Name: Fahim Mahmud Bhuiyan

ID: 20-42970-1

Section: G

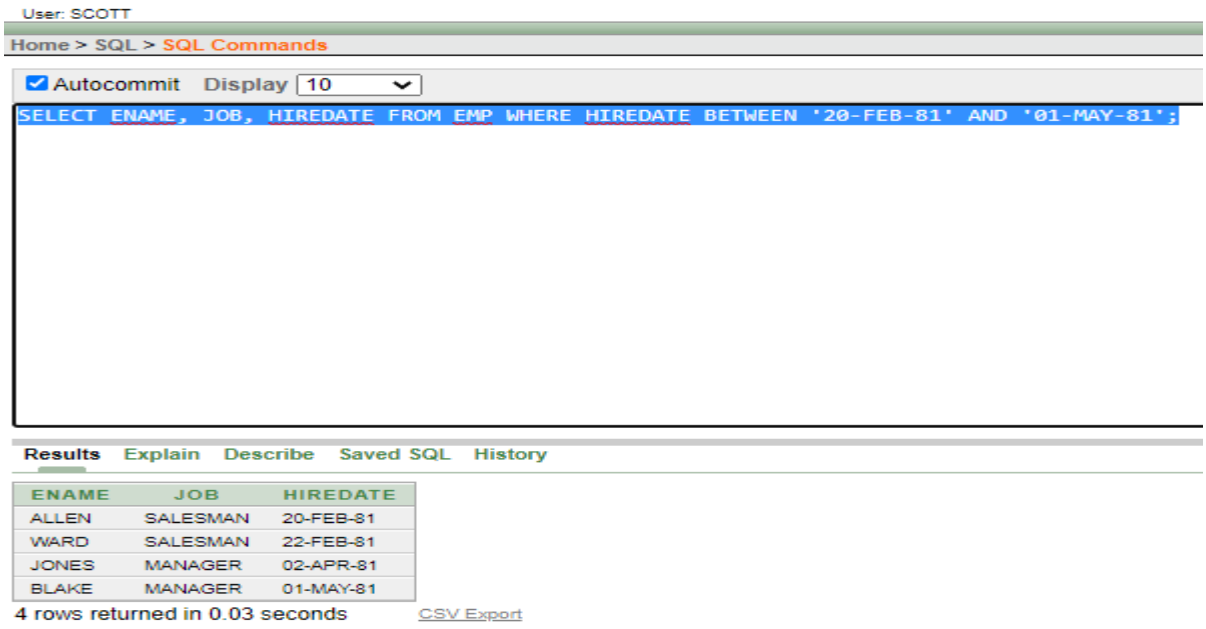
Introduction to Database

Date: 19/10/2020

Lab Task 1

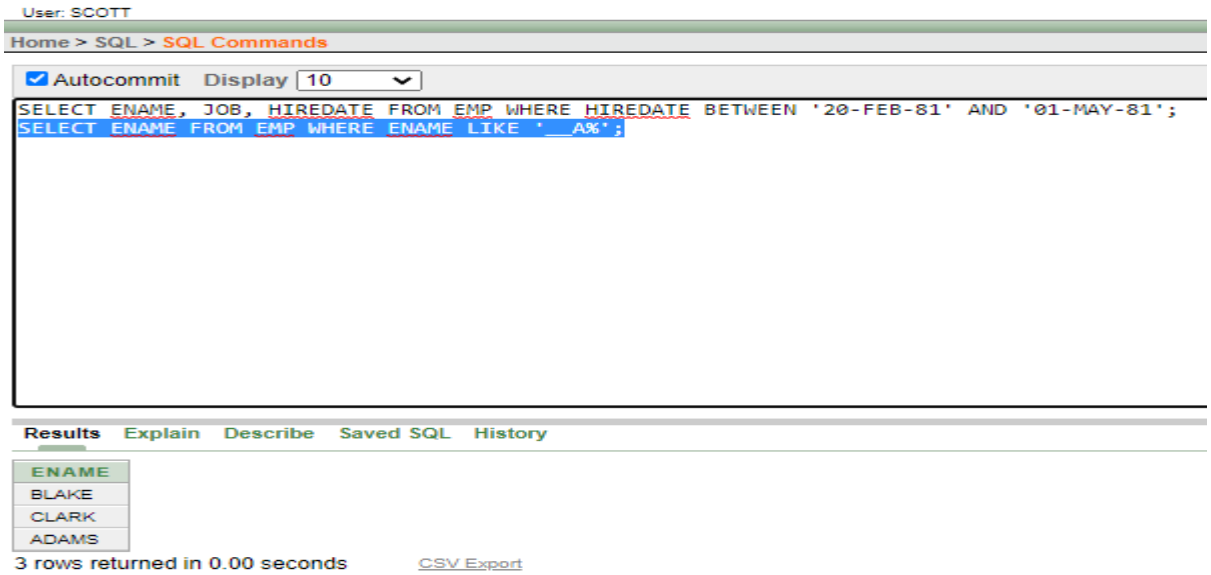
1. Display the employee name, job, and start date of employees hired between February 20, 1981, and May 1, 1981.

Query: SELECT ENAME, JOB, HIREDATE FROM EMP WHERE HIREDATE BETWEEN '20-FEB-81' AND '01-MAY-81';



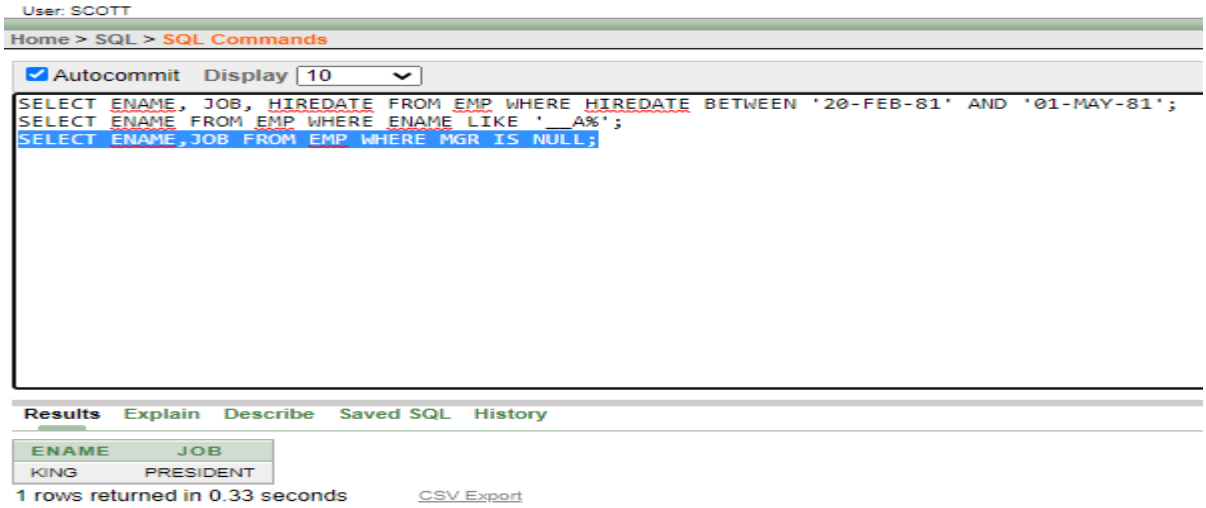
2. Display the names of all employees where the third letter of their name is an A.

