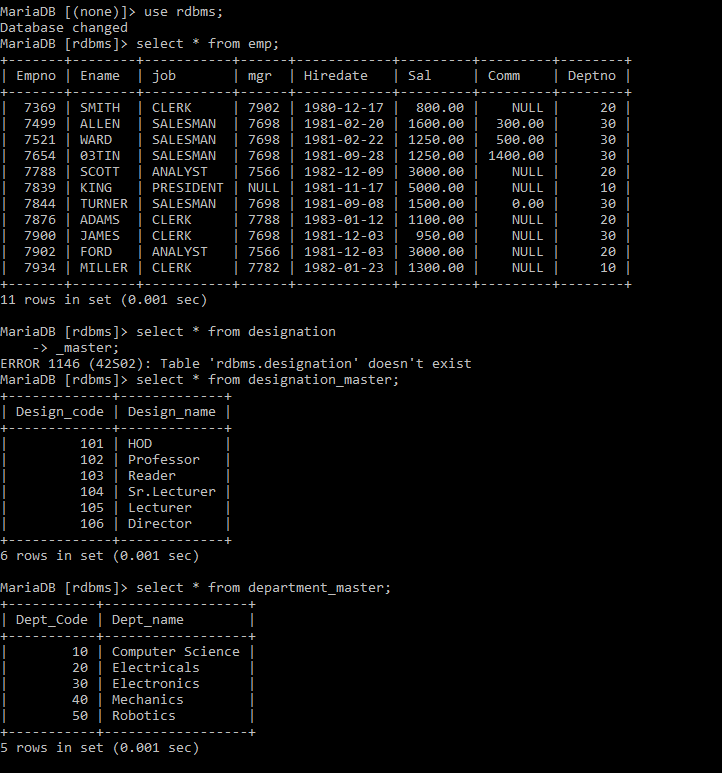
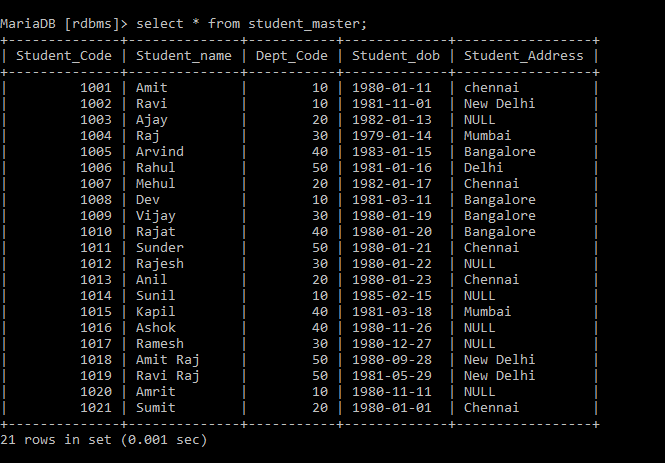
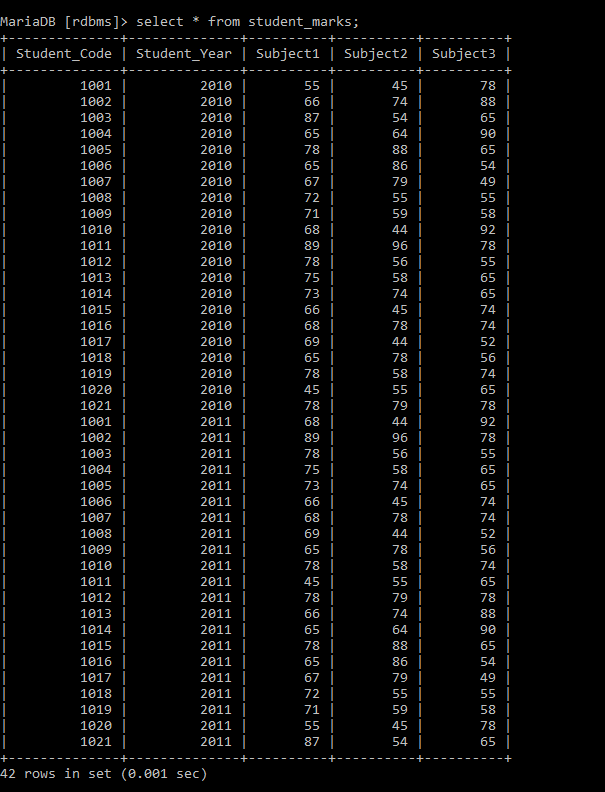
Shashank Kumar Pandey

