Homework 4

Joseph Mulray

INFO 210

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Part 1:

a.

```
select sailors.sid, name from sailors
join reserves on sailors.sid = reserves.sid
where rating >= 5 and bid=103;
```

```
SQL> select sailors.sid, name from sailors
  2  join reserves on sailors.sid = reserves.sid
  3  where rating >= 5 and bid=103;

       SID NAME
---------- --------------------------------
         4 Zorba

SQL>
```

b.

```
select distinct sailors.sid, sailors.name, age from sailors
join reserves on sailors.sid = reserves.sid
join boats on reserves.bid = boats.bid
where age>30 or (color='red' AND boats.bid=reserves.bid);
```

```
SQL> select distinct
  2  sailors.sid, sailors.name, age from sailors
  3  join reserves on sailors.sid = reserves.sid
  4  join boats on reserves.bid = boats.bid
  5  where age>30 or (color='red' AND
  6  boats.bid=reserves.bid);

       SID NAME                                        AGE
---------- ------------------------------- ----------
         1 Dustin                                       45
         2 Rusty                                        35
         3 Horatio                                      35

SQL>
```

c.

```
select boats.bid, color from boats
join reserves on boats.bid = reserves.bid
join sailors on reserves.sid = sailors.sid
where boats.bid=reserves.bid and name='Horatio';
```

```
SQL> select boats.bid, color from boats
  2  join reserves on boats.bid = reserves.bid
  3  join sailors on reserves.sid = sailors.sid
  4  where boats.bid=reserves.bid and
  5  name='Horatio';

       BID COLOR
---------- ----------------
       101 blue
       102 red

SQL>
```

d.

```
select distinct boats.color from boats
full join reserves on boats.bid = reserves.bid
where reserves.bid is null;
```

```
SQL> select distinct boats.color from boats
  2  full join reserves on boats.bid = reserves.bid
  3  where reserves.bid is null;

COLOR
----------------
red

SQL>
```

e.

```
select reserves.sid, reserves.bid, reserves.day
from reserves
join sailors on reserves.sid = sailors.sid
where name like '%o%';
```

```
SQL> select reserves.sid, reserves.bid, reserves.day
  2  from reserves
  3  join sailors on reserves.sid = sailors.sid
  4  where name like '%o%';

       SID        BID DAY
---------- ---------- ----------
         3        101 07-NOV-12
         3        102 07-AUG-12
         4        103 19-SEP-12

SQL>
```

Part 2:

```
drop table if exists City;
drop table if exists Country;


create table Country(
Country_Name varchar(64) primary key,
Continent varchar(64) not null
);

create table City(
City_Name varchar(128),
Country_Name varchar(128),
isCapital char(3) not null,
Population number not null,
primary key(City_Name, Country_Name),
foreign key (Country_Name) references Country(Country_Name)
);

insert into Country (Country_Name, Continent) values ('US', 'North America');
insert into Country (Country_Name, Continent) values ('Canada', 'North America');
insert into Country (Country_Name, Continent) values ('England', 'Europe');
insert into Country (Country_Name, Continent) values ('Germany', 'Europe');
insert into Country (Country_Name, Continent) values ('France', 'Europe');
insert into Country (Country_Name, Continent) values ('Mali', 'Africa');


insert into City (City_Name, Country_Name, isCapital, Population) values ('New York, NY', 'US'
insert into City (City_Name, Country_Name, isCapital, Population) values ('Washington, DC', 'US
insert into City (City_Name, Country_Name, isCapital, Population) values ('Philadelphia, PA',
insert into City (City_Name, Country_Name, isCapital, Population) values ('Ottawa', 'Canada',
insert into City (City_Name, Country_Name, isCapital, Population) values ('Toronto', 'Canada',
insert into City (City_Name, Country_Name, isCapital, Population) values ('Berlin', 'Germany',
insert into City (City_Name, Country_Name, isCapital, Population) values ('Hamburg', 'Germany'
insert into City (City_Name, Country_Name, isCapital, Population) values ('Bonn', 'Germany', '
insert into City (City_Name, Country_Name, isCapital, Population) values ('Paris', 'France', '
insert into City (City_Name, Country_Name, isCapital, Population) values ('Lyon', 'France', 'n
insert into City (City_Name, Country_Name, isCapital, Population) values ('Bamako', 'Mali', 'y
insert into City (City_Name, Country_Name, isCapital, Population) values ('Timbuktu', 'Mali',
insert into City (City_Name, Country_Name, isCapital, Population) values ('Mopti', 'Mali', 'ye
```

a.

```
select Country.Country_Name from Country
full join City on Country.Country_Name = City.Country_Name
where City_Name is Null;
```

```
SQL> select Country.Country_Name from Country
  2  full join City on Country.Country_Name = City.Country_Name
  3  where City_Name is Null;

COUNTRY_NAME
--------------------------------------------------------------
England

SQL>
```

b.

```
select Country.Continent, Count(Country.Country_Name) as Count, Max(Population) from Country
join City on Country.Country_Name=City.Country_Name
group by Country.Continent;
```

```
SQL> select Country.Continent, Count(Country.Country_Name) as Count, Max(Population) from Country
join City on Country.Country_Name=City.Country_Name
group by Country.Continent;  2    3

CONTINENT                                                                  COUNT
-------------------------------------------------------------- -----------
MAX(POPULATION)
----------------
Africa                                                                         3
      2000000

Europe                                                                         5
      3500000

North America                                                                  5
      8000000

SQL>
```

c.

```
select City.Country_Name, AVG(Population)
from Country
join City on Country.Country_Name=City.Country_Name
group by City.Country_Name;
```

```
SQL> select City.Country_Name, AVG(Population)
from Country
join City on Country.Country_Name=City.Country_Name
group by City.Country_Name;
    2    3    4
COUNTRY_NAME
----------------------------------------------------------------------------
AVG(POPULATION)
----------------
Canada
        3000000

France
        1350000

Germany
      1933333.33


COUNTRY_NAME
----------------------------------------------------------------------------
AVG(POPULATION)
----------------
Mali
      716666.667

US
      3366666.67


SQL>
```