Query: SELECT ENAME FROM EMP WHERE ENAME LIKE '__A%';



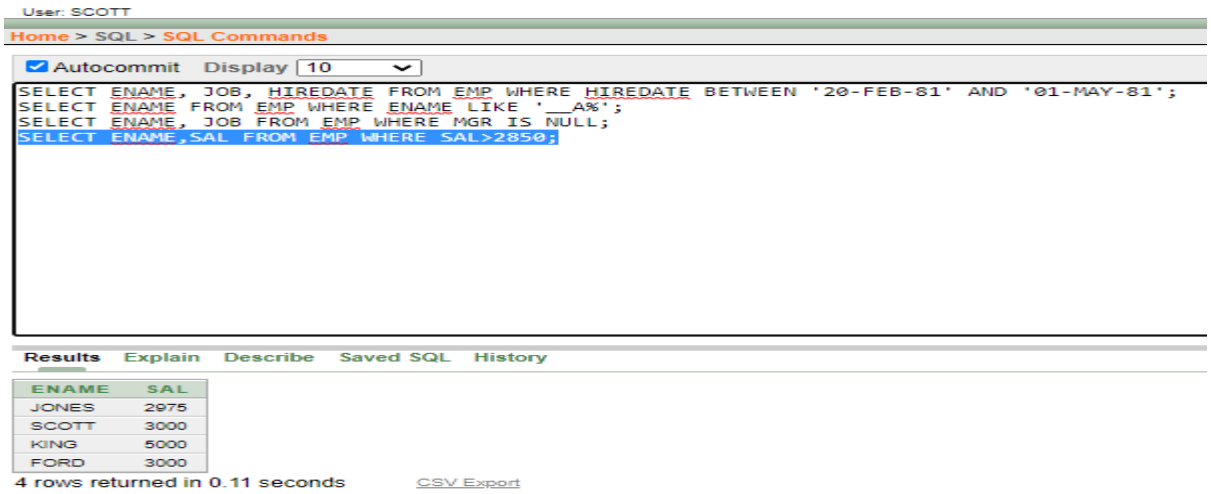
3. Display the name and job title of all employees who don't have a manager.

Query: SELECT ENAME, JOB FROM EMP WHERE MGR IS NULL;



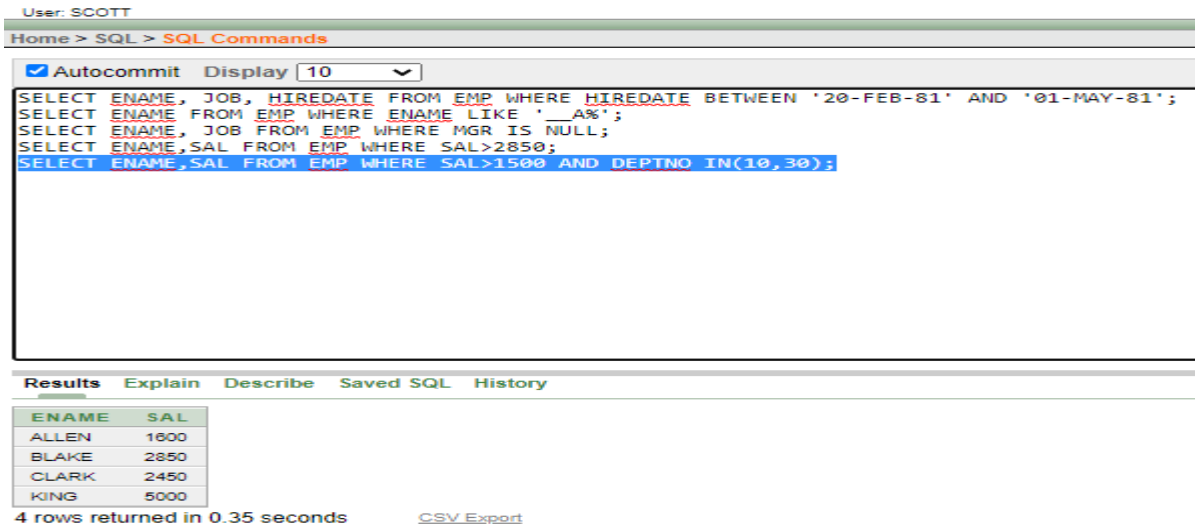
4. Create a query to display the name and salary of employees earning more than $2850.

Query: SELECT ENAME,SAL FROM EMP WHERE SAL>2850;



5. Write a query to list the name and salary of employees who earn more than $1500 and are in department 10 or 30.

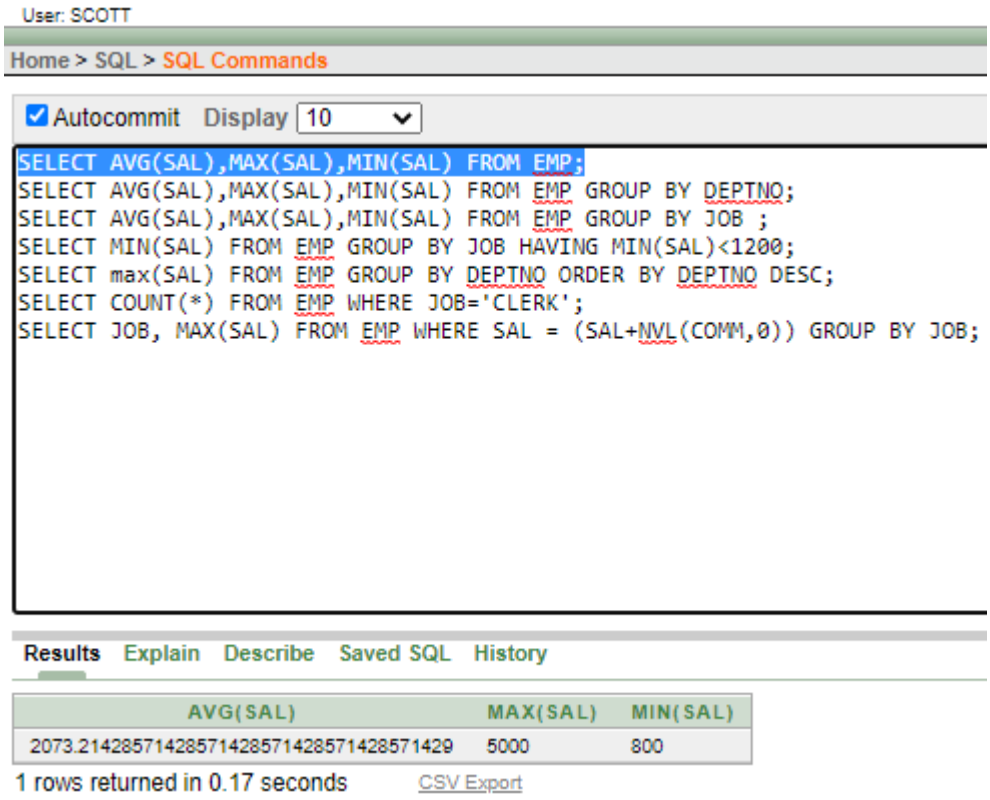
Query: SELECT ENAME,SAL FROM EMP WHERE SAL>1500 AND DEPTNO IN(10,30);