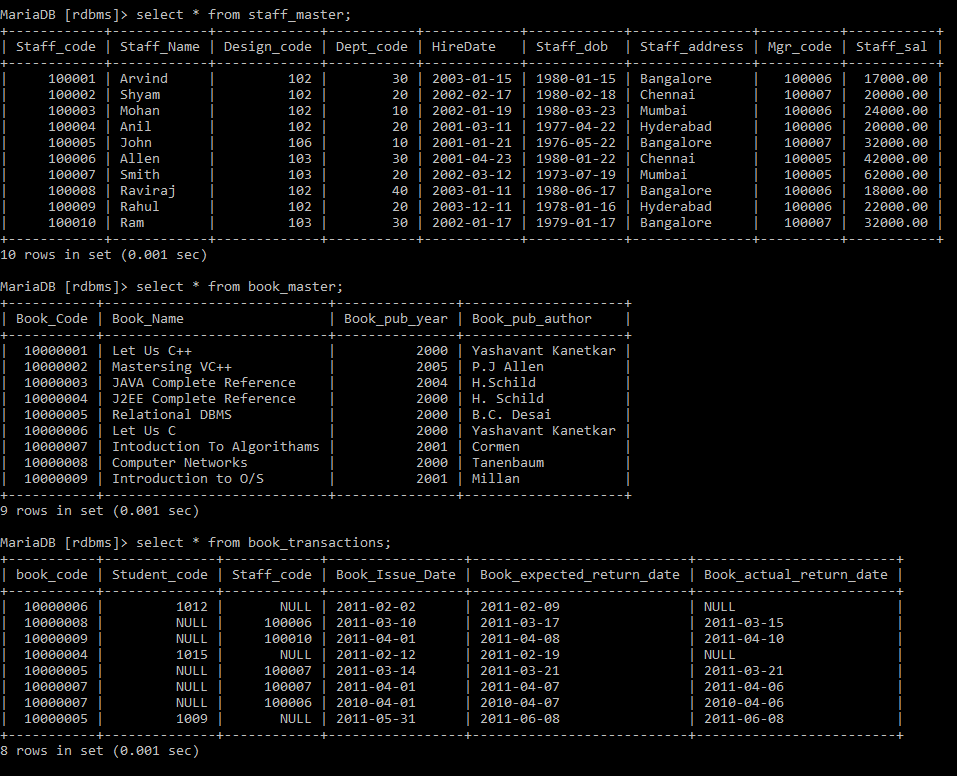
RDBMS ASSIGNMENT

Required Tables







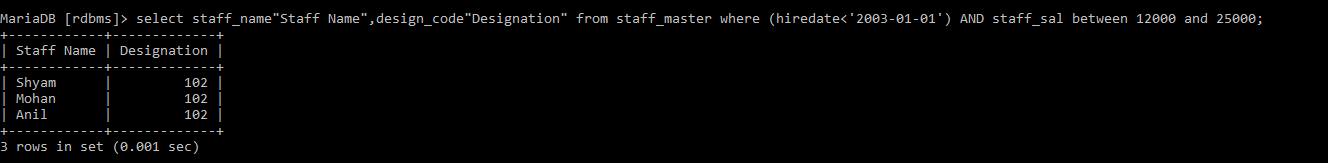


Queries:

1.1: Data Query Language

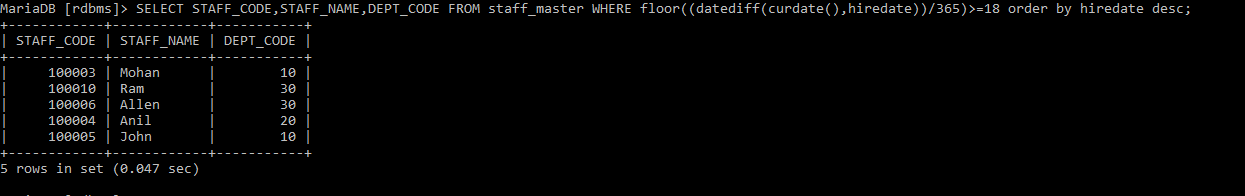
1. List the Name and Designation code of the staff who have joined before Jan 2003 and whose salary range is between 12000 and 25000. Display the columns with user defined Column headers. Hint: Use As clause along with other operators

MariaDB [rdbms]> select staff\_name"Staff Name",design\_code"Designation" from staff\_master where (hiredate<'2003-01-01') AND staff\_sal between 12000 and 25000;



2. List the staff code, name, and department number of the staff who have experience of 18 or more years and sort them based on their experience.

MariaDB [rdbms]> SELECT STAFF\_CODE,STAFF\_NAME,DEPT\_CODE FROM staff\_master WHERE floor((datediff(curdate(),hiredate))/365)>=18 order by hiredate desc;



3. Display the staff details who do not have manager. Hint: Use is null

MariaDB [rdbms]> select \* from staff\_master where mgr\_code is NULL;



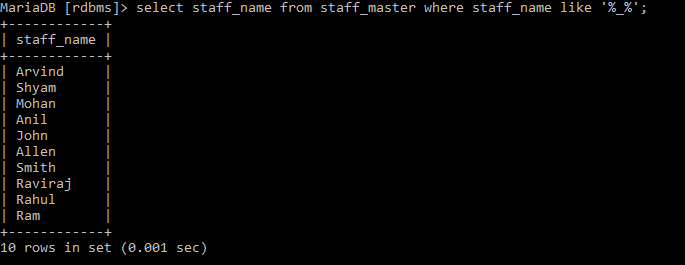
4. Display the Book details that were published during the period of 2001 to 2004. Also display book details with Book name having the character ‘&’ anywhere.

