

Last Name: Sharma

First Name: Kavya

Student ID: W1619309

1. [12.5pts] Find the kind and model of observers of type (kind) camera with their software version being 1.9.

[9pts] SQL Query:

```
SELECT kind, model  
FROM Observer  
WHERE kind = 'camera' AND software_version = '1.9';
```

[3.5pts] Result: (2 Rows)

kind	model
camera	Model 4
camera	Model 1

2. [12.5pts] List the name and email of all PHLoggers who have posted a thought about an interest group they are part of which has the topic of 'exercise'.

[9pts] SQL Query:

```
SELECT PHLogger.name, User.email
FROM PHLogger, User, Thought, About, Member, Interest
WHERE PHLogger.phlid = User.phlid
AND PHLogger.phlid = Thought.phlid
AND Thought.phlid = About.phlid
AND Thought.tnum = About.tnum
AND PHLogger.phlid = Member.phlid
AND About.iname = Member.iname
AND About.iname = Interest.iname
AND Interest.topic = 'exercise';
```

[3.5pts] Result: (4 Rows)

name	email
Merilyn Dickens	merilyn.dickens@scu.com
Venus Lueilwitz	venus.lueilwitz@scu.com
Charlena Rath	charlena.rath@scu.com
Mac Maggio	mac.maggio@scu.com

3. [12.5pts] Find the name of PHLoggers who member of more than 4 interest groups are. Use subquery.

[9pts] SQL Query:

```
SELECT name
FROM PHLogger
WHERE phlid IN (
    SELECT phlid
    FROM Member
    GROUP BY phlid
    HAVING COUNT(iname) > 4
);
```

[3.5pts] Result: (3 Rows)

name
Michell Sipes
Camellia Hoeger
Dallas Boehm

4. [12.5pts] For all observers of kind 'smartwatch' that have reported blood pressure observations with the lowest value of diastolic, list their model and their manufacturer.

[9pts] SQL Query:

```
SELECT DISTINCT Observer.model, Observer.manufacturer
FROM Observer, Observable, Observation
WHERE Observer.observer_id = Observable.observer_id
AND Observable.observation_id = Observation.observation_id
AND Observer.kind = 'smartwatch'
AND Observable.kind = 'bloodpressure'
AND Observable.diastolic = (
    SELECT MIN(diastolic)
    FROM Observable
    WHERE kind = 'bloodpressure'
);
```

[3.5pts] Result: (2 Rows)

model	manufactur...
Model 2	Microsoft
Model 8	Apple

5. [12.5pts] List all information about the PHLoggers who are a member of interest group that contains the word `exercise` and also have made a PHLG observation that contains the word 'jet skiing' indicating an event of name 'camping'. Use intersection.

[9pts] SQL Query:

```
SELECT *
FROM PHLogger
WHERE phlid IN (
  SELECT phlid
    FROM Member
   JOIN Interest ON Member.iname = Interest.iname
  WHERE Interest.topic LIKE '%exercise%'
INTERSECT
  SELECT Observation.phlid
    FROM Observation
   JOIN PHLG_obs ON Observation.observation_id = PHLG_obs.observation_id
   JOIN Indicate ON Observation.observation_id = Indicate.observation_id
   JOIN Event ON Indicate.eid = Event.eid
  WHERE PHLG_obs.text LIKE '%jet skiing%'
    AND Event.ename = 'camping'
);
```

[3.5pts] Result: (1 Row)

phlid	name	address_stre...	address_city	address_state	address_pcode
37	Connie Kirlin	Grant Ferry	North Benitaville	CA	32816-5956

6. [12.5pts] For each event name containing the word "ball" that has been recorded in more than 3 observations, find the event name along with the number of observations associated with it.

[9pts] SQL Query:

```
SELECT Event.ename, COUNT(Observation.observation_id) AS observation_count
FROM Event, Indicate, Observation
WHERE Event.eid = Indicate.eid
      AND Indicate.observation_id = Observation.observation_id
      AND Event.ename LIKE '%ball%'
GROUP BY Event.ename
HAVING COUNT(Observation.observation_id) > 3;
```

[3.5pts] Result: (3 Rows)

ename	observation_co...
volleyball	6
baseball	5
football	4

7. [12.5pts] Find the eid and ename of Events that that have lasted longer than 45 minutes and are associated with more than 3 Observations. (Hint: use TIMEDIFF())

[9pts] SQL Query:

```
SELECT Event.eid, Event.ename
FROM Event, Indicate, Observation
WHERE Event.eid = Indicate.eid
  AND Indicate.observation_id = Observation.observation_id
  AND TIMEDIFF(Event.end, Event.start) > '00:45:00'
GROUP BY Event.eid, Event.ename
HAVING COUNT(Observation.observation_id) > 3;
```

[3.5pts] Result: (6 Rows)

eid	ename
151	bicycling
2	jet skiing
48	jet skiing
62	meditating
69	meeting
80	rafting

8. [12.5pts] For Users who have a blood pressure observation with diastolic value more than 97 and systolic value more than 196 and a heart rate observation that was made at the same time, list the users phlid, diastolic, systolic, rate and the time when the observations were made (i.e., started).

[9pts] SQL Query:

```
SELECT U.phlid, O1.diastolic, O1.systolic, O2.rate, Obs1.start
FROM User U, Observation Obs1, Observable O1, Observation Obs2, Observable O2
WHERE U.phlid = Obs1.phlid
  AND Obs1.observation_id = O1.observation_id
  AND U.phlid = Obs2.phlid
  AND Obs2.observation_id = O2.observation_id
  AND O1.kind = 'bloodpressure'
  AND O1.diastolic > 97
  AND O1.systolic > 196
  AND O2.kind = 'heartrate'
  AND Obs1.start = Obs2.start;
```

[2pts] Result: (13 Rows)

phlid	diastolic	systolic	rate	start
100	119	198	60	2019-03-01 04:00:00
58	109	198	84	2019-03-02 00:30:00
72	113	197	99	2019-03-04 10:00:00
88	102	198	87	2019-03-07 00:30:00
53	101	198	67	2019-03-11 06:30:00
41	106	199	96	2019-03-13 02:00:00
59	108	197	79	2019-03-14 14:30:00
113	135	198	66	2019-03-17 01:30:00
35	119	199	72	2019-03-17 05:30:00
118	120	198	63	2019-03-18 11:00:00
15	133	198	64	2019-03-19 12:00:00
97	109	199	63	2019-03-20 14:30:00
80	130	197	71	2019-03-21 14:30:00

[1.5 points] Q: Could the same user (the same phlid) appear multiple times in the result?

-- Yes, the same user can appear multiple times.

-- If a user has multiple qualifying blood pressure and heart rate observations at different times, they will be listed multiple times in the result.