CIS530– Lab Assignment 4
Name: Reza Shisheie
ID: 2708062
Object: Querying a Relational Database COMPANY database

1. Update the following new changes into the database:

1) Joyce English with Ssn = 453453453 got married with Joe Anderson. (Joe is not an Employee of the Company)
2) Jenifer Wallace with Ssn = 987654321 just had a new daughter named Erica.
3) Jenifer Wallace with Ssn = 987654321 is just assigned to a new project number '10' to work on with 0 initial hours.

Add these new entries into Dependent, Works_On tables in your database then Select * from Dependent and Select * from Works_On to show the updated table content.
Note that if you don't insert these data as directed, your query results for Q1 – Q5 won't be correct.

```
-- data for Project 4
insert into DEPENDENT values ( '453453453', 'Joe Anderson' ,'M',NULL,'Spouce');
insert into DEPENDENT values ( '987654321', 'Erica' ,'F',NULL,'Daughter');

-- data for Project 4
insert into WORKS_ON values ( '987654321', '10', '0');


-- Part 1
select * from WORKS_ON
select * from DEPENDENT
```

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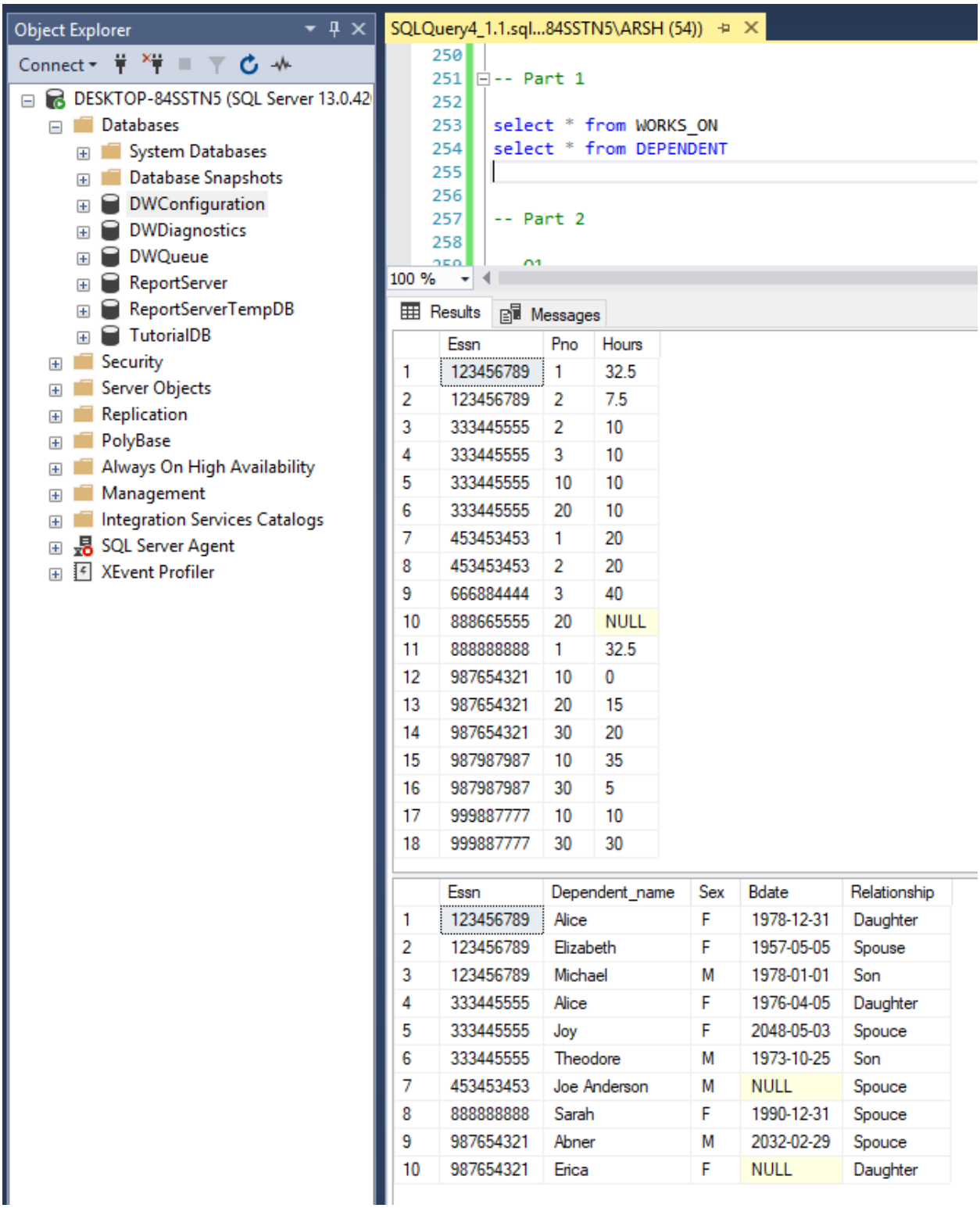