MariaDB [rdbms]> SELECT \* FROM BOOK\_MASTER WHERE BOOK\_PUB\_YEAR BETWEEN 2001 AND 2004 AND BOOK\_NAME LIKE '%[&]%';



5. List the names of the staff having ‘\_’ character in their name.

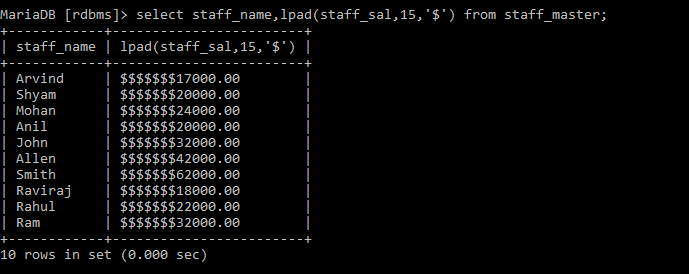
MariaDB [rdbms]> select staff\_name from staff\_master where staff\_name like '%\_%';



**2.1: Single Row Functions:**

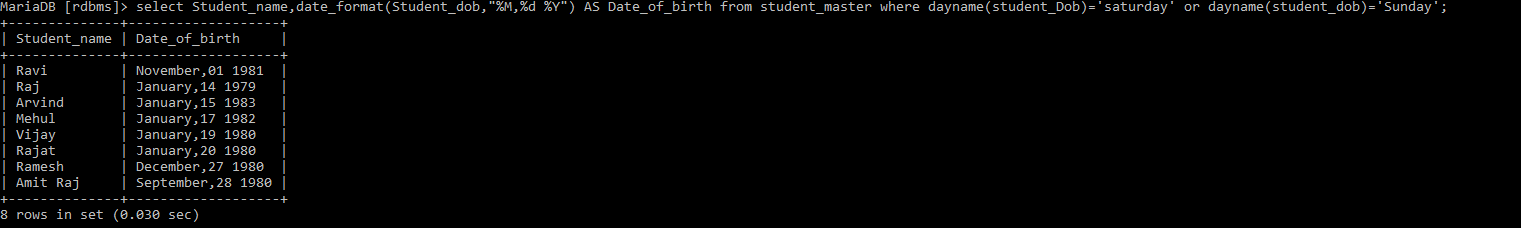
1. Create a query which will display Staff Name, Salary of each staff. Format the salary to be 15 characters long and left padded with ‘$’.

MariaDB [rdbms]> select staff\_name,lpad(staff\_sal,15,'$') from staff\_master;



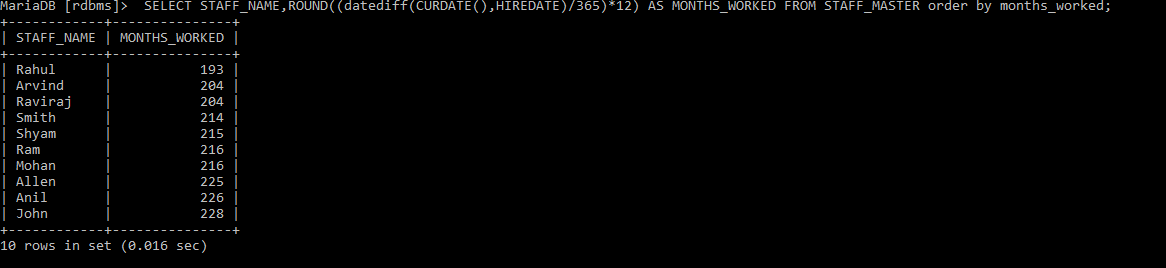
2. Display name and date of birth of students where date of birth must be displayed in the format similar to “January, 12 1981” for those who were born on Saturday or Sunday

MariaDB [rdbms]> select Student\_name,date\_format(Student\_dob,"%M,%d %Y") AS Date\_of\_birth from student\_master where dayname(student\_Dob)='saturday' or dayname(student\_dob)='Sunday';



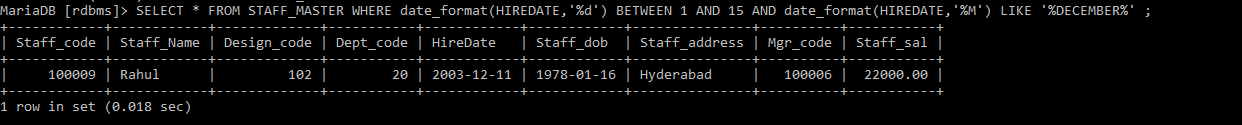
3. Display each Staff name and number of months they worked for the organization. Label the column as ‘Months Worked’. Order your result by number of months employed. Also Round the number of months to closest whole number.

