**University of Chittagong (CU)**

**Department of Computer Science and Engineering (CSE)**

**Fourth Semester B.Sc in Engineering**

**CSE 413 and 414: Lab on Database Management Systems**

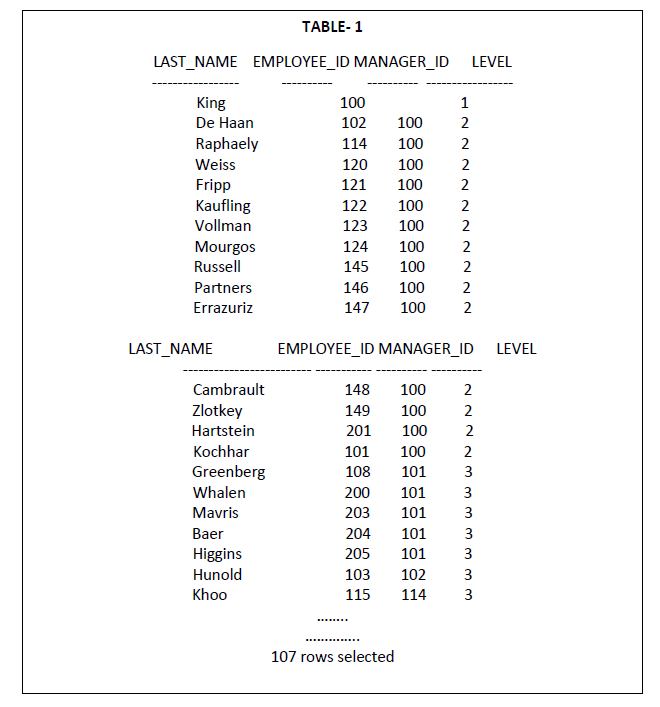
**Marks: 20 Time: As soon as possible (Max 1:30 hours)**

**Course Teacher: Dr. Rudra Pratap Deb Nath, Associate Professor, Dept. of CSE, CU**

[It is an open book exam. Therefore, any kinds of hard copies are allowed in the exam hall. However, mobile, internet and soft copies are strictly prohibited.]

Do the following steps and write the query:

1. Create a DB user with your name
2. Check different kind of password and session related controlling commands
3. Grant necessary privileges to the user
4. Implement the following Emp schema given in Figure 1.
5. Populate the schema with data given at the end of this document.
6. Display the names and hire dates for all employees who were hired before their managers, along with their manager’s names and hire dates.
7. Write a query to show the name of the department that has highest number of job categories. Answer: departmentID: 50 departmentNameShipping, NumberOfJobs:45
8. Write a query who earn less than the average salary in their departments. Show lastName, departmentID, salary, and the average salary of that department. Answer: Hints: For example, a department with ID number 50 has average salary 3475.55. Show the employees of the departmentID 50 who earns less than 3475.55. In total 65 rows will be selected for this answer.
9. Display the managerID and the salary of the highest paid employee for that manager. \*\* show the employees’s name as well
10. Create a user named “King” and grant access to him only on the information related to him, i.e, he can see only his employee, job, department, location and job history records; not others. Hints: you can create a view under the DBA user and grant the access on that view to King.
11. Write a query that outputs the results shown in TABLE 1:



1. Populate the schema with data given at the end of this document.
2. Show the department names and IDs of those departments whose total salary cost is below one-fifth of the total salary cost of the whole company.
3. Show the id of those employees who earn less than the average salary of the departments they work for.
4. Who is the oldest employee in the company? Show his current position, salary, working department and his immediate supervisor.
5. Show the employees who supervise the employees those supervise no ones.
6. The president of the company founds that having a department in South San Francisco does not add an extra revenue. Therefore, the company shut down those departments. As a database developer, you are asked to modify/alter the database so that there is no information of those departments in you EMPLOYEE database.
7. Create a user named “King” and grant access to him only on the information related to him, i.e, he can see only his employee, job, department, location and job history records; not others. Hints: you can create a view under the DBA user and grant the access on that view to King.

**Departments data:**

(departmentID,departmentName,mangerID,locationID)

(10,'Administration',200,1700)

(20,'Marketing',201,1800)

(30,'Purchasing',114,1700)

(40,'Human Resources',203,2400)

(50,'Shipping',121,1500)

(60,'IT',103,1400)

(70,'Public Relations',204,2700)

(80,'Sales',145,2500)

(90,'Executive',100,1700)

(100,'Finance',108,1700)

(110,'Accounting',205,1700)

(120,'Treasury',,1700)

(130,'Corporate Tax',,1700)

(140,'Control And Credit',,1700)

(150,'Shareholder Services',,1700)

(160,'Benefits',,1700)

(170,'Manufacturing',,1700)

(180,'Construction',,1700)

(190,'Contracting',,1700)

