Assignment 2: Java - Rdbms &Amp; Database Programming With Jdbc

1. **Select unique job from EMP table.**

mysql> select distinct job from employee;

+-----------+

| job |

+-----------+

| CLERK |

| SALESMAN |

| MANAGER |

| ANALYST |

| PRESIDENT |

+-----------+

5 rows in set (0.00 sec)

1. **List the details of the emps in asc order of the Dptnos and desc of Jobs?**

mysql> select \* from employee order by deptno asc,job desc;

+-------+--------+-----------+------+------------+---------+---------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+--------+-----------+------+------------+---------+---------+--------+

| 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |

| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |

| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |

| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7876 | ADAMS | CLERK | 7788 | 1987-07-13 | 1100.00 | NULL | 20 |

| 7788 | SCOTT | ANALYST | 7566 | 1987-06-11 | 3000.00 | NULL | 20 |

| 7902 | FORD | ANALYST | 7566 | 1981-03-12 | 3000.00 | NULL | 20 |

| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30 |

| 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30 |

| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30 |

| 7844 | TURNER | SALESMAN | 7698 | 1981-08-09 | 1500.00 | 0.00 | 30 |

| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL | 30 |

| 7900 | JAMES | CLERK | 7698 | 1981-03-12 | 950.00 | NULL | 30 |

+-------+--------+-----------+------+------------+---------+---------+--------+

14 rows in set (0.00 sec)

1. **Display all the unique job groups in the descending order?**

mysql> select distinct job from employee order by job desc;

+-----------+

| job |

+-----------+

| SALESMAN |

| PRESIDENT |

| MANAGER |

| CLERK |

| ANALYST |

+-----------+

5 rows in set (0.00 sec)

1. **List the emps who joined before 1981.**

mysql> select \* from employee where hiredate<'1981-01-01';

+-------+-------+-------+------+------------+--------+------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+-------+-------+------+------------+--------+------+--------+

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

+-------+-------+-------+------+------------+--------+------+--------+

1 row in set (0.00 sec)

1. **List the Empno, Ename, Sal, Daily sal of all emps in the asc order of Annsal.**

mysql> select empno,ename,sal,sal/365 as daily\_sal from employee order by sal asc;

+-------+--------+---------+-----------+

| empno | ename | sal | daily\_sal |

+-------+--------+---------+-----------+

| 7369 | SMITH | 800.00 | 2.191781 |

| 7900 | JAMES | 950.00 | 2.602740 |

| 7876 | ADAMS | 1100.00 | 3.013699 |

| 7521 | WARD | 1250.00 | 3.424658 |

| 7654 | MARTIN | 1250.00 | 3.424658 |

| 7934 | MILLER | 1300.00 | 3.561644 |

| 7844 | TURNER | 1500.00 | 4.109589 |

| 7499 | ALLEN | 1600.00 | 4.383562 |

| 7782 | CLARK | 2450.00 | 6.712329 |

| 7698 | BLAKE | 2850.00 | 7.808219 |

| 7566 | JONES | 2975.00 | 8.150685 |

| 7788 | SCOTT | 3000.00 | 8.219178 |

| 7902 | FORD | 3000.00 | 8.219178 |

| 7839 | KING | 5000.00 | 13.698630 |

+-------+--------+---------+-----------+

14 rows in set (0.00 sec)

1. **List the Empno, Ename, Sal, Exp of all emps working for Mgr 7369.**

mysql> select empno,ename,sal, timestampdiff(year,hiredate,curdate()) as experience from employee where mgr=7369;

Empty set (0.00 sec)

1. **Display all the details of the emps who’s Comm. Is more than their Sal?**

mysql> select \* from employee where comm>sal;

+-------+--------+----------+------+------------+---------+---------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+--------+----------+------+------------+---------+---------+--------+

| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30 |

+-------+--------+----------+------+------------+---------+---------+--------+

1 row in set (0.00 sec)

1. **List the emps who are either ‘CLERK’ or ‘ANALYST’ in the Desc order.**

mysql> select \* from employee where job in ('clerk','analyst') order by job desc;

