

Ximan Liu
CSC 453
HW2
Part B Screenshots

1. Retrieve the names of all employees who work on at least one of the projects. (In other words, look at the list of projects given in the PROJECT table, and retrieve the names of all employees who work on at least one of them.)

The screenshot shows the SQL Developer interface with two queries and their results.

Query Q1:

```
--Q1
SELECT Fname, Minit, Lname
FROM Employee
WHERE Ssn IN
(SELECT Essn FROM Works_On);
```

Query Q2:

```
--Q2
SELECT d.Dnumber, d.Dname, AVG(e.salary)
FROM Department d
JOIN Employee e ON e.Dno = d.Dnumber
```

Query Results:

Query Q1 results (7 rows):

	FNAME	MINIT	LNAME
1	John	B	Smith
2	Franklin	T	Wong
3	Joyce	A	English
4	James	E	Borg
5	Jennifer	S	Wallace
6	Ahmad	V	Jabbar
7	Alicia	J	Zelava

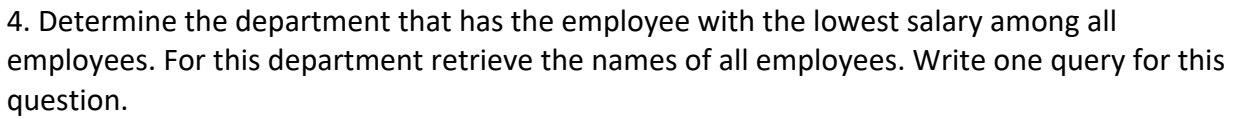
Query Q2 results (3 rows):

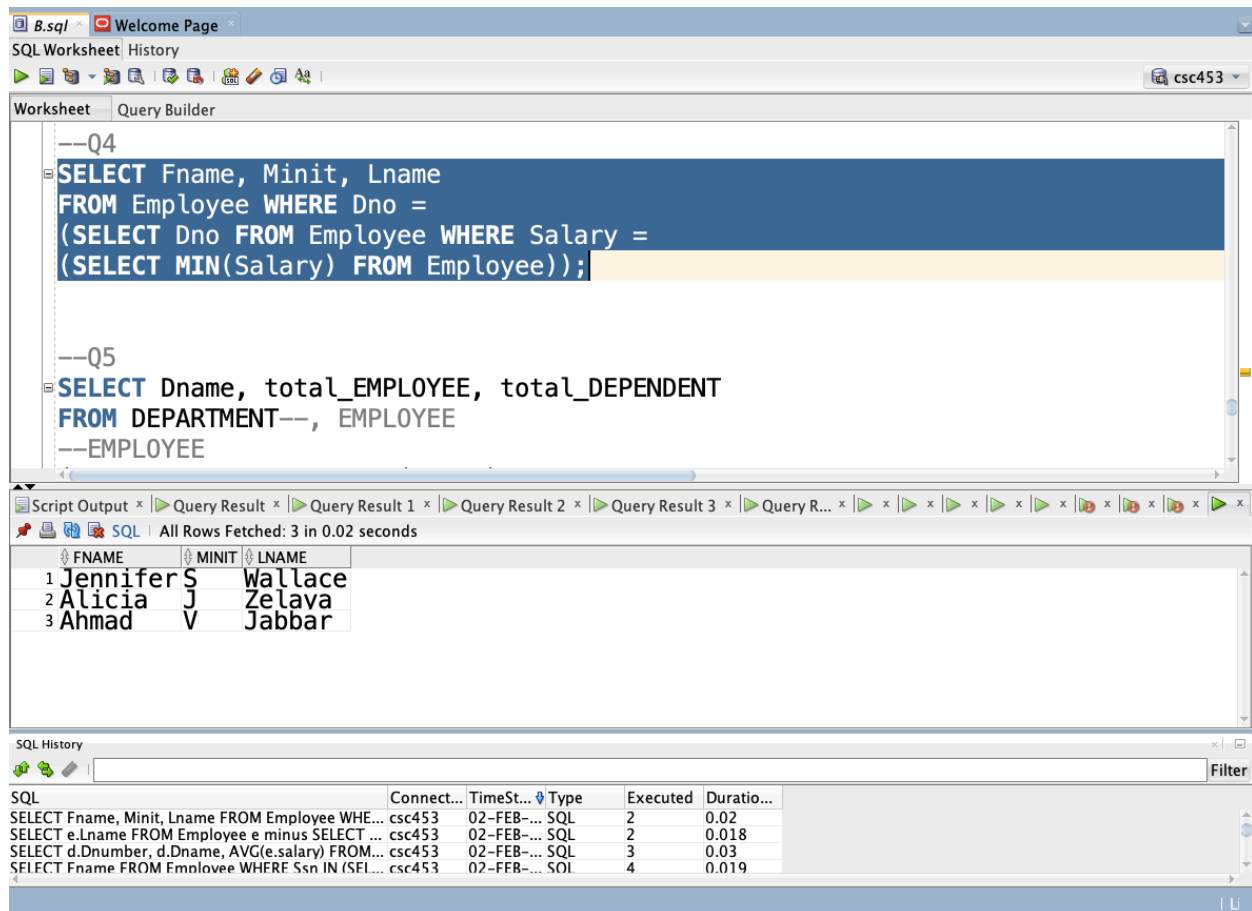
	DNUMBER	DNAME	AVG(SALARY)
1	10	ACCOUNTING	2916.67
2	20	MARKETING	3900
3	30	RESEARCH	11666.67