MariaDB [rdbms]> SELECT STAFF\_NAME,ROUND((datediff(CURDATE(),HIREDATE)/365)\*12) AS MONTHS\_WORKED FROM STAFF\_MASTER order by months\_worked;

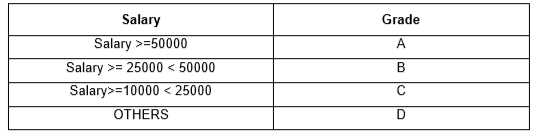


4. List the details of the staff who have joined in first half of December month (irrespective of the year).

MariaDB [rdbms]> SELECT \* FROM STAFF\_MASTER WHERE date\_format(HIREDATE,'%d') BETWEEN 1 AND 15 AND date\_format(HIREDATE,'%M') LIKE '%DECEMBER%' ;



5. Write a query that displays Staff Name, Salary, and Grade of all staff. Grade depends on the following table.



MariaDB [rdbms]> SELECT STAFF\_NAME,STAFF\_SAL ,

-> CASE

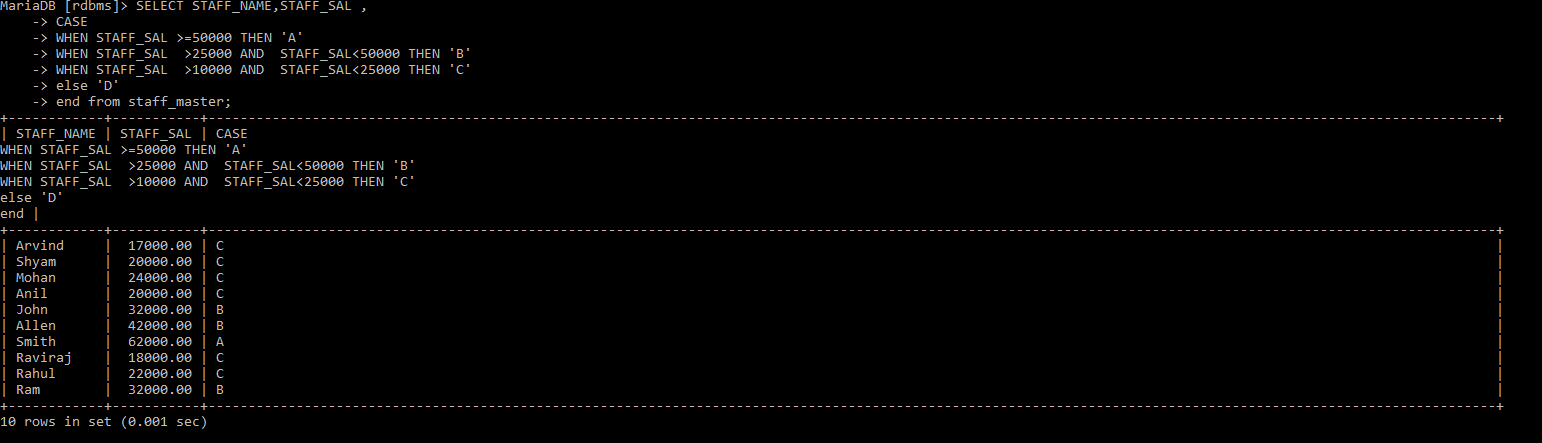
-> WHEN STAFF\_SAL >=50000 THEN 'A'

-> WHEN STAFF\_SAL >25000 AND STAFF\_SAL<50000 THEN 'B'

-> WHEN STAFF\_SAL >10000 AND STAFF\_SAL<25000 THEN 'C'

-> else 'D'

-> end from staff\_master;



6. Display the Staff Name, Hire date and day of the week on which staff was hired. Label the column as DAY. Order the result by the day of the week starting with Monday. Hint :Use to\_char with hiredate and formats ‘DY’ and ’D’

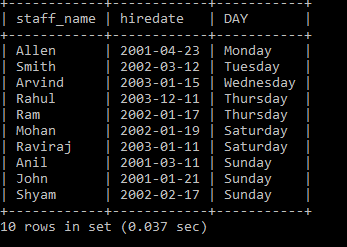
MariaDB [rdbms]> select staff\_name,hiredate,dayname(hiredate) as DAY from staff\_master order by (

-> case dayofweek(hiredate)

-> when 1 then 7

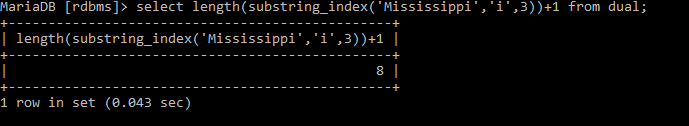
-> else dayofweek(hiredate)-1

-> end);



7.Write a query to find the position of third occurrence of ‘i’ in the given word ‘Mississippi’

select length(substring\_index('Mississippi','i',3))+1 from dual;



8. Write a query to find the pay date for the month. Pay date is the last Friday of the month. Display the date in the format “Twenty Eighth of January, 2002”. Label the heading as PAY DATE. Hint: use to\_char, next\_day and last\_day functions.