+-------+--------+---------+------+------------+---------+------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+--------+---------+------+------------+---------+------+--------+

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7876 | ADAMS | CLERK | 7788 | 1987-07-13 | 1100.00 | NULL | 20 |

| 7900 | JAMES | CLERK | 7698 | 1981-03-12 | 950.00 | NULL | 30 |

| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |

| 7788 | SCOTT | ANALYST | 7566 | 1987-06-11 | 3000.00 | NULL | 20 |

| 7902 | FORD | ANALYST | 7566 | 1981-03-12 | 3000.00 | NULL | 20 |

+-------+--------+---------+------+------------+---------+------+--------+

6 rows in set (0.00 sec)

1. **List the emps Who Annual sal ranging from 22000 and 45000.**

mysql> select \* from employee where sal\*12 between 22000 and 45000;

+-------+-------+---------+------+------------+---------+------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+-------+---------+------+------------+---------+------+--------+

| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |

| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL | 30 |

| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |

| 7788 | SCOTT | ANALYST | 7566 | 1987-06-11 | 3000.00 | NULL | 20 |

| 7902 | FORD | ANALYST | 7566 | 1981-03-12 | 3000.00 | NULL | 20 |

+-------+-------+---------+------+------------+---------+------+--------+

5 rows in set (0.00 sec)

1. **List the Enames those are starting with ‘S’ and with five characters.**

mysql> select \* from employee where ename like 's\_\_\_\_';

+-------+-------+---------+------+------------+---------+------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+-------+---------+------+------------+---------+------+--------+

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7788 | SCOTT | ANALYST | 7566 | 1987-06-11 | 3000.00 | NULL | 20 |

+-------+-------+---------+------+------------+---------+------+--------+

2 rows in set (0.00 sec)

1. **List the emps whose Empno not starting with digit78.**

mysql> select \* from employee where empno not like '78%';

+-------+--------+----------+------+------------+---------+---------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+--------+----------+------+------------+---------+---------+--------+

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30 |

| 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30 |

| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |

| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30 |

| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL | 30 |

| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |

| 7788 | SCOTT | ANALYST | 7566 | 1987-06-11 | 3000.00 | NULL | 20 |

| 7900 | JAMES | CLERK | 7698 | 1981-03-12 | 950.00 | NULL | 30 |

| 7902 | FORD | ANALYST | 7566 | 1981-03-12 | 3000.00 | NULL | 20 |

| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |

+-------+--------+----------+------+------------+---------+---------+--------+

11 rows in set (0.00 sec)

1. **List all the Clerks of Deptno 20.**

mysql> select \* from employee where job='clerk' and deptno=20;

+-------+-------+-------+------+------------+---------+------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+-------+-------+------+------------+---------+------+--------+

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7876 | ADAMS | CLERK | 7788 | 1987-07-13 | 1100.00 | NULL | 20 |

+-------+-------+-------+------+------------+---------+------+--------+

2 rows in set (0.00 sec)

1. **List the Emps who are senior to their own MGRS.**

mysql> select e1.\* from employee e1 join employee e2 on e1.mgr=e2.empno and e1.hiredate<e2.hiredate;

+-------+-------+----------+------+------------+---------+--------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+-------+----------+------+------------+---------+--------+--------+

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30 |

| 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30 |

| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |

| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL | 30 |

| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |

| 7900 | JAMES | CLERK | 7698 | 1981-03-12 | 950.00 | NULL | 30 |

| 7902 | FORD | ANALYST | 7566 | 1981-03-12 | 3000.00 | NULL | 20 |

+-------+-------+----------+------+------------+---------+--------+--------+

8 rows in set (0.00 sec)

1. **List the Emps of Deptno 20 who’s Jobs are same as Deptno10.**

mysql> select e1.\* from employee e1 join employee e2 on e1.job=e2.job and e2.deptno=10 where e1.deptno=20;

+-------+-------+---------+------+------------+---------+------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+-------+---------+------+------------+---------+------+--------+

| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7876 | ADAMS | CLERK | 7788 | 1987-07-13 | 1100.00 | NULL | 20 |