SQL History:

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
SELECT Fname, Minit, Lname FROM Employee WHE...	csc453	02-FEB-...	SQL	1	0.033
SELECT Fname, Minit, Lname FROM Employee WHE...	csc453	02-FEB-...	SQL	2	0.02
SELECT e.Lname FROM Employee e minus SELECT ...	csc453	02-FEB-...	SQL	2	0.018
SELECT d.Dnumber, d.Dname, AVG(e.salary) FROM...	csc453	02-FEB-...	SQL	3	0.03

2. For each department, retrieve the department number, department name, and the average salary of all employees working in that department. Order the output by department number in ascending order.





5. Find the total number of employees and the total number of dependents for every department (the number of dependents for a department is the sum of the number of dependents for each employee working for that department). Return the result as department name, total number of employees, and total number of dependents.

Worksheet Query Builder

```
--Q5
--EMPLOYEE
SELECT d1.Dname, COUNT(e.Dno) total_EMPLOYEE
FROM EMPLOYEE e, DEPARTMENT d1
WHERE e.Dno = d1.Dnumber
GROUP BY d1.Dname, e.Dno;
--DEPENDENT
SELECT d1.Dname, COUNT(*) total_DEPENDENT
FROM DEPARTMENT d1, DEPENDENT d2, EMPLOYEE e
WHERE d2.essn = e.ssn AND e.Dno = d1.Dnumber
GROUP BY d1.Dname, e.Dno;

--Q6
```

Query Result x Query Result 1 x Query Result 2 x Query Result 3 x

SQL All Rows Fetched: 2 in 0.015 seconds

	DNAME	TOTAL_DEPENDENT
1	Research	7
2	Administration	2

SQL History

SQL	Connect...	TimeSt...	Type	Executed	Duration...
SELECT d1.Dname, COUNT(*) total_DEPENDENT FR...	csc453	02-FEB-...	SQL	2	0.015
SELECT d1.Dname, COUNT(e.Dno) total_EMPLOYEE...	csc453	02-FEB-...	SQL	2	0.014
SELECT t1.TID, t1.TripState, t1.TravelMode, t1.Fare...	csc453	02-FEB-...	SQL	1	0.016
SELECT t2.TID, t2.TripState, t2.TravelMode, t2.Fare...	csc453	02-FEB-...	SQL	1	0.016

Line 48 Column 26 Insert Modified! Unix/Mac: LF

6. Retrieve the names of employees whose salary is within \$20,000 of the salary of the employee who is paid the most in the company (e.g., if the highest salary in the company is \$80,000, retrieve the names of all employees that make at least \$60,000).

The screenshot shows a SQL IDE with a query editor and a results pane. The query in the editor is:

```
--Q6
SELECT Fname, Minit, Lname
FROM Employee
WHERE Salary <
(SELECT MAX(Salary)
FROM Employee)
INTERSECT
SELECT Fname, Minit, Lname
FROM Employee
WHERE Salary >=
(SELECT MAX(Salary) - 20000
FROM Employee);
```

The results pane shows the output of the query, which is a table with three columns: FNAME, MINIT, and LNAME. The results are:

	FNAME	MINIT	LNAME
1	Franklin	T	Wong
2	Jennifer	S	Wallace
3	Ramesh	K	Narayan

The bottom pane shows the SQL History, which lists the executed queries and their execution details:

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
SELECT Fname, Minit, Lname FROM Employee WHE...	csc453	02-FEB-...	SQL	4	0.02
SELECT Fname, Minit, Lname FROM Employee WHE...	csc453	02-FEB-...	SQL	1	0.033
SELECT Fname, Minit, Lname FROM Employee WHE...	csc453	02-FEB-...	SQL	2	0.02
SFLECT e.Lname FROM Employee e minus SELECT ...	csc453	02-FEB-...	SQL	2	0.018