9. Display Student code, Name and Dept Name. Display “Electricals” if dept code = 20, “Electronics” if Dept code =30 and “Others” for all other Dept codes in the Dept Name column. Hint : Use Decode

MariaDB [rdbms]> select student\_code,student\_name,

-> case

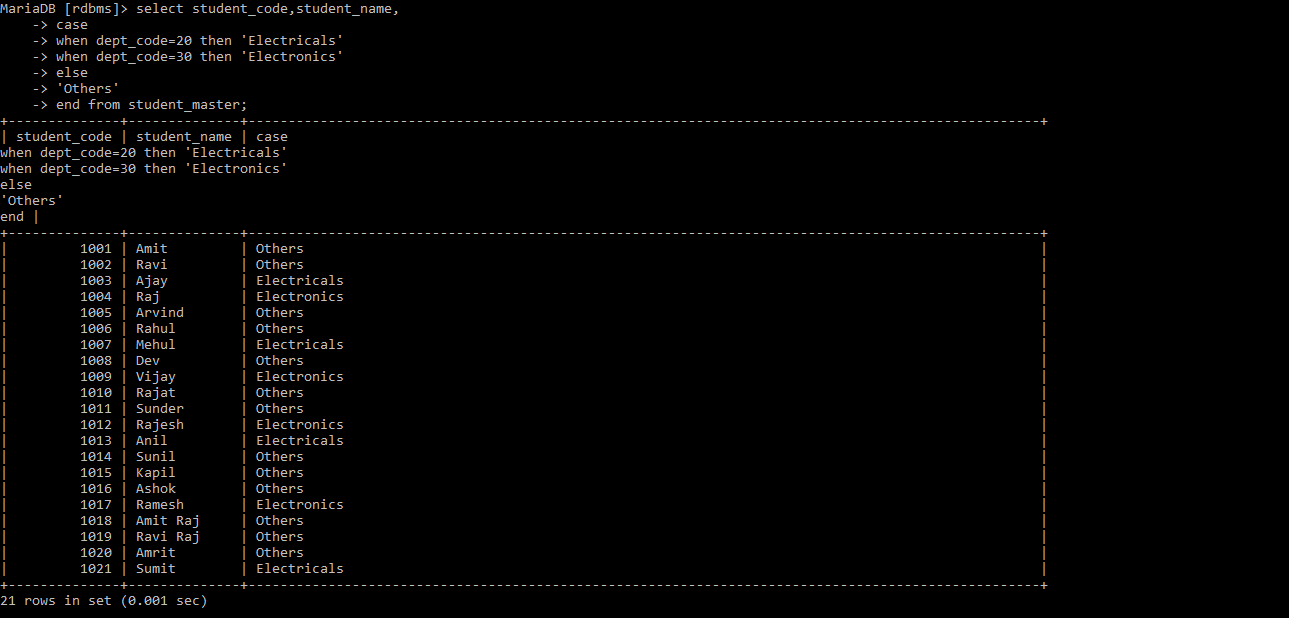
-> when dept\_code=20 then 'Electricals'

-> when dept\_code=30 then 'Electronics'

-> else

-> 'Others'

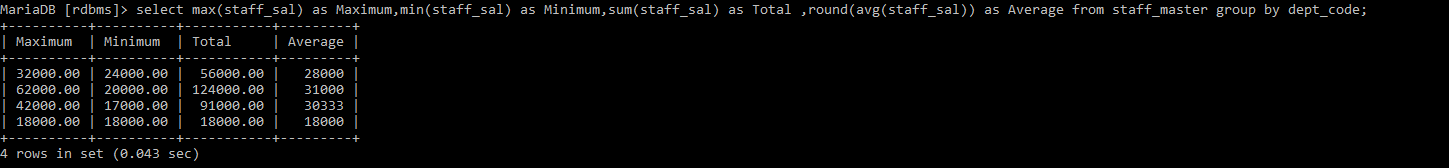
-> end from student\_master;



**2.2: Group Functions:**

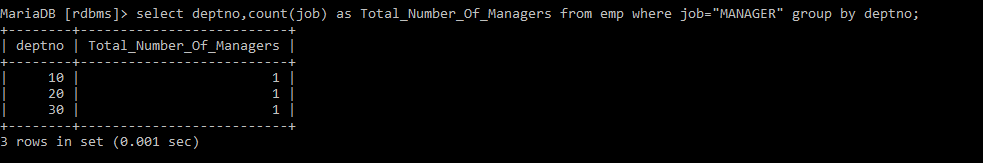
1. Display the Highest, Lowest, Total & Average salary of all staff. Label the columns Maximum, Minimum, Total and Average respectively for each Department code. Also round the result to the nearest whole number.