+-------+-------+---------+------+------------+---------+------+--------+

3 rows in set (0.00 sec)

1. **List the Emps who’s Sal is same as FORD or SMITH in desc order of Sal.**

mysql> select \* from employee where sal=(select sal from employee where ename='ford') or sal=(select sal from employee where ename='smith') order by sal desc;

+-------+-------+---------+------+------------+---------+------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+-------+---------+------+------------+---------+------+--------+

| 7788 | SCOTT | ANALYST | 7566 | 1987-06-11 | 3000.00 | NULL | 20 |

| 7902 | FORD | ANALYST | 7566 | 1981-03-12 | 3000.00 | NULL | 20 |

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

+-------+-------+---------+------+------------+---------+------+--------+

3 rows in set (0.00 sec)

1. **List the emps whose jobs same as SMITH or ALLEN.**

mysql> select \* from employee where job in (select job from employee where ename in ("smith","allen"));

+-------+--------+----------+------+------------+---------+---------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+--------+----------+------+------------+---------+---------+--------+

| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |

| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30 |

| 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30 |

| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30 |

| 7844 | TURNER | SALESMAN | 7698 | 1981-08-09 | 1500.00 | 0.00 | 30 |

| 7876 | ADAMS | CLERK | 7788 | 1987-07-13 | 1100.00 | NULL | 20 |

| 7900 | JAMES | CLERK | 7698 | 1981-03-12 | 950.00 | NULL | 30 |

| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |

+-------+--------+----------+------+------------+---------+---------+--------+

8 rows in set (0.00 sec)

1. **Any jobs of deptno 10 those that are not found in deptno 20.**

mysql> select distinct job from employee where deptno=10 and job not in (select job from employee where deptno=20);

+-----------+

| job |

+-----------+

| PRESIDENT |

+-----------+

1 row in set (0.00 sec)

1. **Find the highest sal of EMP table.**

mysql> select max(sal) from employee;

+----------+

| max(sal) |

+----------+

| 5000.00 |

+----------+

1 row in set (0.00 sec)

1. **Find details of highest paid employee.**

mysql> select \* from employee where sal=(select max(sal) from employee);

+-------+-------+-----------+------+------------+---------+------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+-------+-----------+------+------------+---------+------+--------+

| 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |

+-------+-------+-----------+------+------------+---------+------+--------+

1 row in set (0.00 sec)

1. **Find the total sal given to the MGR.**

mysql> select mgr,sum(sal) from employee group by mgr;

+------+----------+

| mgr | sum(sal) |

+------+----------+

| 7902 | 800.00 |

| 7698 | 6550.00 |

| 7839 | 8275.00 |

| 7566 | 6000.00 |

| NULL | 5000.00 |

| 7788 | 1100.00 |

| 7782 | 1300.00 |

+------+----------+

7 rows in set (0.00 sec)

1. **List the emps whose names contains ‘A’.**

mysql> select \* from employee where ename like '%a%';

+-------+--------+----------+------+------------+---------+---------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+--------+----------+------+------------+---------+---------+--------+

| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30 |

| 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30 |

| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30 |

| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL | 30 |

| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |

| 7876 | ADAMS | CLERK | 7788 | 1987-07-13 | 1100.00 | NULL | 20 |

| 7900 | JAMES | CLERK | 7698 | 1981-03-12 | 950.00 | NULL | 30 |

+-------+--------+----------+------+------------+---------+---------+--------+

7 rows in set (0.00 sec)

1. **Find all the emps who earn the minimum Salary for each job wise in ascending order.**

mysql> select job,min(sal) as min\_sal from employee group by job order by min\_sal asc;

+-----------+---------+

| job | min\_sal |

+-----------+---------+

| CLERK | 800.00 |

| SALESMAN | 1250.00 |

| MANAGER | 2450.00 |

| ANALYST | 3000.00 |

| PRESIDENT | 5000.00 |

+-----------+---------+

5 rows in set (0.00 sec)

1. **List the emps whose sal greater than Blake’s sal.**

mysql> select \* from employee where sal>(select sal from employee where ename="blake");

