Answers to 60 SQL lab queries
Queries on the Locations, Departments, Jobs & Employees tables

```
SIMPLE Queries:
--1.    List all the employees' details
SELECT * FROM EMPLOYEES
--2.   List all the department details
SELECT * FROM DEPARTMENTS
--3.    List all jobs details and order by the Max-Salary.
SELECT * FROM JOBS
--4.    List all the locations order by the city in alphabetical order.
select * from locations order by city
--5.    .    List only the fields  first name,last name,salary, commission for all employees
SELECT FIRST_NAME,LAST_NAME,SALARY,COMMISSION_PCT FROM
EMPLOYEES
--6.    List out employee_id,last name,department id for all  employees and rename
employee id as "ID  of the employee", last name as "Name of the employee", department
id as  "department  ID"
SELECT EMPLOYEE_ID AS "ID OF THE EMPLOYEE",LAST_NAME AS "NAME
OF THE EMPLOYEE",DEPARTMENT_ID AS "DEPARTMENT_ID FROM
EMPLOYEES
--7.    List out the employees' annual salary with their names only.
SELECT FIRST_NAME,LAST_NAME ,SALARY FROM EMPLOYEES
--WHERE Conditions:
--8.    List the details about "SMITH"
SELECT * FROM EMPLOYEES WHERE LAST_NAME='Smith' or
FIRST_NAME='Smith'
--9.    List out the employees who are working in department 20
SELECT * FROM EMPLOYEES WHERE DEPARTMENT_ID=20
--10. List out the employees who are earning salary between 3000 and 4500
SELECT * FROM EMPLOYEES WHERE SALARY BETWEEN 3000 AND 4500
--11. List out the employees who are working in department 10 or 20
SELECT * FROM  EMPLOYEES WHERE DEPARTMENT IN(10,20)
--12. Find out the employees who are not working in department 10 or 30
SELECT * FROM EMPLOYEES WHERE DEPARTMENT NOT IN(10,30)
--13. List out the employees whose name starts with "S"
SELECT *  FROM EMPLOYEES WHERE LAST_NAME LIKE 'S%'
--14. List out the employees whose name start with "S" and end with "H"
SELECT LAST_NAME FROM EMPLOYEES WHERE LAST_NAME LIKE 'S%H'
--15. List out the employees whose name length is 5 and start with "S"
SELECT LAST_NAME FROM EMPLOYEES WHERE LENGTH(LAST_NAME)=5
AND LAST_NAME LIKE'S%'
--16. List out the employees who are working in department 10 and draw the salaries
more than 3500
SELECT * FROM EMPLOYEES WHERE DEPARTMENT_ID=10 AND
SALARY>3500
```

--17. List out the employees who are not receiving commission.

```
SELECT * FROM EMPLOYEES WHERE COMMISSION_PCT IS NULL
```

ORDER BY Clause:

--18. List out the employee id, last name in ascending order based on the employee id.

```
SELECT EMPLOYEE_ID,LAST_NAME FROM EMPLOYEES  ORDER BY
EMPLOYEE_ID
```

--19. List out the employee id, name in descending order based on salary column

```
SELECT EMPLOYEE_ID,LAST_NAME,FIRST_NAME FROM EMPLOYEES
ORDER BY SALARY
```

--20. List out the employee details according to their last_name in ascending order and salaries in descending order

```
SELECT * FROM EMPLOYEES ORDER BY LAST_NAME ASC,SALARY DESC
```

--21. List out the employee details according to their last_name in ascending order and then on department_id in descending order.

```
SELECT * FROM EMPLOYEES ORDER BY LAST_NAME ASC,DEPARTMENT_ID
DESC
```

GROUP BY & HAVING Clause:

--22. How many employees who are working in different each department in the organization

```
SELECT DEPARTMENT_ID,COUNT(EMPLOYEE_ID) FROM EMPLOYEES
GROUP BY DEPARTMENT_ID
```

--23. List out the department wise maximum salary, minimum salary, average salary of the employees

```
SELECT DEPARTMENT_ID,ROUND(MAX(SALARY))AS
"MAX",ROUND(MIN(SALARY))AS "MIN",ROUND(AVG(SALARY))AS "AVG"
FROM EMPLOYEES
GROUP BY DEPARTMENT_ID
```