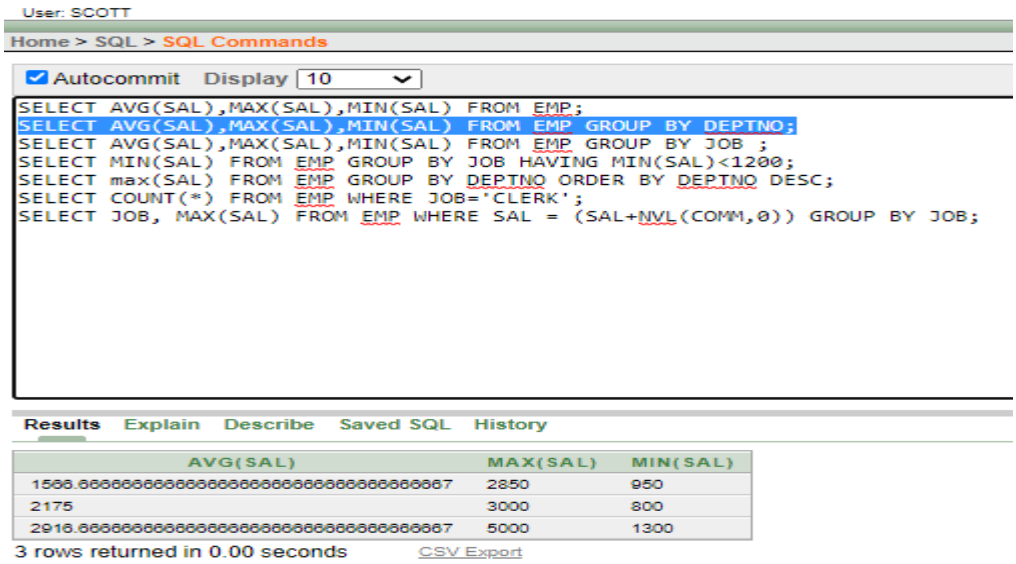
Date: 02/11/2020

Lab Task 2

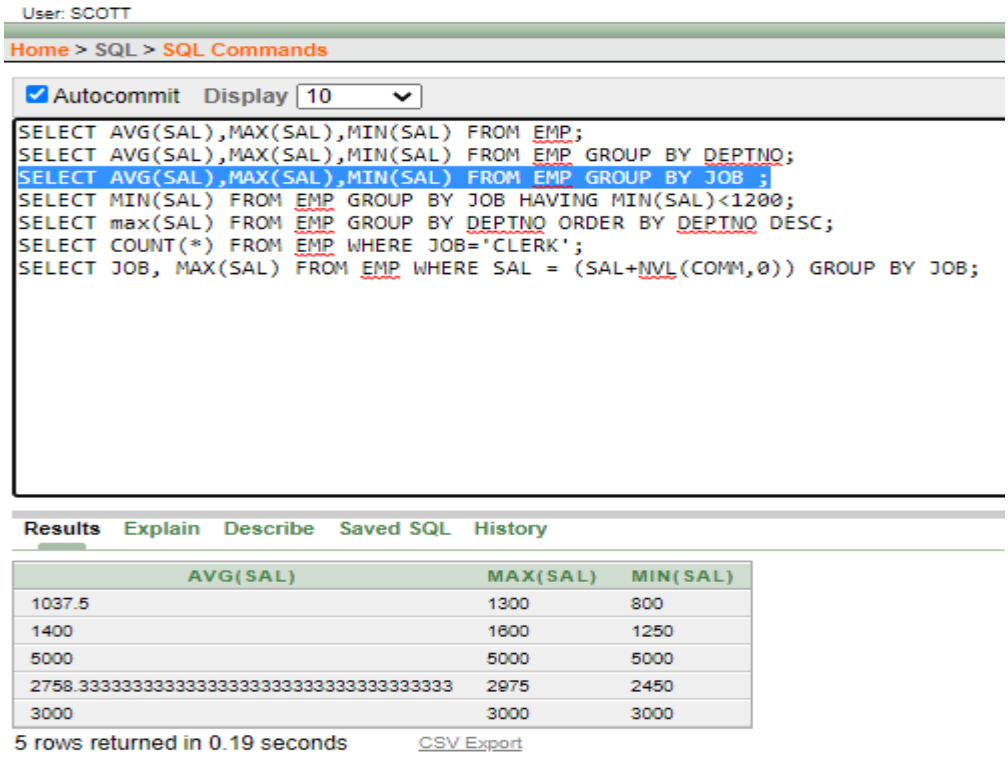
1. Find average, maximum, minimum salary of the employees.
Query: SELECT AVG(SAL),MAX(SAL),MIN(SAL) FROM EMP;



2. Find average, maximum, minimum salary of the employees according to department number.
Query: SELECT AVG(SAL),MAX(SAL),MIN(SAL) FROM EMP GROUP BY DEPTNO;



3. Find average, maximum, minimum salary of the employees according to job category.
Query: SELECT AVG(SAL),MAX(SAL),MIN(SAL) FROM EMP GROUP BY JOB ;


User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

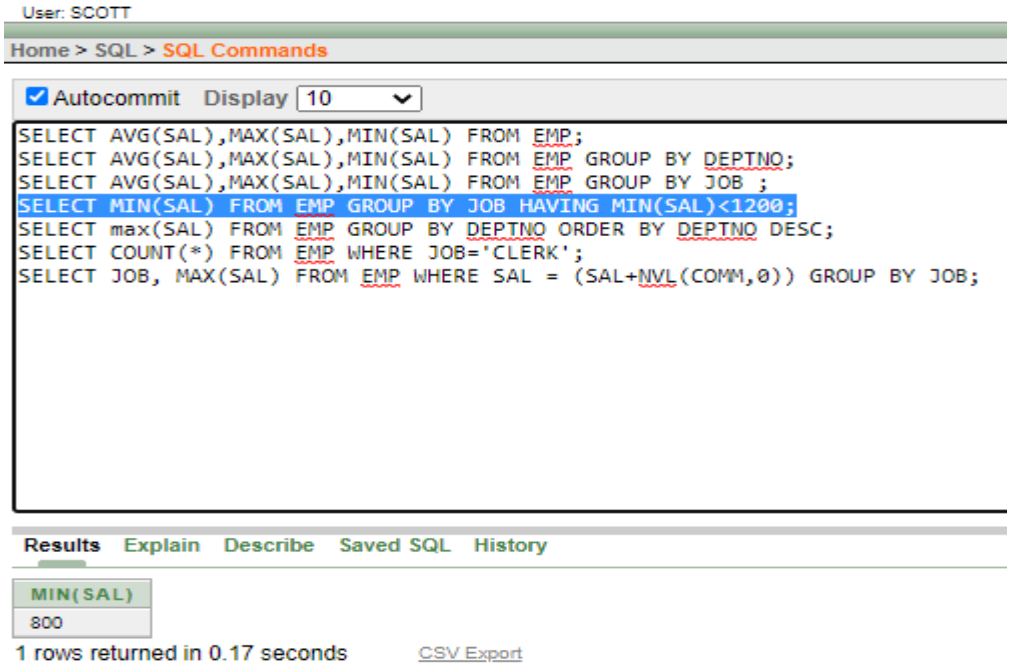
```
SELECT AVG(SAL),MAX(SAL),MIN(SAL) FROM EMP;
SELECT AVG(SAL),MAX(SAL),MIN(SAL) FROM EMP GROUP BY DEPTNO;
SELECT AVG(SAL),MAX(SAL),MIN(SAL) FROM EMP GROUP BY JOB ;
SELECT MIN(SAL) FROM EMP GROUP BY JOB HAVING MIN(SAL)<1200;
SELECT max(SAL) FROM EMP GROUP BY DEPTNO ORDER BY DEPTNO DESC;
SELECT COUNT(*) FROM EMP WHERE JOB='CLERK';
SELECT JOB, MAX(SAL) FROM EMP WHERE SAL = (SAL+NVL(COMM,0)) GROUP BY JOB;
```

Results Explain Describe Saved SQL History

AVG(SAL)	MAX(SAL)	MIN(SAL)
1037.5	1300	800
1400	1600	1250
5000	5000	5000
2758.333333333333333333333333333333333	2975	2450
3000	3000	3000

5 rows returned in 0.19 seconds CSV Export

4. Find the minimum salary job wise which are less than $1200.
Query: SELECT MIN(SAL) FROM EMP GROUP BY JOB HAVING MIN(SAL)<1200;