+-------+-------+-----------+------+------------+---------+------+--------+

| empno | ename | job | mgr | hiredate | sal | comm | deptno |

+-------+-------+-----------+------+------------+---------+------+--------+

| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |

| 7788 | SCOTT | ANALYST | 7566 | 1987-06-11 | 3000.00 | NULL | 20 |

| 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |

| 7902 | FORD | ANALYST | 7566 | 1981-03-12 | 3000.00 | NULL | 20 |

+-------+-------+-----------+------+------------+---------+------+--------+

4 rows in set (0.00 sec)

1. **Create view v1 to select ename, job, dname, loc whose deptno are same.**

mysql> select \* from v1;

+--------+-----------+------------+----------+

| ename | job | dname | loc |

+--------+-----------+------------+----------+

| CLARK | MANAGER | accounting | new york |

| KING | PRESIDENT | accounting | new york |

| MILLER | CLERK | accounting | new york |

| SMITH | CLERK | research | dallas |

| JONES | MANAGER | research | dallas |

| SCOTT | ANALYST | research | dallas |

| ADAMS | CLERK | research | dallas |

| FORD | ANALYST | research | dallas |

| ALLEN | SALESMAN | sales | chicago |

| WARD | SALESMAN | sales | chicago |

| MARTIN | SALESMAN | sales | chicago |

| BLAKE | MANAGER | sales | chicago |

| TURNER | SALESMAN | sales | chicago |

| JAMES | CLERK | sales | chicago |

+--------+-----------+------------+----------+

14 rows in set (0.00 sec)

1. **Create a procedure with dno as input parameter to fetch ename and dname.**

mysql> delimiter //

mysql> create procedure getdata(in dno int)

-> begin

-> select e.ename,d.dname from employee e join dept d on e.deptno=d.deptno where e.deptno=dno;

-> end;

-> //

Query OK, 0 rows affected (0.01 sec)

mysql> delimiter ;

mysql> call getdata(10);

+--------+------------+

| ename | dname |

+--------+------------+

| CLARK | accounting |

| KING | accounting |

| MILLER | accounting |

+--------+------------+

3 rows in set (0.01 sec)

Query OK, 0 rows affected (0.01 sec)

1. **Add column Pin with bigint data type in table student.**

mysql> alter table student add pin bigint;

Query OK, 0 rows affected (0.02 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;

+-------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------+-------------+------+-----+---------+-------+

| rno | int | NO | PRI | 0 | |

| sname | varchar(14) | YES | | NULL | |

| city | varchar(20) | YES | | NULL | |

| state | varchar(20) | YES | | NULL | |

| pin | bigint | YES | | NULL | |

+-------+-------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

1. **Modify the student table to change the sname length from 14 to 40. Create trigger to insert data in emp\_log table whenever any update of sal in EMP table. You can set action as ‘New Salary’.**

mysql> alter table student modify column sname varchar(40);

Query OK, 0 rows affected (0.01 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;

+-------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------+-------------+------+-----+---------+-------+

| rno | int | NO | PRI | 0 | |

| sname | varchar(40) | YES | | NULL | |

| city | varchar(20) | YES | | NULL | |

| state | varchar(20) | YES | | NULL | |

| pin | bigint | YES | | NULL | |

+-------+-------------+------+-----+---------+-------+

5 rows in set (0.00 sec)

mysql> delimiter //

mysql> create trigger employee\_bi after update on employee for each row

-> begin

-> if old.sal <> new.sal then insert into emp\_log values (new.empno,now(),new.sal,'new salary');

-> end if;

-> end //

Query OK, 0 rows affected (0.01 sec)

mysql> delimiter ;

mysql> update employee set sal=950 where empno=7369;

Query OK, 1 row affected (0.00 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> select \* from emp\_log;

+--------+------------+------------+------------+

| emp\_id | log\_date | new\_salary | action |

+--------+------------+------------+------------+

| 7369 | 2024-06-25 | 950 | new salary |

+--------+------------+------------+------------+

1 row in set (0.00 sec)