--24. List out the job wise maximum salary, minimum salary, average salaries of the employees.

```
SELECT JOB_ID,ROUND(MAX(SALARY))AS "MAX",ROUND(MIN(SALARY))AS
"MIN",ROUND(AVG(SALARY))AS "AVG" FROM EMPLOYEES
GROUP BY JOB_ID
```

--25. List out the no.of employees joined in every month in ascending order.

```
SELECT COUNT(EMPLOYEE_ID),TO_CHAR(HIRE_DATE,'MON')
 FROM EMPLOYEES GROUP BY TO_CHAR(HIRE_DATE,'MON')
 ORDER BY COUNT(EMPLOYEE_ID) ASC
```

--26. List out the no.of employees for each month and year, in the ascending order based on the year, month.

```
SELECT COUNT(EMPLOYEE_ID),TO_CHAR(HIRE_DATE,'MON-YY')
 FROM EMPLOYEES GROUP BY TO_CHAR(HIRE_DATE,'MON-YY')
 ORDER BY TO_CHAR(HIRE_DATE,'MON-YY')ASC
```

--27. List all the department ids having atleast four employees.

```
SELECT DEPARTMENT_ID,COUNT(EMPLOYEE_ID)AS "NO OF EMPLOYEES"
FROM EMPLOYEES
 GROUP BY DEPARTMENT_ID
 HAVING COUNT(DEPARTMENT_ID)>=4

--28. How many employees joined in the month of January?
SELECT COUNT(EMPLOYEE_ID)as "January joined employees" FROM
EMPLOYEES
WHERE TO_CHAR(HIRE_DATE,'MON-YY') LIKE '%JAN%'

--29. How many employees who are joined in January or September month.
SELECT  COUNT(EMPLOYEE_ID) FROM EMPLOYEES
WHERE HIRE_DATE LIKE '%JAN%' OR HIRE_DATE LIKE '%SEP%'
--30. How many employees who are joined in 2006.
SELECT  COUNT(EMPLOYEE_ID) FROM EMPLOYEES
WHERE TO_CHAR(HIRE_DATE,'MON-YY') LIKE '%-06'
--31. How many employees joined each month in 2006.
SELECT HIRE_DATE, COUNT(EMPLOYEE_ID) FROM EMPLOYEES
WHERE TO_CHAR(HIRE_DATE,'MON-YY') LIKE '%-06'
GROUP BY HIRE_DATE
ORDER BY HIRE_DATE
--32. How many employees who are joined in March 2006.
SELECT COUNT(EMPLOYEE_ID) FROM EMPLOYEES
WHERE TO_CHAR(HIRE_DATE,'MON-YY')='MAR-06'
--33. Which department id is having greater than or equal to 2 employees joined in April
2006.
SELECT DEPARTMENT_ID,COUNT(DEPARTMENT_ID) FROM EMPLOYEES
WHERE TO_CHAR(HIRE_DATE,'YYYY')=2006
GROUP BY DEPARTMENT_ID
HAVING COUNT(DEPARTMENT_ID)>=2
ORDER BY DEPARTMENT_ID
--34. Display the countries from the countries table , but display them only once.(use
distinct)
SELECT DISTINCT(COUNTRY_NAME) FROM COUNTRIES
--35. List all employees joined in the year 2005
	SELECT COUNT(EMPLOYEE_ID) FROM EMPLOYEES
WHERE TO_CHAR(HIRE_DATE,'YY')='05'
GROUP BY HIRE_DATE

--36. Display how many employees joined after 15th of the month.
SELECT COUNT(EMPLOYEE_ID) FROM EMPLOYEES
WHERE TO_CHAR(HIRE_DATE,'DD') >15
--37. Display the employees who are working in “Oxford” (should use sub query)
SELECT
EMPLOYEES.EMPLOYEE_ID,EMPLOYEES.FIRST_NAME,EMPLOYEES.LAST_N
AME,LOCATIONS.CITY FROM EMPLOYEES
```

```
JOIN DEPARTMENTS
ON DEPARTMENTS.DEPARTMENT_ID=EMPLOYEES.DEPARTMENT_ID
JOIN LOCATIONS
ON LOCATIONS.LOCATION_ID=DEPARTMENTS.LOCATION_ID
WHERE LOCATIONS.CITY='Oxford'

--38. Display daily pay of employee of departmet 100 truncated to the nearest dollar
--(hint for  one day pay formula is    trunc(salary/30) Employees salary that you see is a