User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

```
SELECT AVG(SAL),MAX(SAL),MIN(SAL) FROM EMP;
SELECT AVG(SAL),MAX(SAL),MIN(SAL) FROM EMP GROUP BY DEPTNO;
SELECT AVG(SAL),MAX(SAL),MIN(SAL) FROM EMP GROUP BY JOB ;
SELECT MIN(SAL) FROM EMP GROUP BY JOB HAVING MIN(SAL)<1200;
SELECT max(SAL) FROM EMP GROUP BY DEPTNO ORDER BY DEPTNO DESC;
SELECT COUNT(*) FROM EMP WHERE JOB='CLERK';
SELECT JOB, MAX(SAL) FROM EMP WHERE SAL = (SAL+NVL(COMM,0)) GROUP BY JOB;
```

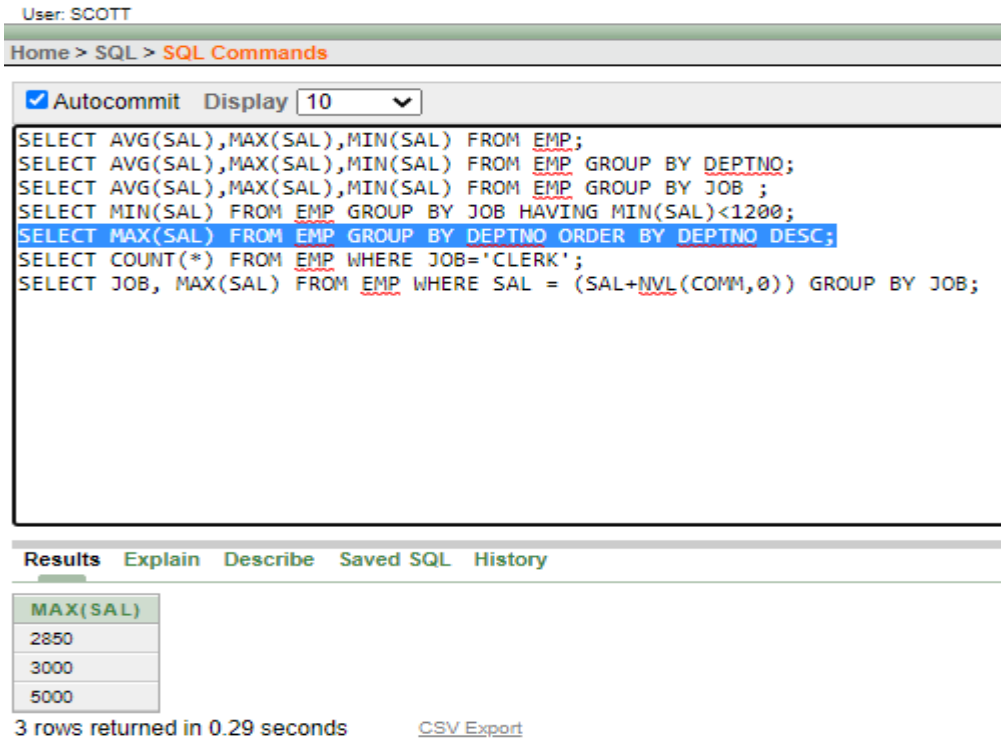
Results Explain Describe Saved SQL History

MIN(SAL)
800

1 rows returned in 0.17 seconds CSV Export

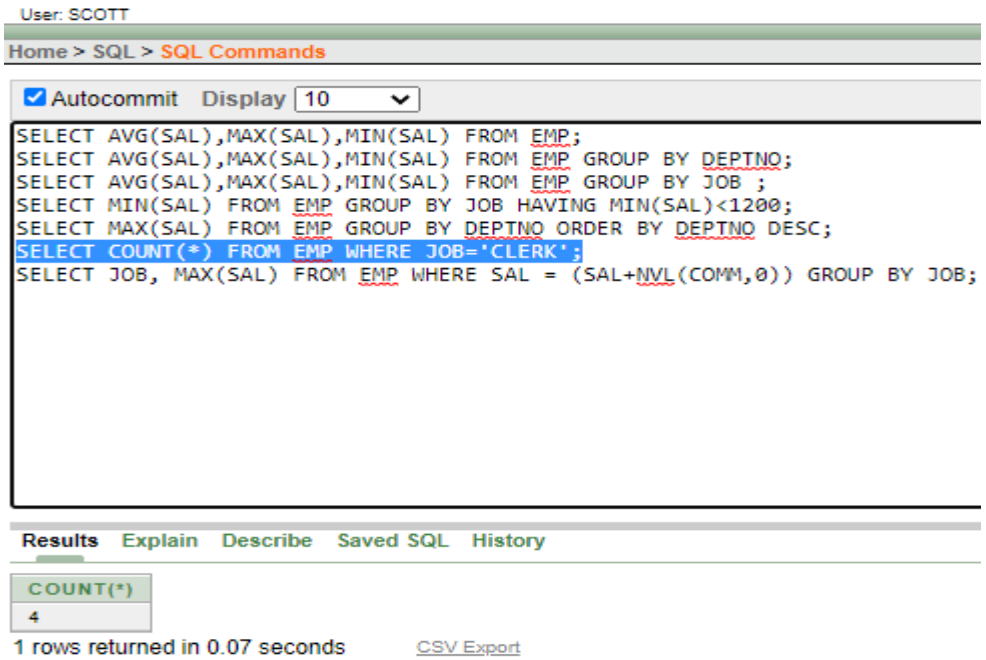
5. Find the maximum of the total salary of the employees group by department in descending order.

Query: SELECT MAX(SAL) FROM EMP GROUP BY DEPTNO ORDER BY DEPTNO DESC;



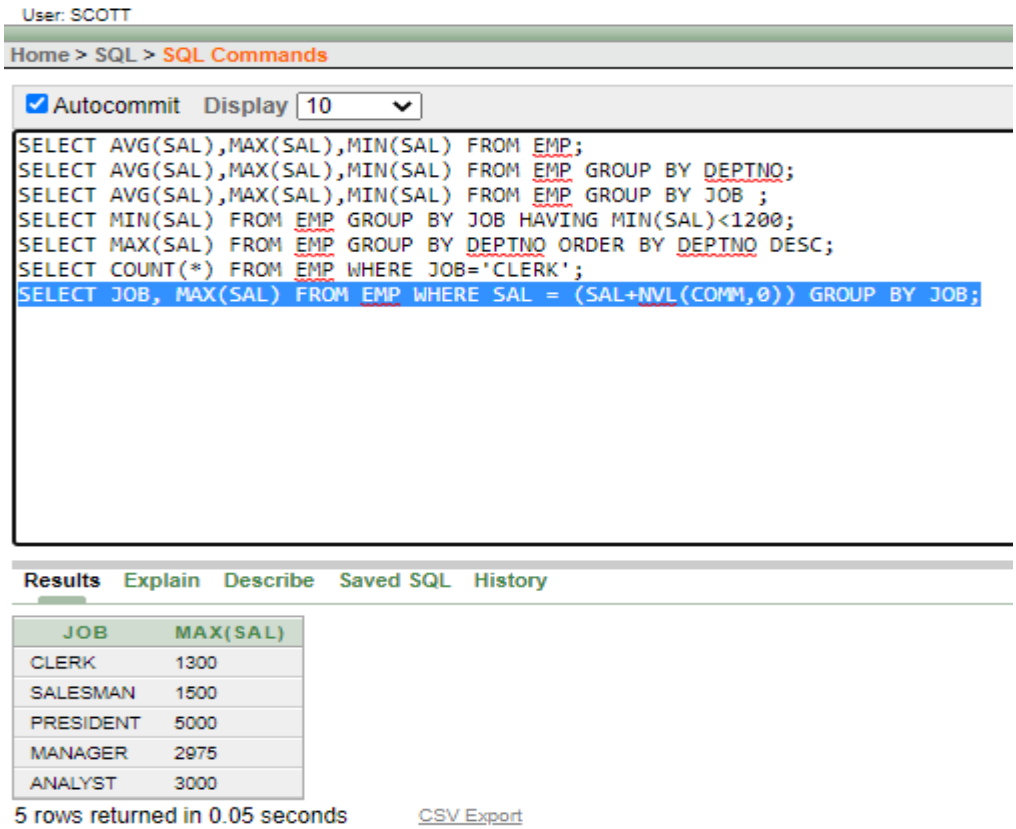
6. Find the number of employees working as a 'CLERK'.