MariaDB [rdbms]> select max(staff\_sal) as Maximum,min(staff\_sal) as Minimum,sum(staff\_sal) as Total ,round(avg(staff\_sal)) as Average from staff\_master group by dept\_code;



2. Display Department code and number of managers working in that department. Label the column as ‘Total Number of Managers’ for each department.

MariaDB [rdbms]> select deptno,count(job) as Total\_Number\_Of\_Managers from emp where job="MANAGER" group by deptno;



3. Get the Department number, and sum of Salary of all non-managers where the sum is greater than 20000.

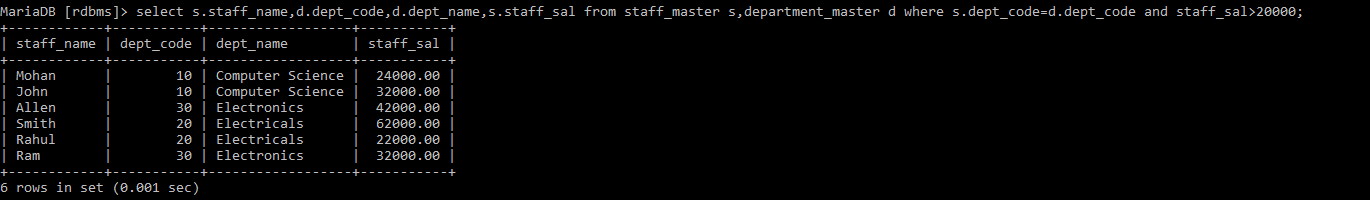
MariaDB [rdbms]> select deptno,sum(sal) as sum from emp where job not like "manager" group by deptno having sum(sal)>20000;



**3.1: Joins and Subqueries**

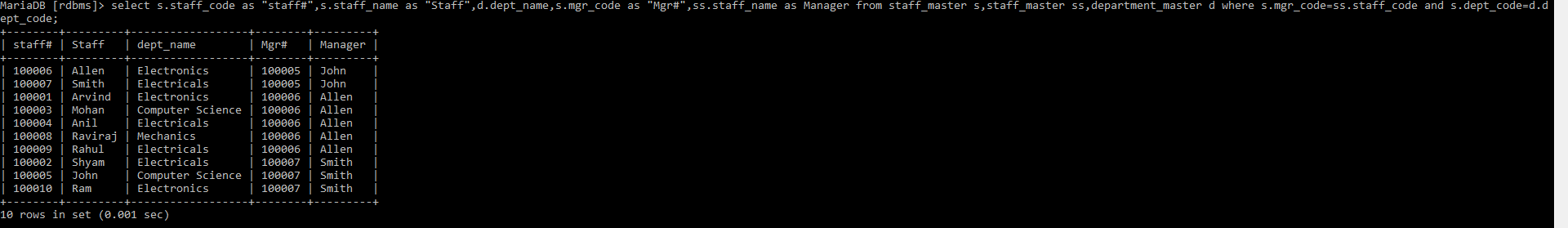
1. Write a query which displays Staff Name, Department Code, Department Name, and Salary for all staff who earns more than 20000.

MariaDB [rdbms]> select s.staff\_name,d.dept\_code,d.dept\_name,s.staff\_sal from staff\_master s,department\_master d where s.dept\_code=d.dept\_code and staff\_sal>20000;



2. Display Staff Code, Staff Name, Department Name, and his manager’s number and name. Label the columns Staff#, Staff, Mgr#, Manager

MariaDB [rdbms]> select s.staff\_code as "staff#",s.staff\_name as "Staff",d.dept\_name,s.mgr\_code as "Mgr#",ss.staff\_name as Manager from staff\_master s,staff\_master ss,department\_master d where s.mgr\_code=ss.staff\_code and s.dept\_code=d.dept\_code;



3. Create a query that will display Student Code, Student Name, Book Code, and Book Name for all students whose expected book return date is today.

MariaDB [rdbms]> select s.student\_code,s.student\_name,b.book\_code,b.book\_name from student\_master s,book\_transactions bb,book\_master b where s.student\_code=bb.student\_code and bb.book\_code and bb.book\_expected\_return\_date=curdate();

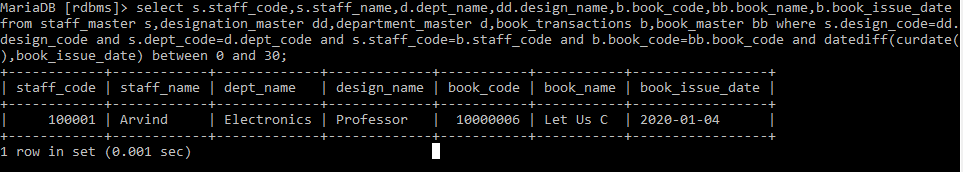


4. Create a query that will display Staff Code, Staff Name, Department Name, Designation name, Book Code, Book Name, and Issue Date for only those staff who have taken any book in last 30 days. . If required, make changes to the table to create such a scenario.