(200,'Operations',,1700)

(210,'IT Support',,1700)

(220,'NOC',,1700)

(230,'IT Helpdesk',,1700)

(240,'Government Sales',,1700)

(250,'Retail Sales',,1700)

(260,'Recruiting',,1700)

(270,'Payroll',,1700)

(1000,'EEE',205,3200)

(300,'CSE',206,3200)

(310,'CSE',206,3200)

**Job\_History Data**

(employeeID, startDate, endDate, jobID, departmentID)

(102,'13-JAN-01','24-JUL-06','IT\_PROG',60)

(101,'21-SEP-97','27-OCT-01','AC\_ACCOUNT',110)

(101,'28-OCT-01','15-MAR-05','AC\_MGR',110)

(201,'17-FEB-04','19-DEC-07','MK\_REP',20)

(114,'24-MAR-06','31-DEC-07','ST\_CLERK',50)

(122,'01-JAN-07','31-DEC-07','ST\_CLERK',50)

(200,'17-SEP-95','17-JUN-01','AD\_ASST',90)

(176,'24-MAR-06','31-DEC-06','SA\_REP',80)

(176,'01-JAN-07','31-DEC-07','SA\_MAN',80)

(200,'01-JUL-02','31-DEC-06','AC\_ACCOUNT',90)

**Jobs Data**

(jobID,jobTitle,minSalary,maxSalary)

('AD\_PRES','President',20080,40000)

('AD\_VP','Administration Vice President',15000,30000)

('AD\_ASST','Administration Assistant',3000,6000)

('FI\_MGR','Finance Manager',8200,16000)

('FI\_ACCOUNT','Accountant',4200,9000)

('AC\_MGR','Accounting Manager',8200,16000)

('AC\_ACCOUNT','Public Accountant',4200,9000)

('SA\_MAN','Sales Manager',10000,20080)

('SA\_REP','Sales Representative',6000,12008)

('PU\_MAN','Purchasing Manager',8000,15000)

('PU\_CLERK','Purchasing Clerk',2500,5500)

('ST\_MAN','Stock Manager',5500,8500)

('ST\_CLERK','Stock Clerk',2008,5000)

('SH\_CLERK','Shipping Clerk',2500,5500)

('IT\_PROG','Programmer',4000,10000)

('MK\_MAN','Marketing Manager',9000,15000)

('MK\_REP','Marketing Representative',4000,9000)

('HR\_REP','Human Resources Representative',4000,9000)

('PR\_REP','Public Relations Representative',4500,10500)

**Loations Data**

(locationID, postalCode,city,countryID)

(1000,'00989','Roma','IT')

(1100,'10934','Venice','IT')

(1200,'1689','Tokyo','JP')

(1300,'6823','Hiroshima','JP')

(1400,'26192','Southlake','US')

(1500,'99236','South San Francisco','US')

(1600,'50090','South Brunswick','US')

(1700,'98199','Seattle','US')

(1800,'M5V 2L7','Toronto','CA')

(1900,'YSW 9T2','Whitehorse','CA')

(2000,'190518','Beijing','CN')

(2100,'490231','Bombay','IN')

(2200,'2901','Sydney','AU')

(2300,'540198','Singapore','SG')

(2400,'','London','UK')

(2500,'OX9 9ZB','Oxford','UK')

(2600,'09629850293','Stretford','UK')

(2700,'80925','Munich','DE')

(2800,'01307-002','Sao Paulo','BR')

(2900,'1730','Geneva','CH')

(3000,'3095','Bern','CH')

(3100,'3029SK','Utrecht','NL')

(3200,'11932','Mexico City','MX')

**Staffs Data**

(employeeID,lastName,email,hireDate,jobID,salary,managerID,departmentID)

(100,'King','SKING','17-JUN-03','AD\_PRES',24000,,90)

(101,'Kochhar','NKOCHHAR','21-SEP-05','AD\_VP',17000,100,90)

(102,'De Haan','LDEHAAN','13-JAN-01','AD\_VP',17000,100,90)

(103,'Hunold','AHUNOLD','03-JAN-06','IT\_PROG',9000,102,60)

(104,'Ernst','BERNST','21-MAY-07','IT\_PROG',6000,103,60)

(105,'Austin','DAUSTIN','25-JUN-05','IT\_PROG',4800,103,60)

(106,'Pataballa','VPATABAL','05-FEB-06','IT\_PROG',4800,103,60)

(107,'Lorentz','DLORENTZ','07-FEB-07','IT\_PROG',4200,103,60)

(108,'Greenberg','NGREENBE','17-AUG-02','FI\_MGR',12008,101,100)

(109,'Faviet','DFAVIET','16-AUG-02','FI\_ACCOUNT',9000,108,100)

(110,'Chen','JCHEN','28-SEP-05','FI\_ACCOUNT',8200,108,100)

