LAB 5 SOLUTIONS

Exercise 1

Q1	Find the names of all people who work in the Consulting department.
	``` SELECT FIRSTNAME+' '+LASTNAME FROM EMPLOYEES WHERE DEPTCODE IN(SELECT CODE FROM DEPARTMENTS WHERE NAME='CONSULTING'); ```
Q2	Find the total percentage of time assigned to employee Abe Advice.
	``` SELECT (SUM(ASSIGNEDTIME)/ (SELECT SUM(ASSIGNEDTIME) FROM WORKSON))*100 FROM WORKSON WHERE EMPLOYEEID =(SELECT EMPLOYEEID FROM EMPLOYEES WHERE FIRSTNAME+' '+LASTNAME = 'ABE ADVICE') GROUP BY EMPLOYEEID; ```
Q3	Find the names of all departments not currently assigned a project.
	``` SELECT NAME FROM DEPARTMENTS WHERE CODE NOT IN (SELECT DISTINCT DEPTCODE FROM PROJECTS); ```
Q4	Find the first and last names of all employees who make more than the average salary of the people in the Accounting department.
	``` SELECT FIRSTNAME, LASTNAME FROM EMPLOYEES WHERE SALARY>(SELECT AVG(SALARY) FROM EMPLOYEES E,DEPARTMENTS D WHERE E.DEPTCODE=D.CODE AND D.NAME='ACCOUNTING'); ```
Q5	Find the descriptions of all projects that require more than 70% of an employee's time.

	``` SELECT DESCRIPTION FROM PROJECTS WHERE PROJECTID IN(SELECT W1.PROJECTID FROM WORKSON W1 WHERE (W1.ASSIGNEDTIME/(SELECT SUM(W.ASSIGNEDTIME) FROM WORKSON W WHERE W.EMPLOYEEID = W1.EMPLOYEEID GROUP BY W.EMPLOYEEID)>.7)); ```
Q6	Find the first and last name of all employees who are paid more than someone in the Accounting department.

| | ```
SELECT FIRSTNAME, LASTNAME FROM EMPLOYEES WHERE SALARY >
ANY(SELECT SALARY FROM EMPLOYEES E, DEPARTMENTS D WHERE
E.DEPTCODE=D.CODE AND D.NAME='ACCOUNTING');
``` |
| **Q7** | Find the minimum salary of the employees who are paid more than everyone in the Accounting department. |
| | ```
SELECT MIN(SALARY) FROM EMPLOYEES WHERE SALARY > ALL(SELECT
SALARY FROM EMPLOYEES E, DEPARTMENTS D WHERE
E.DEPTCODE=D.CODE AND D.NAME='ACCOUNTING');
``` |
| **Q8** | Find the first and last name of the highest paid employee(s) in the Accounting department. |
| | ```
SELECT FIRSTNAME,LASTNAME FROM EMPLOYEES WHERE SALARY=
(SELECT
MAX(SALARY) FROM EMPLOYEES E,DEPARTMENTS D WHERE
E.DEPTCODE=D.CODE AND D.NAME='ACCOUNTING');
``` |

Exercise 2

Q2	Find the names of all people who work in the Consulting department and who spend more than 20% of their time on the project with ID ADT4MFIA.
| | ```
SELECT FIRSTNAME+' '+LASTNAME AS EMPLOYEES FROM EMPLOYEES WHERE
DEPTCODE IN(
SELECT CODE
FROM DEPARTMENTS
WHERE NAME='CONSULTING') AND EMPLOYEEID IN(
SELECT W1.EMPLOYEEID
FROM WORKSON W1
WHERE W1.PROJECTID='ADT4MFIA' AND W1.ASSIGNEDTIME/(SELECT
SUM(W.ASSIGNEDTIME)
FROM WORKSON W
WHERE W.EMPLOYEEID = W1.EMPLOYEEID GROUP BY W.EMPLOYEEID)>.2);
``` |
| **Q3** | For each employee in the department, find the employee ID and number of assigned hours that the employee is currently working on projects for other departments. Only report an employee if she/he has some current project to which they are assigned more than 50% of the time and the project is for another department. Report the results in ascending order by hours. |
| | ```
SELECT W1.employeeid, SUM(W1.ASSIGNEDTIME) AS HOURS FROM WORKSON W1
WHERE (EXISTS (SELECT PROJECTID FROM WORKSON W WHERE
W.EMPLOYEEID = W1.EMPLOYEEID AND 0.5 < (
W.ASSIGNEDTIME/(SELECT SUM(WO.ASSIGNEDTIME)
FROM WORKSON WO
WHERE W.EMPLOYEEID = WO.EMPLOYEEID AND
WO.PROJECTID NOT IN (
``` |

```sql
SELECT PROJECTID
FROM PROJECTS P, DEPARTMENTS D ,EMPLOYEES E
WHERE P.DEPTCODE=D.CODE AND E.DEPTCODE = D.CODE AND
W.EMPLOYEEID=E.EMPLOYEEID))))) group by W1.employeeid;
```

