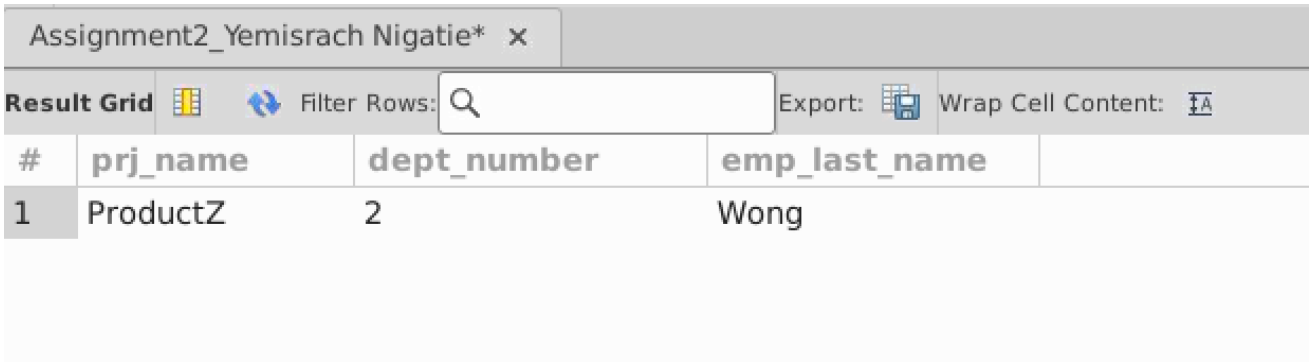
ANSWER SHEET FOR ASSIGNMENT 2 (Yemisrach Nigatie)

Question 1: For every project located in 'Montréal, list the project name, the controlling department number, and the department manager's last name.

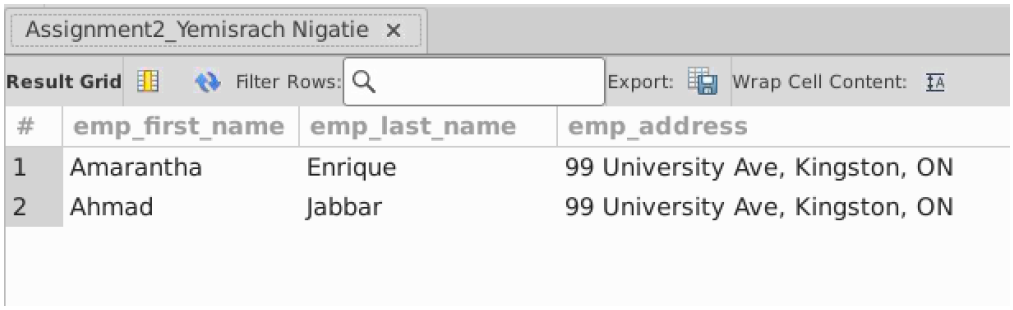
```
SELECT P.prj_name, E.dept_number, E.emp_last_name
FROM WORKSON W
JOIN PROJECT P ON P.prj_number=W.prj_number
JOIN EMPLOYEE E ON E.emp_sin=W.emp_sin
JOIN EMPLOYEE M on E.emp_sin=M.manager_sin #filters if the employee is also a manager
WHERE P.`prj_location`='Montréal';
```



#	prj_name	dept_number	emp_last_name
1	ProductZ	2	Wong

Question 2: Retrieve repeated addresses and the names of employees who lives at these addresses.

```
SELECT emp_first_name, emp_last_name, emp_address
FROM EMPLOYEE
WHERE emp_address IN
(SELECT emp_address #the query starting from this line helps to filter the repeated address
FROM EMPLOYEE
GROUP BY emp_address
HAVING COUNT(*)>1);
```



#	emp_first_name	emp_last_name	emp_address
1	Amarantha	Enrique	99 University Ave, Kingston, ON
2	Ahmad	Jabbar	99 University Ave, Kingston, ON

