Practice Questions on Writing SQL

A *mover* has an *employee number,* an *address*, a *phone number* and a *driver licence number*. There is also an *indicator* indicating whether the mover is an authorized driver for the company. The value is 'Y' if the employee is an authorized driver; the value is 'N" otherwise.

A *customer* has a unique *customer number,* an *old address*, a *new address,* a *phone number,* and an estimated *capacity* for all the items to be moved. A *job assignment* specifies possibly several movers to serve a customer. One of the movers must be the designated driver of a van. Associated with each job assignment is a *date* and the *number of hours served*.

(A *van* has a unique *plate number,* a *weight category* and a *capacity* indicating the size of the van (the latter two attributes not necessarily unique). A *van assignment* designates the driver for the van. The driver is a mover who is authorized to drive. However, the *van* and the *van assignment* part are not needed to answer the following questions.)

Consider the following relations:
Mover(EmployeeNum, Address, PhoneNum, Indicator, DriverLicence)
Customer (CuNum, OldAdr, NwAdr, PhNum, Capty)
Job (JobNum, DriverENum, CuNum, MoveDate, HrSvd)
JobAssist(JobNum, MoverENum)

For each of the following queries, give a **single** SQL statement to express the query.

(a) Find the phone numbers of all the customers moving on December 7, 2006.

(b) Find the phone numbers of all the drivers who have not been given any driving assignment scheduled for December 7, 2006.

(c) Find the customer with the highest capacity in December 2006.

(d) Find the mover(s) who assisted in the highest number of jobs in November 2006.

(e) For each mover who assisted in at least 3 jobs in November 2006, show the total number of hours served in November 2006.

(f) Joe is Mover 101 and is suspected of contacting SARS. Find the movers (not drivers) who worked with Joe in every job that Joe assisted in November 2006.

(g) Find the movers (not drivers) who worked with Joe at least twice in November 2006.

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Answers

(a)
```
select PhNum from Customer, Job
where Customer.CuNum = Job.CuNum
and MoveDate = “Dec 7, 2006”
```

(b)
```
select PhoneNum from Mover
where Indicator = ‘Y’
and EmployeeNum not in
                (select DriverENum from Job
                where MoveDate = “Dec 7, 2006”)
```

(c)
```
select CuNum from Customer, Job
where Customer.CuNum = Job.CuNum
and MoveDate >=“Dec 1, 2006”
and MoveDate <= “Dec 31, 2006”
and Capty >= ALL (select capty  from Customer, Job
                    where Customer.CuNum = Job.CuNum
                    and MoveDate >=“Dec 1, 2006”
                    and MoveDate <= “Dec 31, 2006” )
```

(d)
```
select Temp.MoverENum
from (select MoverENum, count(JobAssist.JobNum) as NovCount
       from JobAssist, Job
      where Job.JobNum = JobAssist.JobNum
      and MoveDate >= “Nov 1, 2006”
     and MoveDate <= “Nov 30, 2006”
     group by MoverENum) as Temp
where Temp.NovCount = (select max(NovCount) from Temp)
```

(e)
```
select MoverENum, sum(HrSvd)
from JobAssist, Job
  where Job.JobNum = JobAssist.JobNum
  and MoveDate >= “Nov 1, 2006”
  and MoveDate <= “Nov 30, 2006”
 group by MoverENum
 having count(JobAssist.JobNum) >= 3
```

(f)
```
select A.MoverENum from JobAssist A
where not exists (
        ( select JobNum from JobAssist, Job
        where MoverENum = 101
        and Job.JobNum = JobAssist.JobNum
        and MoveDate >= “Nov 1, 2006”
        and MoveDate <= “Nov 30, 2006”)
```

```
            except

            (select JobNum from JobAssist, Job
            where MoverENum = A.MoverENum
            and Job.JobNum = JobAssist.JobNum
            and MoveDate >= "Nov 1, 2006"
            and MoveDate <= "Nov 30, 2006")
    )

(g) select J.MoverENum from JobAssist J, Job A, Job B
    where A.MoveDate  >= "Nov 1, 2006"
    and A.MoveDate <= "Nov 30, 2006"
    and B.MoveDate  >= "Nov 1, 2006"
    and B.MoveDate <= "Nov 30, 2006"
    and A.JobNum ≠ B.JobNum
    and J.JobNum = A.JobNum
    and exists
       (select * from JobAssist where MoverENum = 101 and JobNum = A.JobNum)
    and exists
      (select * from JobAssist where MoverENum = 101 and JobNum = B.JobNum)
    and exists
     (select * from JobAssist where MoverENum = J.MoverENum and JobNum = B.JobNum)
```