monthy salarr. To get annual salary multiply with 12 and then to get a daily salary divide
that by 365
SELECT EMPLOYEE_ID,FIRST_NAME,LAST_NAME,TRUNC(SALARY/365)
FROM EMPLOYEES WHERE DEPARTMENT_ID=100
--39. Display date in this format
   --08:10:19 01/07/2013     Which is 'hh:mi:ss mm/dd/yyyy'
   SELECT TO_CHAR(SYSDATE,'HH:MI:SS MM/DD/YYYY') FROM DUAL
Sub-Queries
--40. Display the details of the employee drawing the second highest salary
-Select * from employees where salary=(select max(salary) from employees where salary
<(select max(salary) from employees))

 Joins
--41. List  Employee id ,last name and their  department name for all employees
SELECT
EMPLOYEES.EMPLOYEE_ID,EMPLOYEES.LAST_NAME,DEPARTMENTS.DEPA
RTMENT_NAME
FROM EMPLOYEES
JOIN DEPARTMENTS
ON EMPLOYEES.DEPARTMENT_ID=DEPARTMENTS.DEPARTMENT_ID

--42. Display employee id , lastname and their JOB_TITLE(designation)
SELECT
EMPLOYEES.EMPLOYEE_ID,EMPLOYEES.LAST_NAME,JOBS.JOB_TITLE
FROM EMPLOYEES
JOIN JOBS
ON EMPLOYEES.JOB_ID=JOBS.JOB_ID
--43. Display the employees with their department name and city.
SELECT
EMPLOYEES.EMPLOYEE_ID,EMPLOYEES.FIRST_NAME,EMPLOYEES.LAST_N
AME,DEPARTMENTS.DEPARTMENT_NAME,LOCATIONS.CITY FROM
EMPLOYEES
JOIN DEPARTMENTS
ON EMPLOYEES.DEPARTMENT_ID=DEPARTMENTS.DEPARTMENT_ID
JOIN LOCATIONS
ON LOCATIONS.LOCATION_ID=DEPARTMENTS.LOCATION_ID
--44. List the department names and get the count of employees working in each
department
```

```
SELECT
COUNT(EMPLOYEES.EMPLOYEE_ID),DEPARTMENTS.DEPARTMENT_NAME
FROM EMPLOYEES
JOIN DEPARTMENTS
ON EMPLOYEES.DEPARTMENT_ID=DEPARTMENTS.DEPARTMENT_ID
GROUP BY DEPARTMENTS.DEPARTMENT_NAME
--45. How many employees are  working in sales department.?
SELECT
COUNT(EMPLOYEES.EMPLOYEE_ID),DEPARTMENTS.DEPARTMENT_NAME
FROM EMPLOYEES
JOIN DEPARTMENTS
ON EMPLOYEES.DEPARTMENT_ID=DEPARTMENTS.DEPARTMENT_ID
GROUP BY DEPARTMENTS.DEPARTMENT_NAME
HAVING DEPARTMENTS.DEPARTMENT_NAME ='Sales'

--46. List the departments having greater than or equal to 5 employees and display the department names in ascending order.
SELECT
COUNT(EMPLOYEES.EMPLOYEE_ID),DEPARTMENTS.DEPARTMENT_NAME
FROM EMPLOYEES
JOIN DEPARTMENTS
ON EMPLOYEES.DEPARTMENT_ID=DEPARTMENTS.DEPARTMENT_ID
GROUP BY DEPARTMENTS.DEPARTMENT_NAME
HAVING COUNT(EMPLOYEES.EMPLOYEE_ID)>=5
ORDER BY DEPARTMENTS.DEPARTMENT_NAME ASC

--47. How many employees are there for each job_title (designation)
SELECT COUNT(EMPLOYEES.EMPLOYEE_ID),JOBS.JOB_TITLE FROM
EMPLOYEES,JOBS
WHERE JOBS.JOB_ID=EMPLOYEES.JOB_ID
GROUP BY JOBS.JOB_TITLE

--49.  Display employee ID , employee last name  and department id for employees who did more than one job in the past.(use job_history table)
--clue(join job history and employees table)
SELECT
JOB_HISTORY.EMPLOYEE_ID,EMPLOYEES.LAST_NAME,EMPLOYEES.DEPARTMENT_ID  FROM EMPLOYEES
JOIN JOB_HISTORY
ON EMPLOYEES.EMPLOYEE_ID=JOB_HISTORY.EMPLOYEE_ID
WHERE JOB_HISTORY.EMPLOYEE_ID IN (SELECT
JOB_HISTORY.EMPLOYEE_ID FROM JOB_HISTORY GROUP BY
JOB_HISTORY.EMPLOYEE_ID HAVING COUNT(*)>=2);
```