MariaDB [rdbms]> insert into book\_transactions values(10000006,1012,100001,'2020-01-04','2020-01-21',NULL);

Query OK, 1 row affected (0.027 sec)

MariaDB [rdbms]> select s.staff\_code,s.staff\_name,d.dept\_name,dd.design\_name,b.book\_code,bb.book\_name,b.book\_issue\_date from staff\_master s,designation\_master dd,department\_master d,book\_transactions b,book\_master bb where s.design\_code=dd.design\_code and s.dept\_code=d.dept\_code and s.staff\_code=b.staff\_code and b.book\_code=bb.book\_code and datediff(curdate(),book\_issue\_date) between 0 and 30;



5. Generate a report which contains the following information.

Staff Code, Staff Name, Designation Name, Department, Book Code, Book Name,

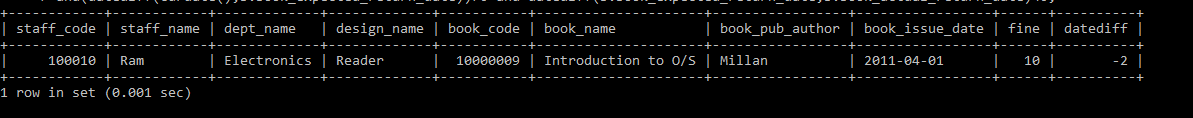
Author, Fine For the staff who has not returned the book. Fine will be calculated as Rs. 5 per day.

Fine = 5 \* (No. of days = Current Date – Expected return date). Include records in the table to suit this problem statement

MariaDB [rdbms]> select s.staff\_code,s.staff\_name,d1.dept\_name,d2.design\_name,b.book\_code,b1.book\_name,b1.book\_pub\_author,b.book\_issue\_date,datediff(b.book\_actual\_return\_date,b.book\_expected\_return\_date)\*5 as fine,datediff(b.book\_expected\_return\_date,b.book\_actual\_return\_date) as datediff from department\_master d1,designation\_master d2,book\_master b1,staff\_master s inner join book\_transactions b on

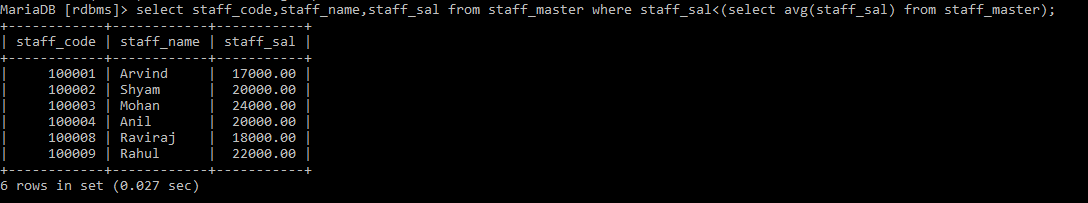
-> s.staff\_code=b.staff\_code where s.dept\_code=d1.dept\_code and s.design\_code=d2.design\_code and b.book\_code=b1.book\_code

-> and(datediff(curdate(),b.book\_expected\_return\_date))>0 and datediff(b.book\_expected\_return\_date,b.book\_actual\_return\_date)<0;



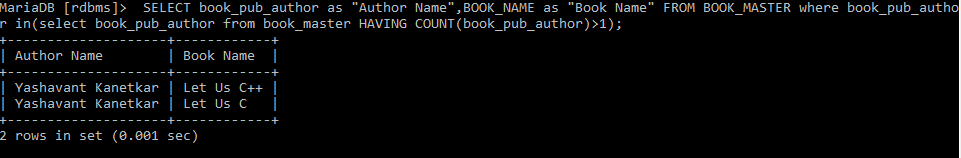
6. List Staff Code, Staff Name, and Salary for those who are getting less than the average salary of organization.

MariaDB [rdbms]> select staff\_code,staff\_name,staff\_sal from staff\_master where staff\_sal<(select avg(staff\_sal) from staff\_master);



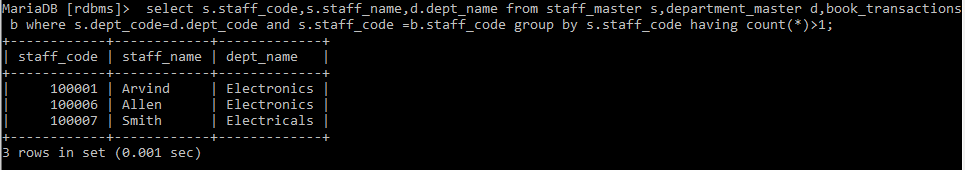
7. Display Author Name, Book Name for those authors who wrote more than one book.