	Essn	Pno	Hours
1	123456789	1	32.5
2	123456789	2	7.5
3	333445555	2	10
4	333445555	3	10
5	333445555	10	10
6	333445555	20	10
7	453453453	1	20
8	453453453	2	20
9	666884444	3	40
10	888665555	20	NULL
11	888888888	1	32.5
12	987654321	10	0
13	987654321	20	15
14	987654321	30	20
15	987987987	10	35
16	987987987	30	5
17	999887777	10	10
18	999887777	30	30

	Essn	Dependent_name	Sex	Bdate	Relationship
1	123456789	Alice	F	1978-12-31	Daughter
2	123456789	Elizabeth	F	1957-05-05	Spouse
3	123456789	Michael	M	1978-01-01	Son
4	333445555	Alice	F	1976-04-05	Daughter
5	333445555	Joy	F	2048-05-03	Spouce
6	333445555	Theodore	M	1973-10-25	Son
7	453453453	Joe Anderson	M	NULL	Spouce
8	888888888	Sarah	F	1990-12-31	Spouce
9	987654321	Abner	M	2032-02-29	Spouce
10	987654321	Erica	F	NULL	Daughter

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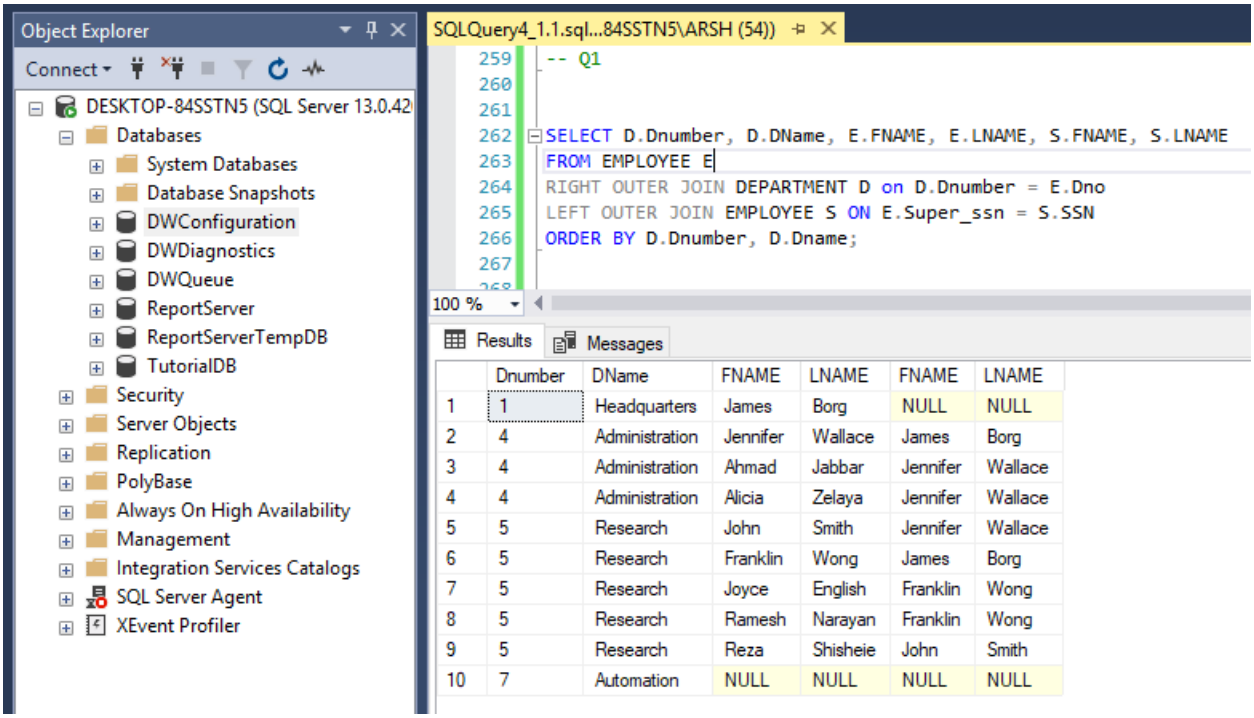
2. Write SQL Select statements to retrieve data in the followings:

Q1:
For each department, list all the employees who are working in the department with the employee's first and last name and first and last name of his or her immediate supervisor. Include all the departments and all the employees (including who do not have any supervisor). List the result in the order of each department number and first name of each employee.

```
-- Q1

SELECT D.Dnumber, D.DName, E.FNAME, E.LNAME, S.FNAME, S.LNAME
FROM EMPLOYEE E
RIGHT OUTER JOIN DEPARTMENT D on D.Dnumber = E.Dno
LEFT OUTER JOIN EMPLOYEE S ON E.Super_ssn = S.SSN
ORDER BY D.Dnumber, D.Dname;
```



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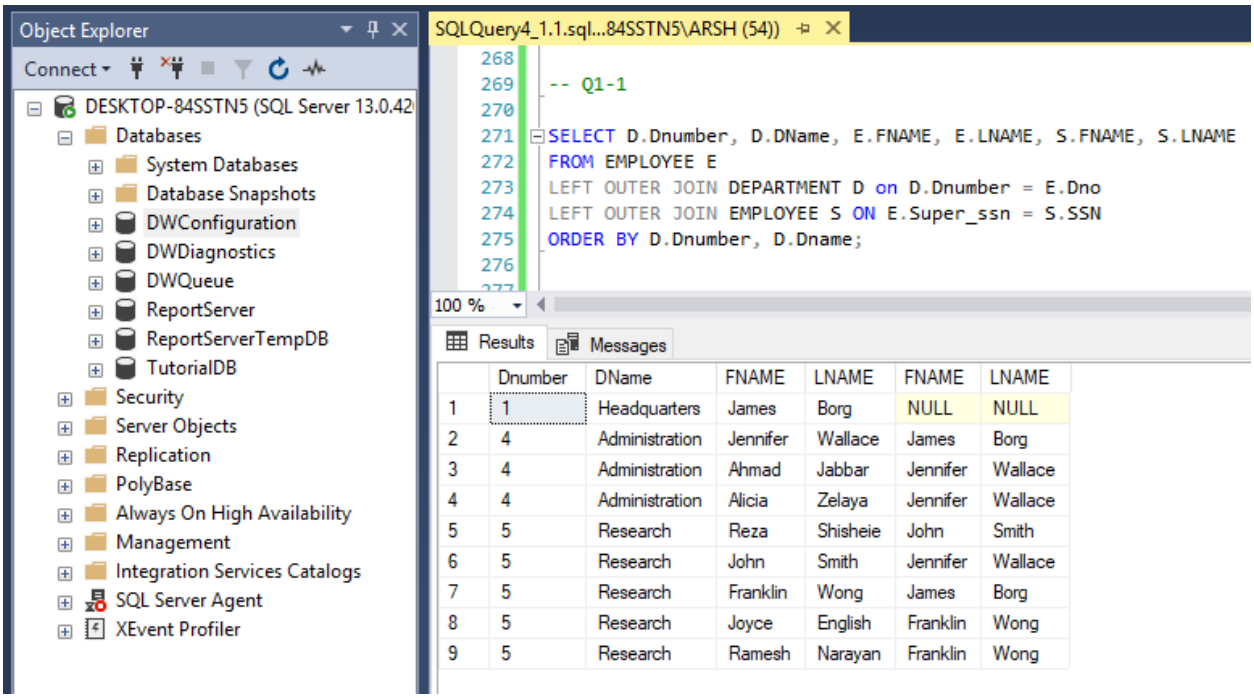
Different version of Q1:
Q1_1: List the same information as Q1 with a change: List all the employees (including who do not have any supervisor) but do not list the departments that no employee is working for in the output.

```
-- Q1-1

SELECT D.Dnumber, D.DName, E.FNAME, E.LNAME, S.FNAME, S.LNAME
FROM EMPLOYEE E
LEFT OUTER JOIN DEPARTMENT D on D.Dnumber = E.Dno
LEFT OUTER JOIN EMPLOYEE S ON E.Super_ssn = S.SSN
ORDER BY D.Dnumber, D.Dname;
```



