

**Question 1 - Formulate the following queries in SQL.**

- a) List all blog sites that Owner *sqlUser* created between 1/1/2017 to 1/2/2017.  
**SELECT** BlogSite  
**FROM** Blog  
**WHERE** Owner = "sqlUser" AND  
DateCreated BETWEEN "2017-01-01" AND "2017-02-01"
- b) Find the average word length of all articles of type 'tech' in blog site 'howtosql.com'  
**SELECT** AVG('Length-in-Words')  
**FROM** Article  
**WHERE** BlogSite = "howtosql.com" AND ArticleType = "tech"
- c) How many Articles does the blog site 'howtosql.com' have?  
**SELECT** COUNT (\*)  
**FROM** Article  
**WHERE** BlogSite = "howtosql.com"
- d) Which Owner(s) have at least 4 blog sites?  
**SELECT** Owner  
**FROM** Blog  
**GROUP BY** Owner  
**HAVING** COUNT (\*) >= 4
- e) Find all blog sites with an owner starting with A.  
**SELECT** DISTINCT Blogsites  
**FROM** Blogs  
**WHERE** Owner LIKE "A%"

**Question 2 - Formulate the following queries in SQL.**

- a) Retrieve the names of employees in department 5 who work more than 10 hours per week on the 'ProductX' project.
- SELECT** LNAME, FNAME  
**FROM** EMPLOYEE, WORKS\_ON, PROJECT  
**WHERE** DNO = 5 AND SSN = ESSN AND  
NO = PNUMBER AND PNAME = "ProductX" AND  
HOURS > 10;

(Solution continues onto next page.)

Alternate solution:

```
SELECT LNAME, FNAME
FROM EMPLOYEE
WHERE DNO = 5 AND SSN IN
    (SELECT ESSN
     FROM WORKS_ON
     WHERE HOURS > 10 AND PNO IN
        (SELECT PNUMBER
         FROM PROJECT
         WHERE PNAME = "ProductX"));
```

- b) List the names of employees who have a dependent with the same first name as themselves.

```
SELECT LNAME, FNAME
FROM EMPLOYEE, DEPENDENT
WHERE SSN = ESSN AND FNAME = DEPENDENT_NAME;
```

Another possible SQL query uses nesting as follows:

```
SELECT LNAME, FNAME
FROM EMPLOYEE
WHERE EXISTS
    (SELECT *
     FROM DEPENDENT
     WHERE FNAME = DEPENDENT_NAME AND SSN = ESSN);
```

- c) For each project, list the project name and the total hours per week (by all employees) spent on that project.

```
SELECT PNAME, SUM (HOURS)
FROM PROJECT, WORKS_ON
WHERE PNUMBER=PNO
GROUP BY PNAME
```

Example Result:

PNAME	SUM(HOURS)
ProductX	52.5
ProductY	37.5
ProductZ	50.0

- d) For each department whose average employee salary is more than \$30000, retrieve the department name and the number of employees working for that department.

```
SELECT DNAME, COUNT (*)
FROM DEPARTMENT, EMPLOYEE
WHERE DNUMBER=DNO
GROUP BY DNAME
HAVING AVG (SALARY) > 30000
```