MariaDB [rdbms]> SELECT book\_pub\_author as "Author Name",BOOK\_NAME as "Book Name" FROM BOOK\_MASTER where book\_pub\_author in(select book\_pub\_author from book\_master HAVING COUNT(book\_pub\_author)>1);



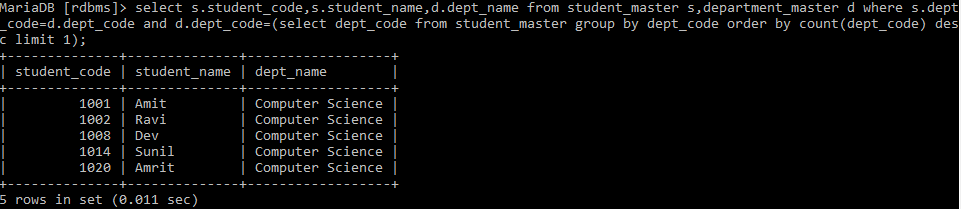
8. Display Staff Code, Staff Name, and Department Name for those who have taken more than one book.

MariaDB [rdbms]> select s.staff\_code,s.staff\_name,d.dept\_name from staff\_master s,department\_master d,book\_transactions b where s.dept\_code=d.dept\_code and s.staff\_code =b.staff\_code group by s.staff\_code having count(\*)>1;



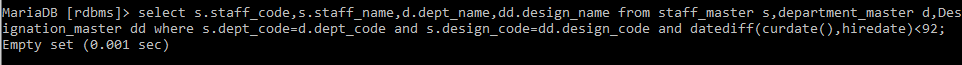
9. Display the Student Code, Student Name, and Department Name for that department in which there are maximum number of student studying.

select s.student\_code,s.student\_name,d.dept\_name from student\_master s,department\_master d where s.dept\_code=d.dept\_code and d.dept\_code=(select dept\_code from student\_master group by dept\_code order by count(dept\_code) desc limit 1);



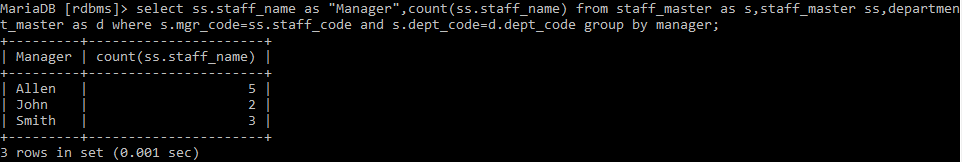
10. Display Staff Code, Staff Name, Department Name, and Designation name for those who have joined in last 3 months.

MariaDB [rdbms]> select s.staff\_code,s.staff\_name,d.dept\_name,dd.design\_name from staff\_master s,department\_master d,Designation\_master dd where s.dept\_code=d.dept\_code and s.design\_code=dd.design\_code and datediff(curdate(),hiredate)<92;



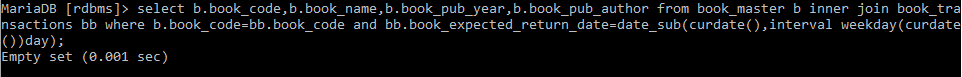
11. Display the Manager Name and the total strength of his/her team.

MariaDB [rdbms]> select ss.staff\_name as "Manager",count(ss.staff\_name) from staff\_master as s,staff\_master ss,department\_master as d where s.mgr\_code=ss.staff\_code and s.dept\_code=d.dept\_code group by manager;



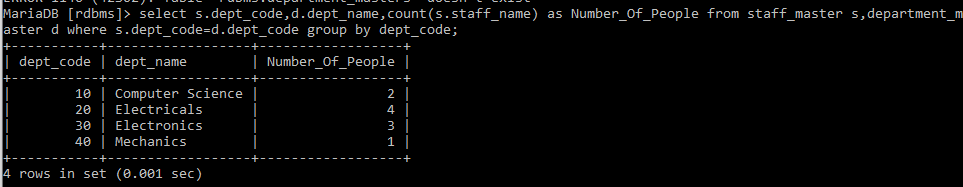
12. Display the details of books that have not been returned and expected return date was last Monday. Book name should be displayed in proper case.. Hint: You can change /add records so that the expected return date suits this problem statement

MariaDB [rdbms]> select b.book\_code,b.book\_name,b.book\_pub\_year,b.book\_pub\_author from book\_master b inner join book\_transactions bb where b.book\_code=bb.book\_code and bb.book\_expected\_return\_date=date\_sub(curdate(),interval weekday(curdate())day);



13. Write a query to display number of people in each Department. Output should display Department Code, Department Name and Number of People.

MariaDB [rdbms]> select s.dept\_code,d.dept\_name,count(s.staff\_name) as Number\_Of\_People from staff\_master s,department\_master d where s.dept\_code=d.dept\_code group by dept\_code;



**4.1: Database Objects**