Query: SELECT COUNT(*) FROM EMP WHERE JOB='CLERK';



7. Find out job group having highest amount of total salary. (Sal + comm)

Query: SELECT JOB, MAX(SAL) FROM EMP WHERE SAL = (SAL+NVL(COMM,0)) GROUP BY JOB;



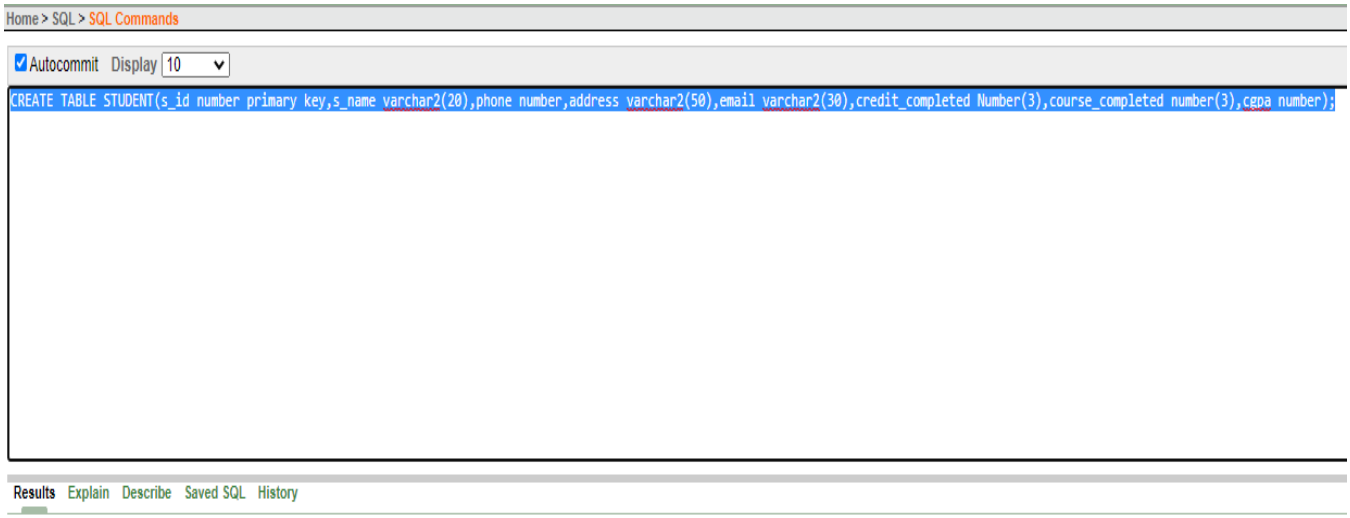
Date: 05/11/2020

Lab Task 3

1. Create a table named **Student** from following structure using SQL commands:

Column Name	Data Type
s_id	Number
s_name	Varchar2(20)
phone	number
address	Varchar2(50)
email	Varchar2(30)
credit_completed	Number(3)
course_completed	Number(2)
cgpa	Number

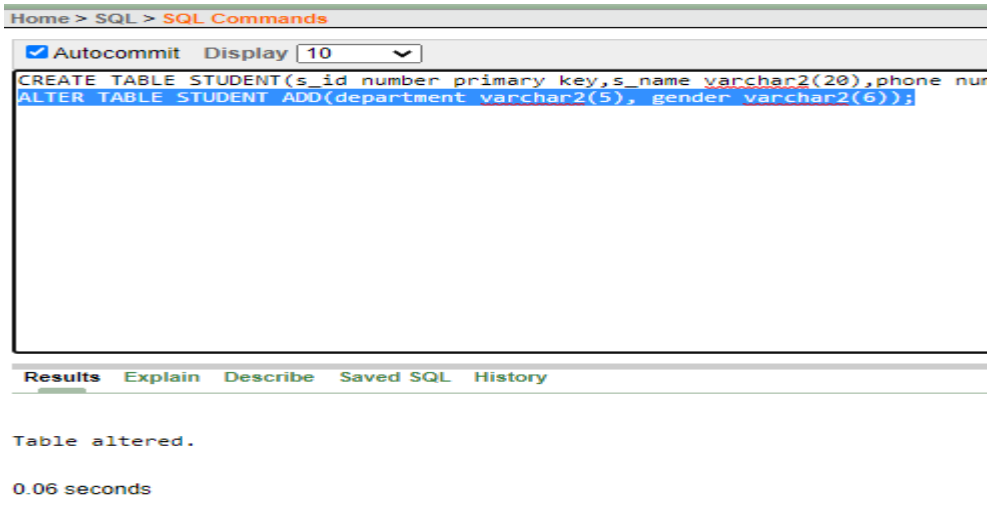
Query: CREATE TABLE STUDENT(s_id number primary key,s_name varchar2(20),phone number,address varchar2(50),email varchar2(30),credit_completed Number(3),course_completed number(3),cgpa number);



2. Add following columns into the above **student** table:

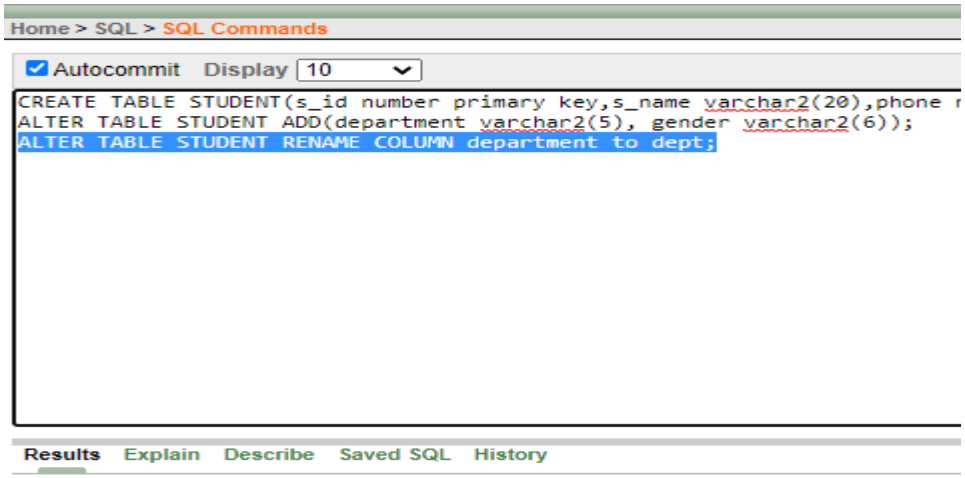
Column Name	Data Type
department	Varchar2(5)
gender	Varchar2(6)

Query: ALTER TABLE STUDENT ADD(department varchar2(5), gender varchar2(6));