(111,'Sciarra','ISCIARRA','30-SEP-05','FI\_ACCOUNT',7700,108,100)

(112,'Urman','JMURMAN','07-MAR-06','FI\_ACCOUNT',7800,108,100)

(113,'Popp','LPOPP','07-DEC-07','FI\_ACCOUNT',6900,108,100)

(114,'Raphaely','DRAPHEAL','07-DEC-02','PU\_MAN',11000,100,30)

(115,'Khoo','AKHOO','18-MAY-03','PU\_CLERK',3100,114,30)

(116,'Baida','SBAIDA','24-DEC-05','PU\_CLERK',2900,114,30)

(117,'Tobias','STOBIAS','24-JUL-05','PU\_CLERK',2800,114,30)

(118,'Himuro','GHIMURO','15-NOV-06','PU\_CLERK',2600,114,30)

(119,'Colmenares','KCOLMENA','10-AUG-07','PU\_CLERK',2500,114,30)

(120,'Weiss','MWEISS','18-JUL-04','ST\_MAN',8000,100,50)

(121,'Fripp','AFRIPP','10-APR-05','ST\_MAN',8200,100,50)

(122,'Kaufling','PKAUFLIN','01-MAY-03','ST\_MAN',7900,100,50)

(123,'Vollman','SVOLLMAN','10-OCT-05','ST\_MAN',6500,100,50)

(124,'Mourgos','KMOURGOS','16-NOV-07','ST\_MAN',5800,100,50)

(125,'Nayer','JNAYER','16-JUL-05','ST\_CLERK',3200,120,50)

(126,'Mikkilineni','IMIKKILI','28-SEP-06','ST\_CLERK',2700,120,50)

(127,'Landry','JLANDRY','14-JAN-07','ST\_CLERK',2400,120,50)

(128,'Markle','SMARKLE','08-MAR-08','ST\_CLERK',2200,120,50)

(129,'Bissot','LBISSOT','20-AUG-05','ST\_CLERK',3300,121,50)

(130,'Atkinson','MATKINSO','30-OCT-05','ST\_CLERK',2800,121,50)

(131,'Marlow','JAMRLOW','16-FEB-05','ST\_CLERK',2500,121,50)

(132,'Olson','TJOLSON','10-APR-07','ST\_CLERK',2100,121,50)

(133,'Mallin','JMALLIN','14-JUN-04','ST\_CLERK',3300,122,50)

(134,'Rogers','MROGERS','26-AUG-06','ST\_CLERK',2900,122,50)

(135,'Gee','KGEE','12-DEC-07','ST\_CLERK',2400,122,50)

(136,'Philtanker','HPHILTAN','06-FEB-08','ST\_CLERK',2200,122,50)

(137,'Ladwig','RLADWIG','14-JUL-03','ST\_CLERK',3600,123,50)

(138,'Stiles','SSTILES','26-OCT-05','ST\_CLERK',3200,123,50)

(139,'Seo','JSEO','12-FEB-06','ST\_CLERK',2700,123,50)

(140,'Patel','JPATEL','06-APR-06','ST\_CLERK',2500,123,50)

(141,'Rajs','TRAJS','17-OCT-03','ST\_CLERK',3500,124,50)

(142,'Davies','CDAVIES','29-JAN-05','ST\_CLERK',3100,124,50)

(143,'Matos','RMATOS','15-MAR-06','ST\_CLERK',2600,124,50)

(144,'Vargas','PVARGAS','09-JUL-06','ST\_CLERK',2500,124,50)

(145,'Russell','JRUSSEL','01-OCT-04','SA\_MAN',14000,100,80)

(146,'Partners','KPARTNER','05-JAN-05','SA\_MAN',13500,100,80)

(147,'Errazuriz','AERRAZUR','10-MAR-05','SA\_MAN',12000,100,80)

(148,'Cambrault','GCAMBRAU','15-OCT-07','SA\_MAN',11000,100,80)

(149,'Zlotkey','EZLOTKEY','29-JAN-08','SA\_MAN',10500,100,80)

(150,'Tucker','PTUCKER','30-JAN-05','SA\_REP',10000,145,80)

(151,'Bernstein','DBERNSTE','24-MAR-05','SA\_REP',9500,145,80)

(152,'Hall','PHALL','20-AUG-05','SA\_REP',9000,145,80)

(153,'Olsen','COLSEN','30-MAR-06','SA\_REP',8000,145,80)

(154,'Cambrault','NCAMBRAU','09-DEC-06','SA\_REP',7500,145,80)

(155,'Tuvault','OTUVAULT','23-NOV-07','SA\_REP',7000,145,80)

(156,'King','JKING','30-JAN-04','SA\_REP',10000,146,80)

(157,'Sully','PSULLY','04-MAR-04','SA\_REP',9500,146,80)