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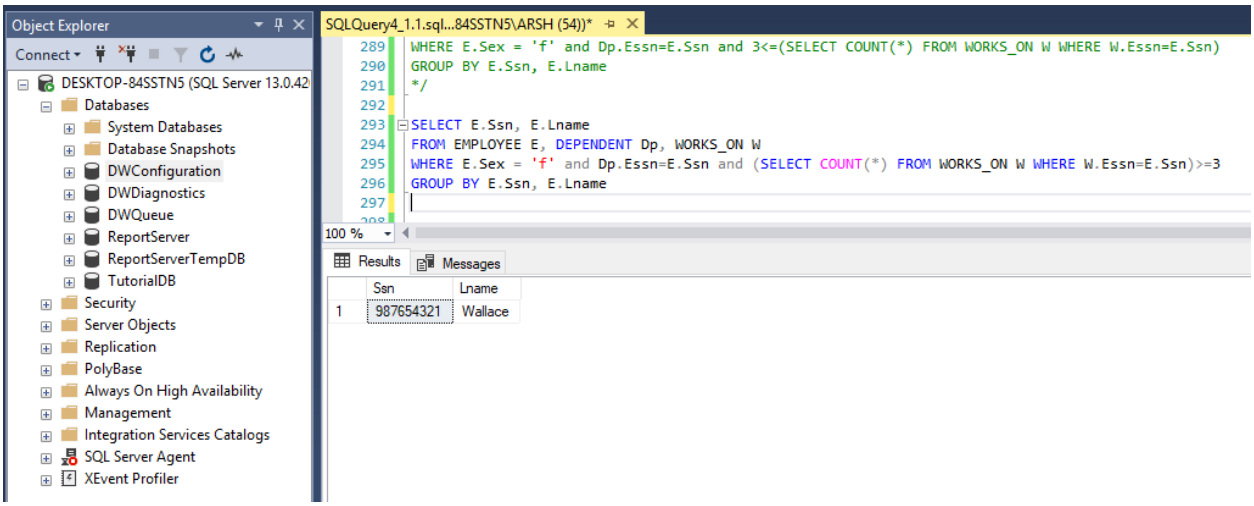
Q2:

Get SSN and the last name of married female employees who work on three or more projects

```
-- Q2

SELECT E.Ssn, E.Lname
FROM EMPLOYEE E, DEPENDENT Dp, WORKS_ON W
WHERE E.Sex = 'f' and Dp.Essn=E.Ssn and (SELECT COUNT(*) FROM WORKS_ON W WHERE
W.Essn=E.Ssn)>=3
GROUP BY E.Ssn, E.Lname
```



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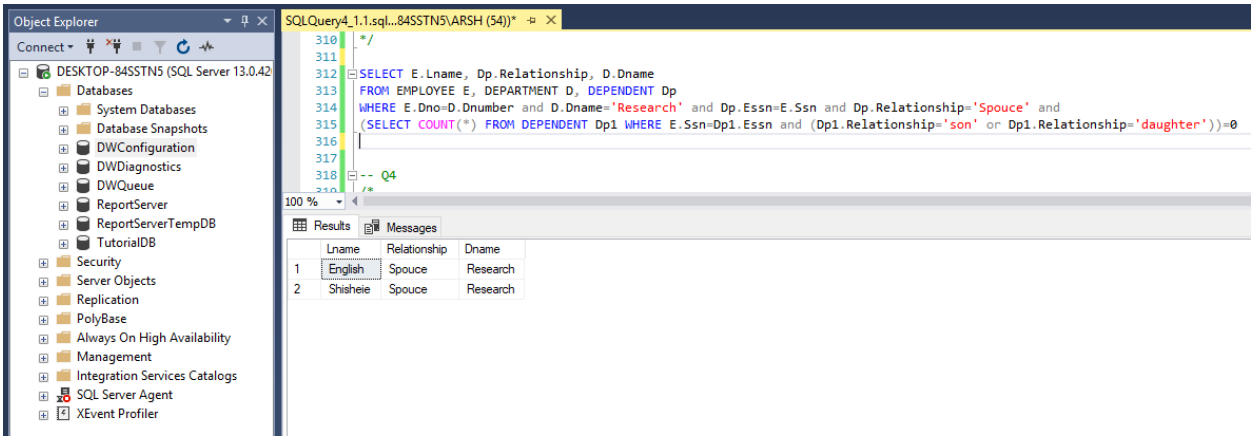
Q3:
List the name of employees who is working for 'Research' department and are married but have no children.

```
--Married = Select ESSN From Dependent Where relationship = 'spouse';
--Girls = Select ESSN From Dependent Where relationship = 'daughter';
--Boys = Select ESSN From Dependent Where relationship = 'son';


-- Q3

SELECT E.Lname, Dp.Relationship, D.Dname
FROM EMPLOYEE E, DEPARTMENT D, DEPENDENT Dp
WHERE E.Dno=D.Dnumber and D.Dname='Research' and Dp.Essn=E.Ssn and
Dp.Relationship='Spouce' and
(SELECT COUNT(*) FROM DEPENDENT Dp1 WHERE E.Ssn=Dp1.Essn and (Dp1.Relationship='son' or
Dp1.Relationship='daughter'))=0
```