3. Modify the column name **department** into **dept**.

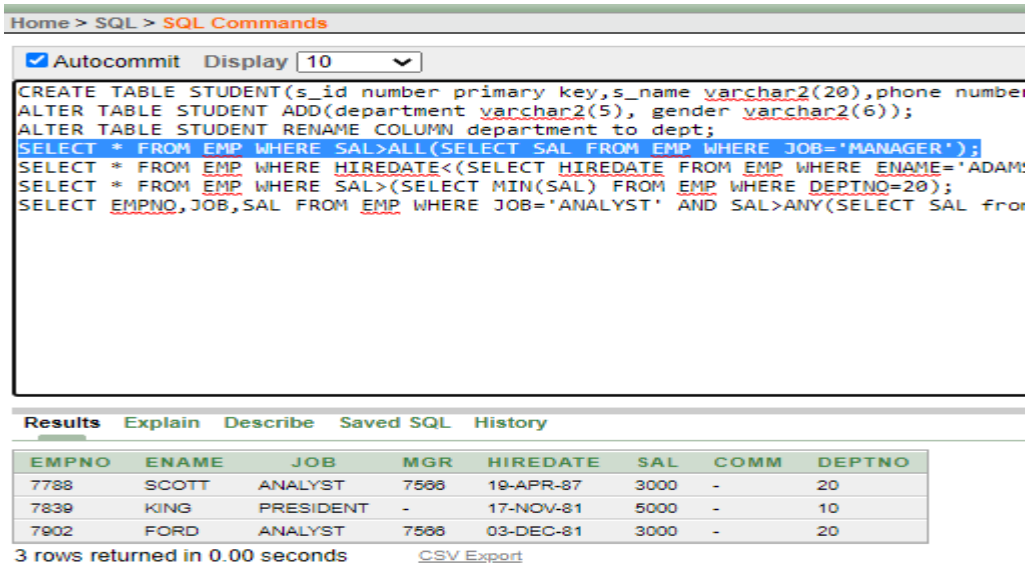
Query: ALTER TABLE STUDENT RENAME COLUMN department to dept;



Subqueries

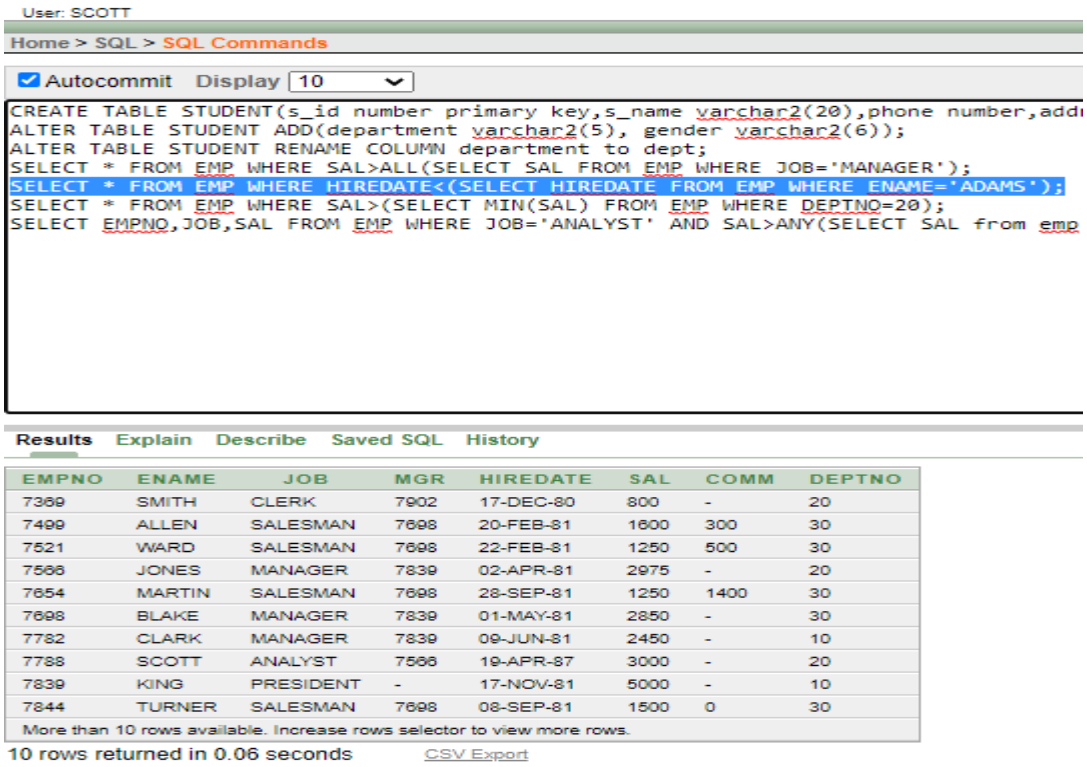
4. Display all the employees who are earning more than all the managers.

Query: SELECT * FROM EMP WHERE SAL>ALL(SELECT SAL FROM EMP WHERE JOB='MANAGER');



5. Select the list of employees who have joined after ADAMS.

Query: SELECT * FROM EMP WHERE HIREDATE<(SELECT HIREDATE FROM EMP WHERE ENAME='ADAMS');



User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

```
CREATE TABLE STUDENT(s_id number primary key,s_name varchar2(20),phone number,addr
ALTER TABLE STUDENT ADD(department varchar2(5), gender varchar2(6));
ALTER TABLE STUDENT RENAME COLUMN department to dept;
SELECT * FROM EMP WHERE SAL>ALL(SELECT SAL FROM EMP WHERE JOB='MANAGER');
SELECT * FROM EMP WHERE HIREDATE<(SELECT HIREDATE FROM EMP WHERE ENAME='ADAMS');
SELECT * FROM EMP WHERE SAL>(SELECT MIN(SAL) FROM EMP WHERE DEPTNO=20);
SELECT EMPNO,JOB,SAL FROM EMP WHERE JOB='ANALYST' AND SAL>ANY(SELECT SAL from emp
```

Results Explain Describe Saved SQL History

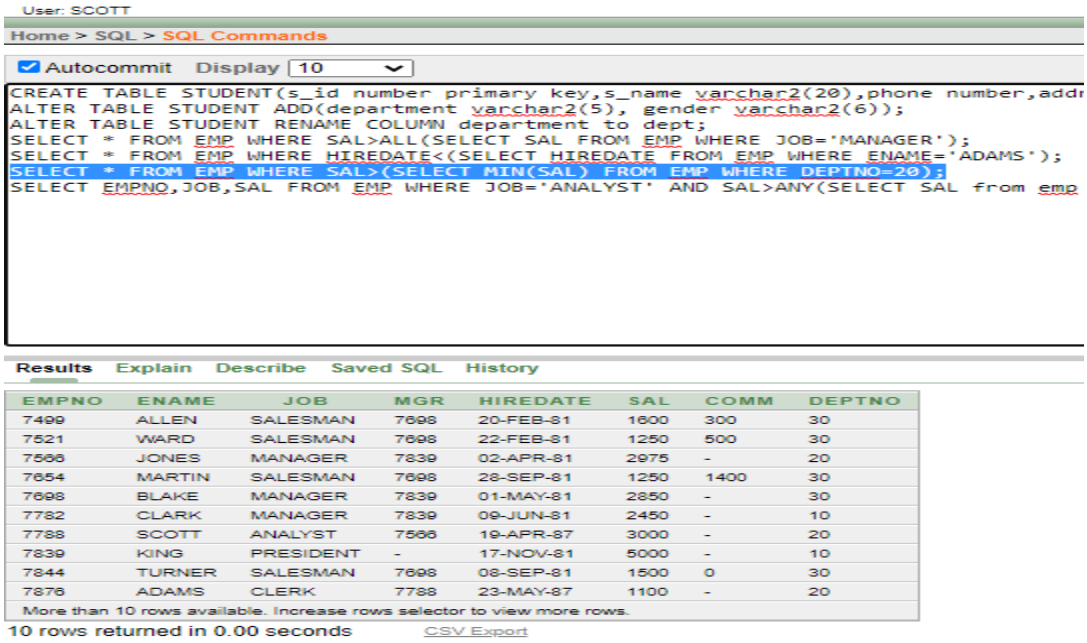
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800	-	20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	-	10
7788	SCOTT	ANALYST	7566	19-APR-87	3000	-	20
7839	KING	PRESIDENT	-	17-NOV-81	5000	-	10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.06 seconds CSV Export