Question 3: Retrieve the first name, address and salary of each employee whose last name starts with the letter ’E’ and works for either the ’Marketing’ or the ’Administration’ department.

```
SELECT DISTINCT E.emp_first_name, E.emp_address, E.emp_salary
FROM EMPLOYEE AS E
        JOIN
DEPARTMENT AS D
ON E.dept_number=D.dept_number
WHERE E.emp_last_name LIKE 'E%'
AND (D.dept_Name = 'Marketing' OR D.dept_Name = 'Administration');
```

#OR

```
SELECT  E.emp_first_name, E.emp_address, E.emp_salary
FROM EMPLOYEE E, DEPARTMENT D
WHERE E.dept_number = D.dept_number
AND E.emp_last_name LIKE 'E%' #filters employees whose last name starts with the letter ‘E’
AND D.dept_Name in ('Marketing', 'Administration'); #filters who works for one of the departments
```

Assignment2_Yemisrach Nigatie ×

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

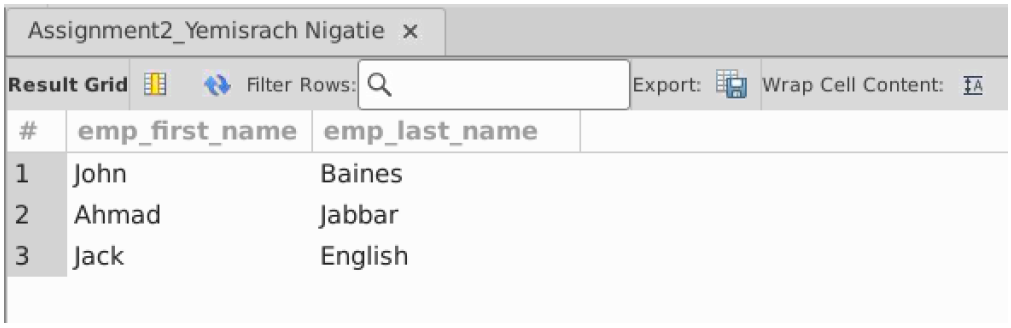
#	emp_first_name	emp_address	emp_salary
1	Jack	1455 Boulevard de Maisonneuve O, Montréal, QC	30000
2	Joanne	85 Ave, Edmonton, AB	25000
3	Amelia	7 King's College Cir, Toronto, ON	26000

Question 4: List the names of managers who have at least one dependent.

```
SELECT DISTINCT E.emp_first_name, E.emp_last_name
FROM EMPLOYEE E, EMPLOYEE M, DEPENDENT D
WHERE D.emp_sin = E.emp_sin #filters which employee has dependent
AND E.emp_sin = M.manager_sin #checks if the employee is a manager on the same table
GROUP BY E.emp_first_name, E.emp_last_name
```

OR

```
SELECT DISTINCT E.emp_first_name, E.emp_last_name
FROM EMPLOYEE AS E
JOIN EMPLOYEE M
WHERE E.emp_sin=M.manager_sin
AND EXISTS (SELECT * FROM DEPENDENT AS D WHERE D.emp_sin = E.emp_sin);
```



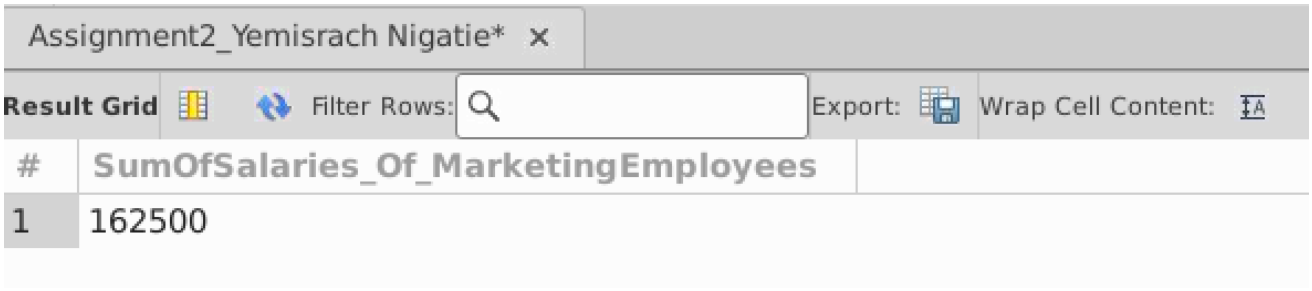
#	emp_first_name	emp_last_name
1	John	Baines
2	Ahmad	Jabbar
3	Jack	English