Self-Join:

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--50. Display the employee details who earn more than their managers salaries.
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```sql
--51. show the count of  employees under a manager  ( this is example for self join)
----Use the employees table twice in the select clause
SELECT E1.MANAGER_ID,COUNT(E1.EMPLOYEE_ID)
FROM EMPLOYEES E1,EMPLOYEES E2
WHERE E1.EMPLOYEE_ID =E2.EMPLOYEE_ID
GROUP BY E1.MANAGER_ID
ORDER BY MANAGER_ID

--52. Display employee details for all departments (even if there is no employee in a department.
SELECT
DEPARTMENTS.DEPARTMENT_ID,EMPLOYEES.FIRST_NAME,EMPLOYEES.LAST_NAME
FROM EMPLOYEES
FULL OUTER JOIN DEPARTMENTS
ON DEPARTMENTS.DEPARTMENT_ID=EMPLOYEES.DEPARTMENT_ID

--53. Display all Employess in Sales & Purchasing departments
SELECT
EMPLOYEES.EMPLOYEE_ID,EMPLOYEES.FIRST_NAME,EMPLOYEES.LAST_NAME,DEPARTMENTS.DEPARTMENT_NAME FROM EMPLOYEES
LEFT JOIN DEPARTMENTS
ON EMPLOYEES.DEPARTMENT_ID=DEPARTMENTS.DEPARTMENT_ID
WHERE DEPARTMENTS.DEPARTMENT_NAME in('Sales','Purchasing')

--54. List  distinct job_title from jobs table for employees whose department names are Sales and AccountingDepartments.
SELECT DISTINCT
JOB_TITLE,DEPARTMENTS.DEPARTMENT_ID,DEPARTMENTS.DEPARTMENT_NAME FROM EMPLOYEES
JOIN DEPARTMENTS
ON EMPLOYEES.DEPARTMENT_ID =DEPARTMENTS.DEPARTMENT_ID
JOIN JOBS
ON JOBS.JOB_ID =EMPLOYEES.JOB_ID
WHERE DEPARTMENTS.DEPARTMENT_name in('Sales','Accounting');

--55  Syntax for instr is INSTR (string, character[ or substring], position, occurrence)
   --RETURNs a  NUMBER
--Output of below query is what?
SELECT INSTR('CORPORATE FLOOR','OR', 3, 2)   FROM DUAL;
 SELECT INSTR('CORPORATE FLOOR','OR', -3, 2)  FROM DUAL;

--56.  There STATE_PROVINCE column values that are null in the locations table. Write a query to display values as  N/A  where  there is null in the STATE_PROVINCE field.
---NVL function lets you substitute a value when a null value is encountered.
----Example : SELECT NVL(alphabets, 'XXX')FROM onetable;

SELECT LOCATION_ID, STATE_PROVINCE, NVL(NULL,'XXX') FROM
LOCATIONS
--Where alphabets Is the column name and onetable is the table name
 SELECT LOCATION_ID, STATE_PROVINCE, NVL(NULL,'XXX') FROM
LOCATIONS
--57. Display job ID, number of employees, sum of salary of each job id, and difference
between highest salary and lowest salary of the employees belong to each job id.
SELECT JOB_ID,COUNT(EMPLOYEE_ID),SUM(SALARY),MAX(SALARY)-
MIN(SALARY) AS "DIFFERENCE" FROM EMPLOYEES GROUP BY JOB_ID
--58) Display manager ID and number of employees managed by the manager.
SELECT MANAGER_ID,COUNT(EMPLOYEE_ID)AS"NO OF EMPLOYEES"
FROM EMPLOYEES GROUP BY MANAGER_ID
--59) List all the countries starting with ‘A’ from the countries table
SELECT * FROM COUNTRIES WHERE COUNTRY_NAME LIKE 'A%'
--60) In Oracle there is a facility to restrict the no of rows while showing output. It is
done Using ROWNUM.  ROWNUM is a Pseudocolumn
SELECT * FROM EMPLOYEES WHERE ROWNUM<=50
```