6. Select the employee names who have total salary greater than the minimum salary of the deptno=20.

Query: SELECT * FROM EMP WHERE SAL>(SELECT MIN(SAL) FROM EMP WHERE DEPTNO=20);



User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

```
CREATE TABLE STUDENT(s_id number primary key,s_name varchar2(20),phone number,addr
ALTER TABLE STUDENT ADD(department varchar2(5), gender varchar2(6));
ALTER TABLE STUDENT RENAME COLUMN department to dept;
SELECT * FROM EMP WHERE SAL>ALL(SELECT SAL FROM EMP WHERE JOB='MANAGER');
SELECT * FROM EMP WHERE HIREDATE<(SELECT HIREDATE FROM EMP WHERE ENAME='ADAMS');
SELECT * FROM EMP WHERE SAL>(SELECT MIN(SAL) FROM EMP WHERE DEPTNO=20);
SELECT EMPNO,JOB,SAL FROM EMP WHERE JOB='ANALYST' AND SAL>ANY(SELECT SAL from emp
```

Results Explain Describe Saved SQL History

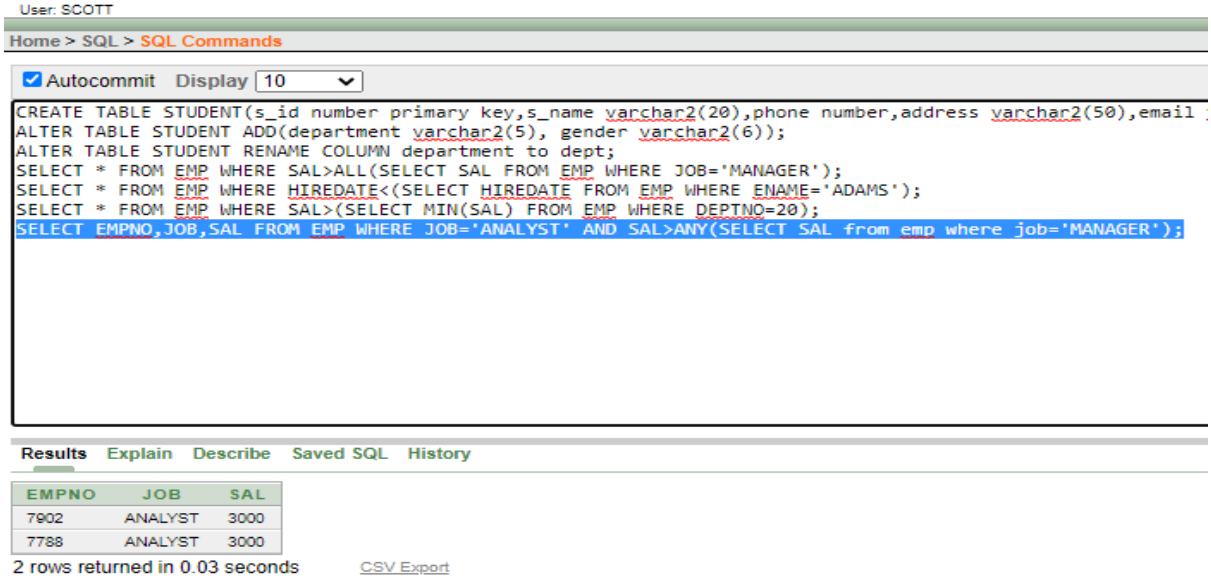
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	-	10
7788	SCOTT	ANALYST	7566	19-APR-87	3000	-	20
7839	KING	PRESIDENT	-	17-NOV-81	5000	-	10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	23-MAY-87	1100	-	20

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

7. Select employee number, job & salaries of all the Analysts who are earning more than anyof the managers.

Query: SELECT EMPNO,JOB,SAL FROM EMP WHERE JOB='ANALYST' AND SAL>ANY(SELECT SAL from emp where job='MANAGER');

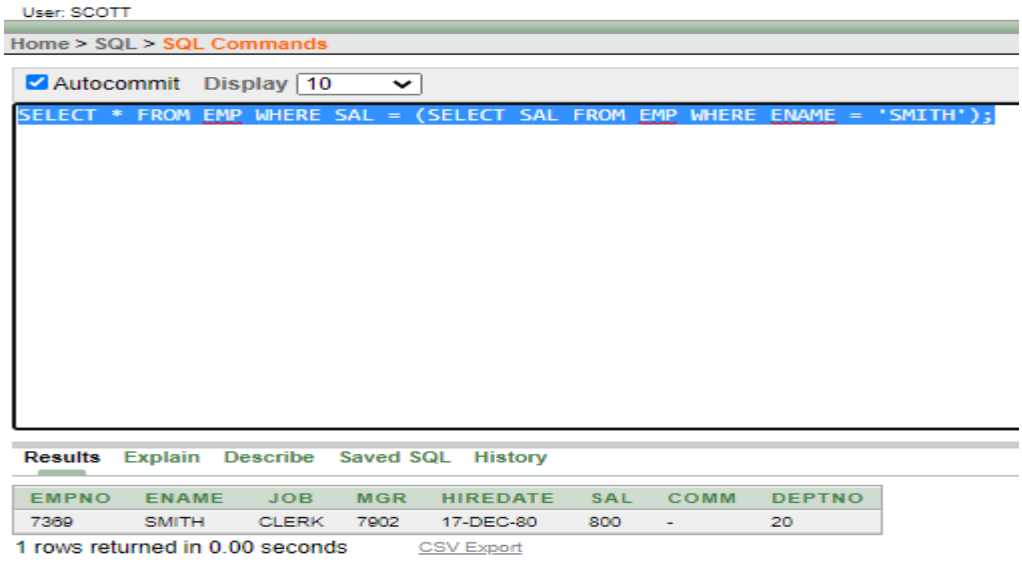


Date: 09/11/2020

Lab Task 4

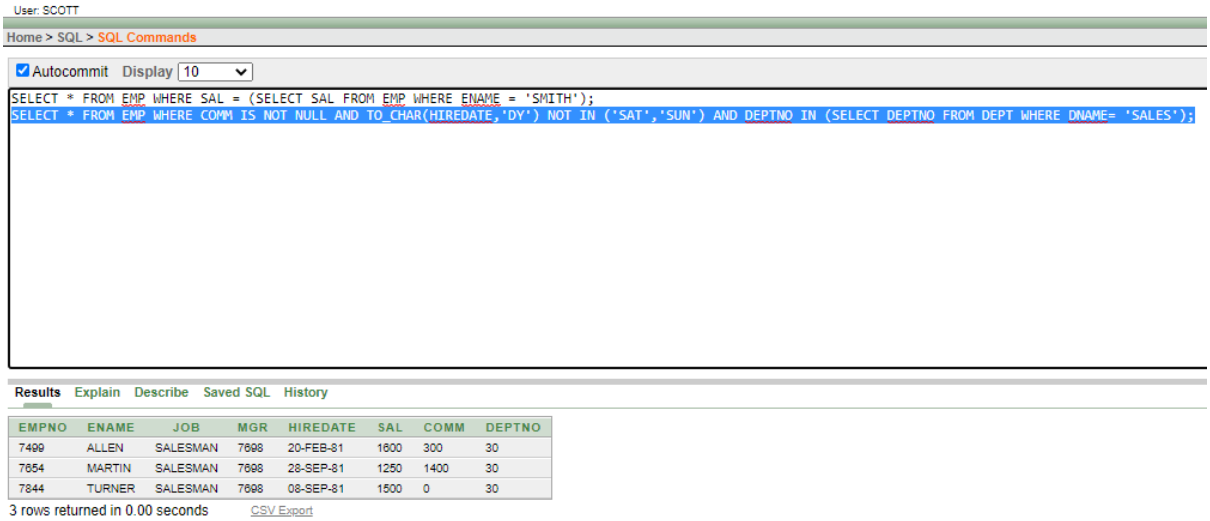
1. Select all the employees who are earning same as SMITH.