Q3 Find all departments where all of their employees are assigned to all of their projects.

```sql
SELECT D.NAME FROM DEPARTMENTS D WHERE EXISTS (SELECT
E.FIRSTNAME FROM EMPLOYEES E WHERE E.DEPTCODE = D.CODE AND
NOT EXISTS ((SELECT PROJECTID FROM PROJECTS P1 WHERE
P1.DEPTCODE = D.CODE) EXCEPT (SELECT P.PROJECTID FROM
PROJECTS P, WORKSON W WHERE W.EMPLOYEEID = E.EMPLOYEEID AND
W.PROJECTID = P.PROJECTID)));
```

Q4 Use correlated subqueries in the SELECT and WHERE clauses, derived tables, and subqueries in the HAVING clause to answer these queries. If they cannot be answered using that technique, explain why.

(a) Find the names of all people who work in the Administration department.

```sql
SELECT FIRSTNAME+' '+ LASTNAME FROM EMPLOYEES WHERE DEPTCODE
IN(SELECT CODE FROM DEPARTMENTS WHERE NAME=AdministraT');
```

(b) Find the names of all people who work in the Accounting department and who spend more than 20% of their time on the health project.

```sql
SELECT FIRSTNAME+' '+ LASTNAME FROM EMPLOYEES WHERE DEPTCODE
IN(SELECT CODE FROM DEPARTMENTS WHERE NAME='Accounting') AND
EMPLOYEEID IN
(SELECT EMPLOYEEID FROM WORKSON W,PROJECTS P
WHERE W.PROJECTID=P.PROJECTID AND P.DESCRIPTION='HEALTH'AND
W.ASSIGNEDTIME/(SELECT SUM(W1.ASSIGNEDTIME)
FROM WORKSON W1
WHERE W.EMPLOYEEID = W1.EMPLOYEEID GROUP BY W1.EMPLOYEEID)>.2
GROUP BY EMPLOYEEID);
```

(c) Find the names of all people who make more than the average salary of the people in the Accounting department.

```sql
SELECT FIRSTNAME, LASTNAME FROM EMPLOYEES WHERE
SALARY> (SELECT AVG(SALARY) FROM EMPLOYEES E,DEPARTMENTS D
WHERE E.DEPTCODE=D.CODE AND D.NAME='ACCOUNTING');
```

(d) Find the names of all projects that require more than 50% of an employee's time.

```
SELECT DESCRIPTION FROM PROJECTS
WHERE PROJECTID IN(
SELECT W1.PROJECTID
FROM WORKSON W1
```
```
WHERE (W1.ASSIGNEDTIME/(SELECT SUM(W.ASSIGNEDTIME)
FROM WORKSON W
WHERE W.EMPLOYEEID = W1.EMPLOYEEID
GROUP BY W.EMPLOYEEID)>.5));
```

(e) Find the total percentage time assigned to employee 'Harry Hardware.

```
SELECT Employeeid, (SUM(ASSIGNEDTIME)/ (SELECT SUM(ASSIGNEDTIME) AS
TOTAL_TIME FROM WORKSON)) * 100 FROM WORKSON WHERE EMPLOYEEID = (SELECT
EMPLOYEEID FROM EMPLOYEES WHERE FIRSTNAME+' '+LASTNAME = 'Harry Hardware')
GROUP BY EMPLOYEEID;
```

(f) Find all departments not assigned a project.

```
SELECT CODE FROM DEPARTMENTS EXCEPT SELECT DEPTCODE FROM
PROJECTS;
```

(g) Find all employees who are paid more than someone in the ACCOUNTING
department.

```
SELECT FIRSTNAME+' '+LASTNAME AS Employee_names FROM
EMPLOYEES WHERE SALARY >
ANY(SELECT SALARY FROM EMPLOYEES E, DEPARTMENTS D WHERE
E.DEPTCODE=D.CODE AND D.NAME='Accounting');
```

(h) Find all employees who are paid more than everyone in the Accounting department.

```
SELECT FIRSTNAME+' '+LASTNAME as Employee_Names FROM
EMPLOYEES WHERE SALARY >
ALL(SELECT SALARY FROM EMPLOYEES E, DEPARTMENTS D WHERE
E.DEPTCODE=D.CODE AND D.NAME='Accounting');
```

(i) Find the highest paid employee in the Accounting department.

```
SELECT MAX(SALARY) as Highest_Paid FROM EMPLOYEES WHERE DEPTCODE IN (SELECT
CODE FROM DEPARTMENTS WHERE NAME='Accounting');
```

Note: Solutions provided are for your own reference and may have other possible variations or interpretations. In case of any query, kindly contact your lab instructors.