(158,'McEwen','AMCEWEN','01-AUG-04','SA\_REP',9000,146,80)

(159,'Smith','LSMITH','10-MAR-05','SA\_REP',8000,146,80)

(160,'Doran','LDORAN','15-DEC-05','SA\_REP',7500,146,80)

(161,'Sewall','SSEWALL','03-NOV-06','SA\_REP',7000,146,80)

(162,'Vishney','CVISHNEY','11-NOV-05','SA\_REP',10500,147,80)

(163,'Greene','DGREENE','19-MAR-07','SA\_REP',9500,147,80)

(164,'Marvins','MMARVINS','24-JAN-08','SA\_REP',7200,147,80)

(165,'Lee','DLEE','23-FEB-08','SA\_REP',6800,147,80)

(166,'Ande','SANDE','24-MAR-08','SA\_REP',6400,147,80)

(167,'Banda','ABANDA','21-APR-08','SA\_REP',6200,147,80)

(168,'Ozer','LOZER','11-MAR-05','SA\_REP',11500,148,80)

(169,'Bloom','HBLOOM','23-MAR-06','SA\_REP',10000,148,80)

(170,'Fox','TFOX','24-JAN-06','SA\_REP',9600,148,80)

(171,'Smith','WSMITH','23-FEB-07','SA\_REP',7400,148,80)

(172,'Bates','EBATES','24-MAR-07','SA\_REP',7300,148,80)

(173,'Kumar','SKUMAR','21-APR-08','SA\_REP',6100,148,80)

(174,'Abel','EABEL','11-MAY-04','SA\_REP',11000,149,80)

(175,'Hutton','AHUTTON','19-MAR-05','SA\_REP',8800,149,80)

(176,'Taylor','JTAYLOR','24-MAR-06','SA\_REP',8600,149,80)

(177,'Livingston','JLIVINGS','23-APR-06','SA\_REP',8400,149,80)

(178,'Grant','KGRANT','24-MAY-07','SA\_REP',7000,149,)

(179,'Johnson','CJOHNSON','04-JAN-08','SA\_REP',6200,149,80)

(180,'Taylor','WTAYLOR','24-JAN-06','SH\_CLERK',3200,120,50)

(181,'Fleaur','JFLEAUR','23-FEB-06','SH\_CLERK',3100,120,50)

(182,'Sullivan','MSULLIVA','21-JUN-07','SH\_CLERK',2500,120,50)

(183,'Geoni','GGEONI','03-FEB-08','SH\_CLERK',2800,120,50)

(184,'Sarchand','NSARCHAN','27-JAN-04','SH\_CLERK',4200,121,50)

(185,'Bull','ABULL','20-FEB-05','SH\_CLERK',4100,121,50)

(186,'Dellinger','JDELLING','24-JUN-06','SH\_CLERK',3400,121,50)

(187,'Cabrio','ACABRIO','07-FEB-07','SH\_CLERK',3000,121,50)

(188,'Chung','KCHUNG','14-JUN-05','SH\_CLERK',3800,122,50)

(189,'Dilly','JDILLY','13-AUG-05','SH\_CLERK',3600,122,50)

(190,'Gates','TGATES','11-JUL-06','SH\_CLERK',2900,122,50)

(191,'Perkins','RPERKINS','19-DEC-07','SH\_CLERK',2500,122,50)

(192,'Bell','SBELL','04-FEB-04','SH\_CLERK',4000,123,50)

(193,'Everett','BEVERETT','03-MAR-05','SH\_CLERK',3900,123,50)

(194,'McCain','SMCCAIN','01-JUL-06','SH\_CLERK',3200,123,50)

(195,'Jones','VJONES','17-MAR-07','SH\_CLERK',2800,123,50)

(196,'Walsh','AWALSH','24-APR-06','SH\_CLERK',3100,124,50)

(197,'Feeney','KFEENEY','23-MAY-06','SH\_CLERK',3000,124,50)

(198,'OConnell','DOCONNEL','21-JUN-07','SH\_CLERK',2600,124,50)

(199,'Grant','DGRANT','13-JAN-08','SH\_CLERK',2600,124,50)

(200,'Whalen','JWHALEN','17-SEP-03','AD\_ASST',4400,101,10)

(201,'Hartstein','MHARTSTE','17-FEB-04','MK\_MAN',13000,100,20)

(202,'Fay','PFAY','17-AUG-05','MK\_REP',6000,201,20)

(203,'Mavris','SMAVRIS','07-JUN-02','HR\_REP',6500,101,40)

(204,'Baer','HBAER','07-JUN-02','PR\_REP',10000,101,70)

(205,'Higgins','SHIGGINS','07-JUN-02','AC\_MGR',12008,101,110)

(206,'Gietz','WGIETZ','07-JUN-02','AC\_ACCOUNT',8300,205,110)