

LAB 5 SOLUTIONS

Exercise 1

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

<u>Exercise 2</u>	
Q1	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 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);
Q2	Find all departments where all of their employees are assigned to all of their projects.

	<pre> SELECT D.NAME FROM DEPARTMENTS D WHERE NOT EXISTS (SELECT E.FIRSTNAME FROM EMPLOYEES E WHERE E.DEPTCODE = D.CODE EXCEPT 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))); </pre>
Q3	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 Information Technology department.
	<pre> SELECT FIRSTNAME+' '+ LASTNAME FROM EMPLOYEES WHERE DEPTCODE IN(SELECT CODE FROM DEPARTMENTS WHERE NAME='INFORMATION TECHNOLOGY') ; </pre>
(b)	Find the names of all people who work in the Information Technology department and who spend more than 20% of their time on the health project.
	<pre> SELECT FIRSTNAME+' '+ LASTNAME FROM EMPLOYEES WHERE DEPTCODE IN(SELECT CODE FROM DEPARTMENTS WHERE NAME='INFORMATION TECHNOLOGY') AND EMPLOYEEID IN (SELECT EMPLOYEEID FROM WORKSON W,PROJECTS P WHERE W.PROJECTID=P.PROJECTID AND P.DESCRPTION='HEALTH'AND W.ASSIGNEDTIME/(SELECT SUM(W1.ASSIGNEDTIME) FROM WORKSON W1 WHERE W.EMPLOYEEID = W1.EMPLOYEEID GROUP BY W1.EMPLOYEEID)>.2 GROUP BY EMPLOYEEID) ; </pre>
(c)	Find the names of all people who make more than the average salary of the people in the Accounting department.
	<pre> SELECT FIRSTNAME, LASTNAME FROM EMPLOYEES WHERE SALARY>(SELECT AVG(SALARY) FROM EMPLOYEES E,DEPARTMENTS D WHERE E.DEPTCODE=D.CODE AND D.NAME='ACCOUNTING') ; </pre>
(d)	Find the names of all projects that require more than 50% of an employee's time.
	<pre> SELECT DESCRIPTION FROM PROJECTS WHERE PROJECTID IN(SELECT W1.PROJECTID FROM WORKSON W1 </pre>

	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 Bob Smith.
	SELECT (SUM(ASSIGNEDTIME)/ (SELECT SUM(ASSIGNEDTIME) FROM WORKSON))*100 FROM WORKSON WHERE EMPLOYEEID =(SELECT EMPLOYEEID FROM EMPLOYEES WHERE FIRSTNAME+' '+LASTNAME = 'BOB SMITH') 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 Information Technology department.
	SELECT FIRSTNAME+' '+LASTNAME FROM EMPLOYEES WHERE SALARY > ANY(SELECT SALARY FROM EMPLOYEES E, DEPARTMENTS D WHERE E.DEPTCODE=D.CODE AND D.NAME='INFORMATION TECHNOLOGY');
(h)	Find all employees who are paid more than everyone in the Information Technology department.
	SELECT FIRSTNAME+' '+LASTNAME FROM EMPLOYEES WHERE SALARY > ALL(SELECT SALARY FROM EMPLOYEES E, DEPARTMENTS D WHERE E.DEPTCODE=D.CODE AND D.NAME='INFORMATION TECHNOLOGY');
(i)	Find the highest paid employee in the Information Technology department.
	SELECT MAX(SALARY) FROM EMPLOYEES WHERE DEPTCODE IN (SELECT CODE FROM DEPARTMENTS WHERE NAME='INFORMATION TECHNOLOGY');

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.