Query: SELECT * FROM EMP WHERE SAL = (SELECT SAL FROM EMP WHERE ENAME = 'SMITH');



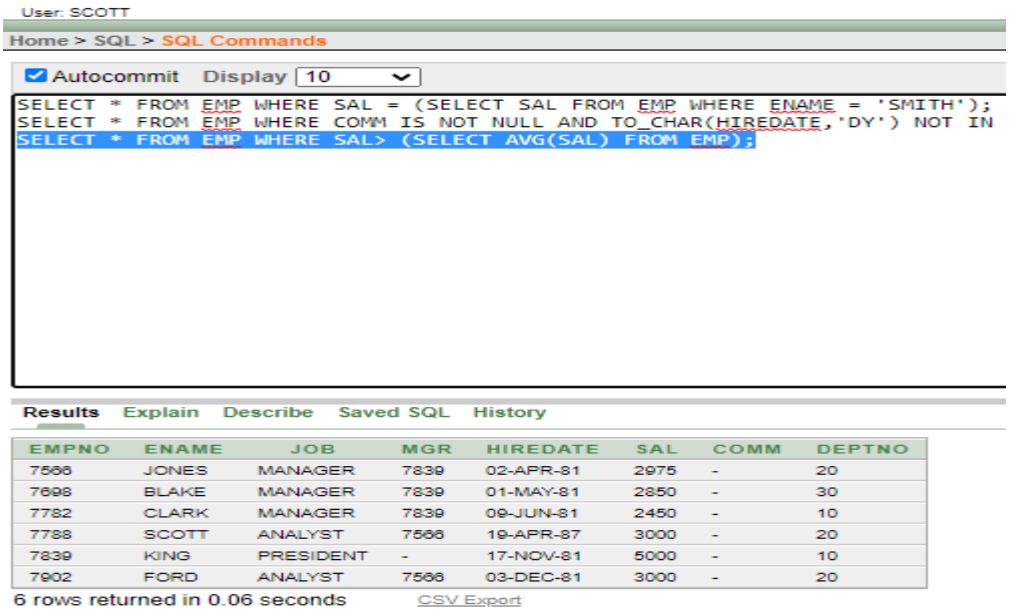
2. Display all the employees who are getting some commission in marketing department where the employees have joined only on weekdays.

Query: SELECT * FROM EMP WHERE COMM IS NOT NULL AND TO_CHAR(HIREDATE,'DY') NOT IN ('SAT','SUN') AND DEPTNO IN (SELECT DEPTNO FROM DEPT WHERE DNAME= 'SALES');



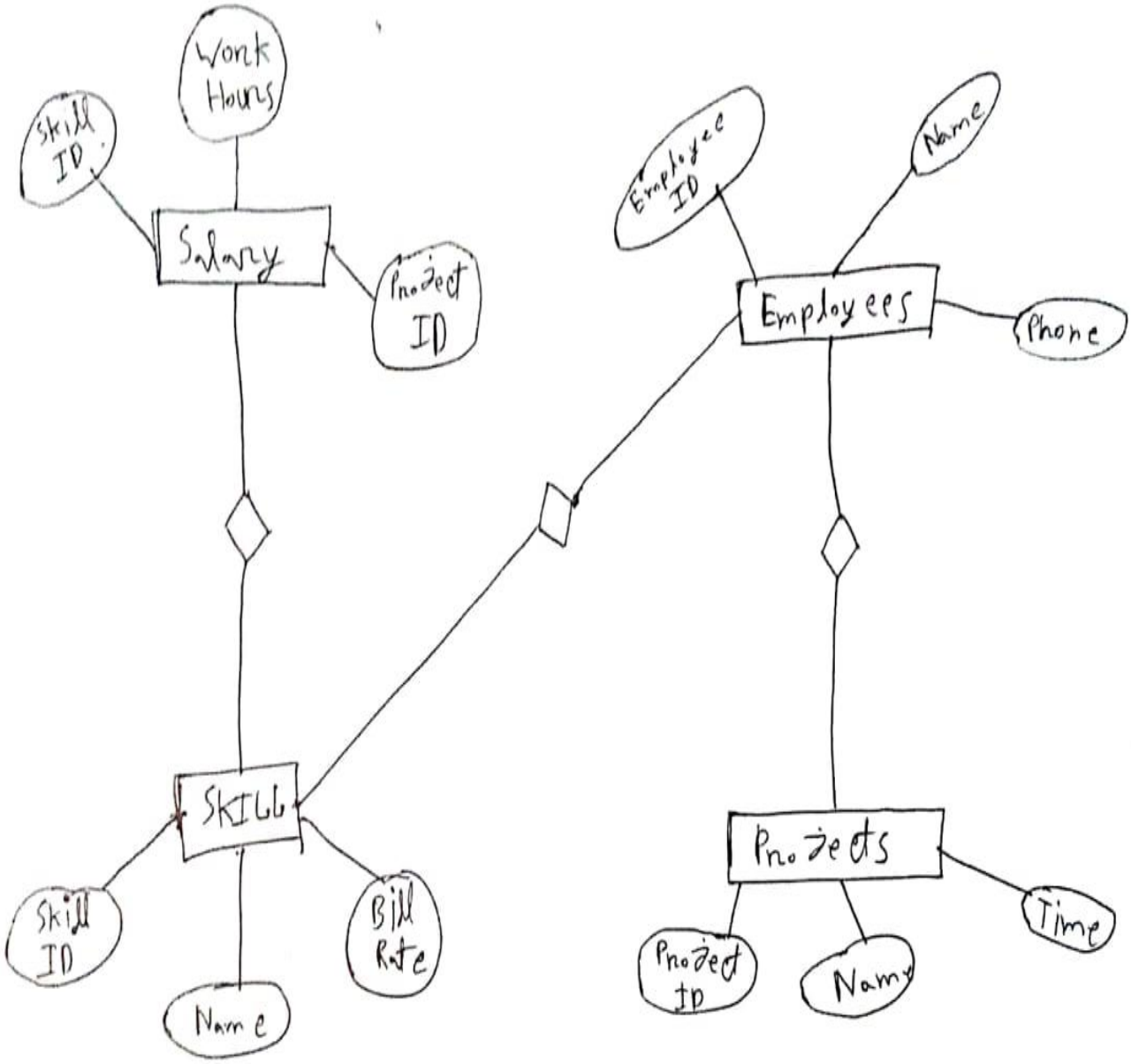
3. Display all the employees who are getting more than the average salaries of all the employees.

Query: SELECT * FROM EMP WHERE SAL> (SELECT AVG(SAL) FROM EMP);



4. ABC Consulting is a small-sized consulting firm in the IT industry. ABC's business is managing several Systems Development projects by assigning staff consultants to these projects as their skills are needed. Each employee is designated to have one primary skill, but there may be other employees with the same primary skill. A consultant may work on one or more projects, or may not yet be assigned to a project. The company charges for each project by billing each consultant's hours worked by the billing rate. The hourly billing rate is dependent on the employee's primary job skill.

Ans:



5. A company operates a warehouse parts supply business. The company has several warehouses located in Toronto which each store several hundreds of automotive parts. We need to keep a record of how many parts are "on hand" - meaning inventory levels that tell us how many we have for each part. To help us organize our parts, each part is assigned a specific classification. There are 4 classifications that we use to organize hundreds of parts.

Ans: