

INSERT INTO PERSONINTERESTS VALUES (1002, 'Music');

INSERT INTO PERSONINTERESTS VALUES (1003, 'Movies');

INSERT INTO PERSONINTERESTS VALUES (1004, 'Skiing');

INSERT INTO PERSONINTERESTS VALUES (1004, 'Politics');

INSERT INTO PERSONINTERESTS VALUES (1005, 'Swimming');

INSERT INTO PERSONINTERESTS VALUES (1005, 'Running');

INSERT INTO PERSONINTERESTS VALUES (1005, 'Music');

INSERT INTO PERSONINTERESTS VALUES (1006, 'Politics');

INSERT INTO PERSONINTERESTS VALUES (1008, 'Running');

INSERT INTO PERSONINTERESTS VALUES (1008, 'Swimming');

INSERT INTO PERSONINTERESTS VALUES (1009, 'Weapons');

INSERT INTO PERSONINTERESTS VALUES (1009, 'Toy\_Soldiers');

INSERT INTO PERSONINTERESTS VALUES (1009, 'Kites');

INSERT INTO PERSONINTERESTS VALUES (1010, 'Stamps');

INSERT INTO PERSONINTERESTS VALUES (1011, 'Coins');

INSERT INTO PERSONINTERESTS VALUES (1012, 'Politics');

INSERT INTO PERSONINTERESTS VALUES (1012, 'Skiing');

INSERT INTO PERSONINTERESTS VALUES (1013, 'Swimming');

INSERT INTO PERSONINTERESTS VALUES (1014, 'Dancing');

INSERT INTO PERSONINTERESTS VALUES (1015, 'Weapons');

INSERT INTO PERSONINTERESTS VALUES (1015, 'Skiing');

INSERT INTO PERSONINTERESTS VALUES (1015, 'Politics');

INSERT INTO PERSONINTERESTS VALUES (1016, 'Stamps');

INSERT INTO PERSONINTERESTS VALUES (1017, 'Coins');

INSERT INTO PERSONINTERESTS VALUES (1018, 'Stamps');

INSERT INTO PERSONINTERESTS VALUES (1018, 'Coins');

INSERT INTO PERSONINTERESTS VALUES (1018, 'Music');

INSERT INTO PERSONINTERESTS VALUES (1019, 'Running');

INSERT INTO PERSONINTERESTS VALUES (1020, 'Cycling');

Select \* from Personinterets;

PERSONINTERESTS TABLE OUTPUT:



1. **Write an SQL Query which will select the complete names, PersonIDs and Birthdates of all people which have exactly the two interests Politics and Cycling. In other words, it should list the names (and bdates) of people that have both interests Politics AND Skiing, but that DO NOT HAVE any other interests.**

SELECT P.PersonID,FirstName,LastName,BirthDate

FROM PERSON P

Where P.PERSONID in (select P1.PERSONID

FROM PERSONINTERESTS P1

WHERE P1.INTEREST = 'Skiing')

and P.PERSONID IN (SELECT P2.PERSONID

FROM PERSONINTERESTS P2

WHERE P2.INTEREST = 'Politics')

and P.PERSONID NOT IN (SELECT P3.PERSONID

FROM PERSONINTERESTS P3

WHERE P3.INTEREST <> 'Politics' AND P3.INTEREST <> 'Skiing')

Output:

PERSONID FIRSTNAME LASTNAME BIRTHDATE

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1004 Jennifer Wallace 12-MAY-50

1012 Jen Wilson 12-MAY-55

1. **Write a program/stored procedure possibly using a cursor which displays in the output all the currently existing interests exactly once.**

create or replace procedure all\_interests AS cursor c1 is select distinct interest from personinterests;

allint personinterests.interest%type;

BEGIN

OPEN c1;

LOOP

fetch c1 INTO allint;

if c1%NOTFOUND then exit;

end if;

DBMS\_OUTPUT.put\_line(allint);

END LOOP;

CLOSE c1;

END;

Output:

Connecting to the database adbms-project.

Coins

Movies

Politics

Stamps

Cycling

Running

Weapons

Swimming

Kites

Dancing

Music

Skiing

Toy\_Soldiers

Process exited.

Disconnecting from the database adbms-project.

1. **Write program/stored procedure possibly using two cursors which displays in the output**

**all pairs of existing interests exactly once.**

create or replace procedure PAIR\_INTERESTS AS cursor c1 is select distinct interest

from personinterests;

x personinterests.interest%type;

cursor c2 is select distinct interest from personinterests;

y personinterests.interest%type;

num\_interest integer;

i integer;

j integer;

BEGIN

select count(distinct interest) into num\_interest from personinterests;

OPEN c1;

for i in 1..num\_interest

LOOP

fetch c1 INTO x;

OPEN c2;

for j in 1..num\_interest

LOOP

fetch c2 INTO y;

if c2%NOTFOUND then exit;

END if;

if j>i

then DBMS\_OUTPUT.put\_line(x||' '||y);

else DBMS\_OUTPUT.put\_line('');

end if;

END LOOP;

CLOSE c2;

END LOOP;

CLOSE c1;

END;

Output:

Connecting to the database adbms-project.

Coins Movies

Coins Politics

Coins Stamps

Coins Cycling

Coins Running

Coins Weapons

Coins Swimming

Coins Kites

Coins Dancing

Coins Music

Coins Skiing

Coins Toy\_Soldiers

Movies Politics

Movies Stamps

Movies Cycling

Movies Running

Movies Weapons

Movies Swimming

Movies Kites

Movies Dancing

Movies Music

Movies Skiing

Movies Toy\_Soldiers

Politics Stamps

Politics Cycling

Politics Running

Politics Weapons

Politics Swimming

Politics Kites

Politics Dancing

Politics Music

Politics Skiing

Politics Toy\_Soldiers

Stamps Cycling

Stamps Running

Stamps Weapons

Stamps Swimming

Stamps Kites

Stamps Dancing

Stamps Music

Stamps Skiing

Stamps Toy\_Soldiers

Cycling Running

Cycling Weapons

Cycling Swimming

Cycling Kites

Cycling Dancing

Cycling Music

Cycling Skiing

Cycling Toy\_Soldiers

Running Weapons

Running Swimming

Running Kites

Running Dancing

Running Music

Running Skiing

Running Toy\_Soldiers

Weapons Swimming

Weapons Kites

Weapons Dancing

Weapons Music

Weapons Skiing

Weapons Toy\_Soldiers

Swimming Kites

Swimming Dancing

Swimming Music

Swimming Skiing

Swimming Toy\_Soldiers

Kites Dancing

Kites Music

Kites Skiing

Kites Toy\_Soldiers

Dancing Music

Dancing Skiing

Dancing Toy\_Soldiers

Music Skiing

Music Toy\_Soldiers

Skiing Toy\_Soldiers

Process exited.

Disconnecting from the database adbms-project.

1. **(a) Create a new table PAIRSINTERESTS. This table should have two columns**

**called Interest1, Interest2.**

CREATE TABLE PAIRINTERESTS(

Interest1 VARCHAR(30) NOT NULL,

Interest2 VARCHAR(30) NOT NULL,

PRIMARY KEY(Interest1,Interest2));

desc pairinterests

Name Null Type

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INTEREST1 NOT NULL VARCHAR2(30)

INTEREST2 NOT NULL VARCHAR2(30)

**(b) Extend and redo question 4 so that all pairs of interests displayed there are also**

**stored in your new table PAIRSINTERESTS**.

create or replace procedure PAIR\_INTERESTS AS cursor c1 is select distinct interest

from personinterests;

x personinterests.interest%type;

cursor c2 is select distinct interest from personinterests;

y personinterests.interest%type;

i integer;

j integer;

BEGIN

OPEN c1;

i:=0;

LOOP

i:=i+1;

fetch c1 INTO x;

if c1%NOTFOUND then exit;

END if;

OPEN c2;

LOOP

j:=i+1;

fetch c2 INTO y;

if c2%NOTFOUND then exit;

END if;

DBMS\_OUTPUT.put\_line('interest1:'||x||'interest2:'||y);

END LOOP;

CLOSE c2;

END LOOP;

CLOSE c1;

END;

**OUTPUT:**

SQL> select \* from pairinterests;

INTEREST1 INTEREST2

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Coins Movies

Coins Politics

Coins Stamps

Coins Cycling

Coins Running

Coins Weapons

Coins Swimming

Coins Kites

Coins Dancing

Coins Music

Coins Skiing

INTEREST1 INTEREST2

------------------------------ ------------------------------

Coins Toy\_Soldiers

Movies Politics

Movies Stamps

Movies Cycling

Movies Running

Movies Weapons

Movies Swimming

Movies Kites

Movies Dancing

Movies Music

Movies Skiing

INTEREST1 INTEREST2

------------------------------ ------------------------------

Movies Toy\_Soldiers

Politics Stamps

Politics Cycling

Politics Running

Politics Weapons

Politics Swimming

Politics Kites

Politics Dancing

Politics Music

Politics Skiing

Politics Toy\_Soldiers

INTEREST1 INTEREST2

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Stamps Cycling

Stamps Running

Stamps Weapons

Stamps Swimming

Stamps Kites

Stamps Dancing

Stamps Music

Stamps Skiing

Stamps Toy\_Soldiers

Cycling Running

Cycling Weapons

INTEREST1 INTEREST2

------------------------------ ------------------------------

Cycling Swimming

Cycling Kites

Cycling Dancing

Cycling Music

Cycling Skiing

Cycling Toy\_Soldiers

Running Weapons

Running Swimming

Running Kites

Running Dancing

Running Music

INTEREST1 INTEREST2

------------------------------ ------------------------------

Running Skiing

Running Toy\_Soldiers

Weapons Swimming

Weapons Kites

Weapons Dancing

Weapons Music

Weapons Skiing

Weapons Toy\_Soldiers

Swimming Kites

Swimming Dancing

Swimming Music

INTEREST1 INTEREST2

------------------------------ ------------------------------

Swimming Skiing

Swimming Toy\_Soldiers

Kites Dancing

Kites Music

Kites Skiing

Kites Toy\_Soldiers

Dancing Music

Dancing Skiing

Dancing Toy\_Soldiers

Music Skiing

Music Toy\_Soldiers

INTEREST1 INTEREST2

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Skiing Toy\_Soldiers