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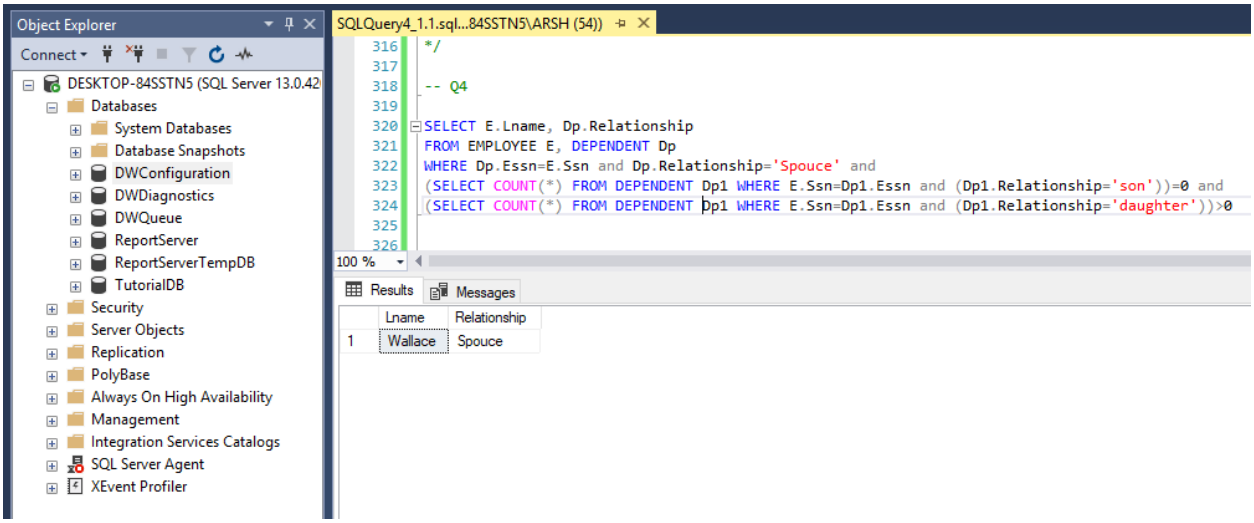
```
--Married = Select ESSN From Dependent Where relationship = ‘spouse’;
--Girls = Select ESSN From Dependent Where relationship = ‘daughter’;
--Boys = Select ESSN From Dependent Where relationship = ‘son’;
```

Q4:
Get the last name of married employees who only have daughters.

```
-- Q4

SELECT E.Lname, Dp.Relationship
FROM EMPLOYEE E, DEPENDENT Dp
WHERE Dp.Essn=E.Ssn and Dp.Relationship='Spouce' and
(SELECT COUNT(*) FROM DEPENDENT Dp1 WHERE E.Ssn=Dp1.Essn and (Dp1.Relationship='son'))=0
and
(SELECT COUNT(*) FROM DEPENDENT Dp1 WHERE E.Ssn=Dp1.Essn and
(Dp1.Relationship='daughter'))>0
```



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Q5:
Give the last name and ssn of those employees who work in any project(s) where there are more female than male employees.

```
-- Q5

SELECT P.Pnumber, E.Lname, E.Ssn
FROM PROJECT P, EMPLOYEE E, WORKS_ON W
WHERE (SELECT COUNT(*) FROM WORKS_ON W, EMPLOYEE E WHERE P.Pnumber=W.Pno and W.Essn=E.Ssn
and E.Sex='F' )>
(SELECT COUNT(*) FROM WORKS_ON W, EMPLOYEE E WHERE P.Pnumber=W.Pno and W.Essn=E.Ssn and
E.Sex='M' ) and
P.Pnumber=W.Pno and W.Essn=E.Ssn
ORDER By P.Pnumber
```