Question 5: Find the sum of the salaries of all employees of the 'Marketing' department.

```
SELECT sum(emp_salary) AS SumOfSalaries_Of_MarketingEmployees
FROM EMPLOYEE AS E
        JOIN
DEPARTMENT AS D
ON D.dept_number=E.dept_number
WHERE D.dept_name = 'Marketing'; #to filter salary of employees who works in Marketing dept
```

#OR

```
SELECT sum (emp_salary) AS SumOfSalaries_Of_MarketingEmployees
FROM EMPLOYEE E, DEPARTMENT  D
WHERE E.dept_number = D.dept_number
AND D.dept_name = 'Marketing';
```



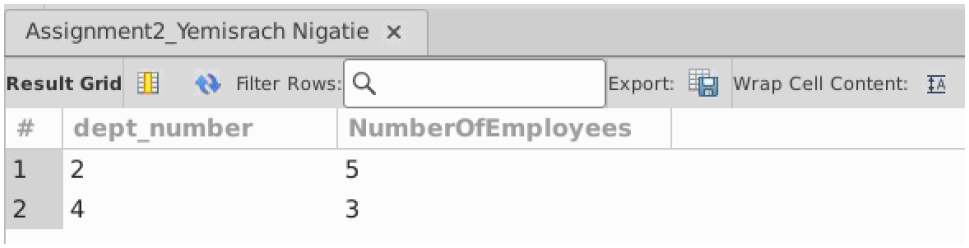
#	SumOfSalaries_Of_MarketingEmployees
1	162500

Question 6: For each department that has more than two employees, retrieve the department number and the number of its employees who are making less than $50,000.

```
SELECT dept_number, COUNT(*) AS NumberOfEmployees
FROM EMPLOYEE
WHERE emp_salary < 50000 AND dept_number IN
(SELECT dept_number FROM EMPLOYEE
GROUP BY dept_number
        HAVING COUNT(*)>2) #compares if number of employees are greater than two for each dept
GROUP BY dept_number;
```

OR

```
SELECT dept_number, COUNT(*) AS NumberOfEmployees
FROM EMPLOYEE
WHERE emp_salary < 50000
GROUP BY dept_number
HAVING COUNT(*)>2;
```

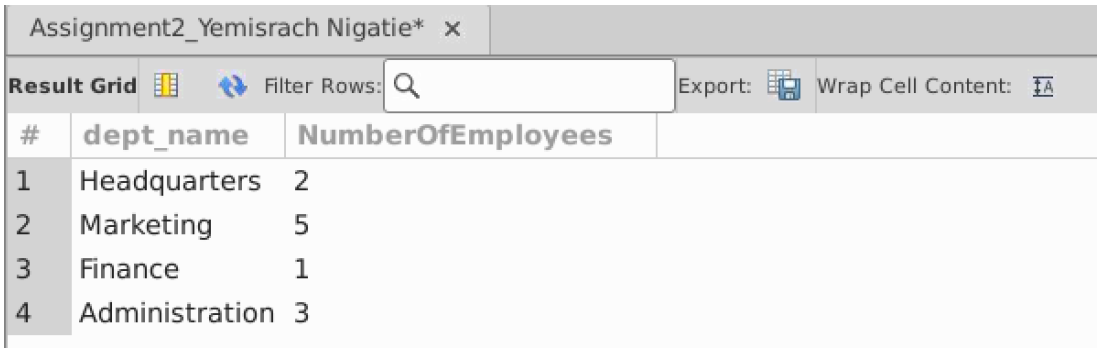

Assignment2_Yemisrach Nigatie ×

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

#	dept_number	NumberOfEmployees
1	2	5
2	4	3

Question 7: For each department whose average employee salary is less than $90,000, retrieve the department name and the number of employees working for that department.

```
SELECT D.dept_name, count(*) AS NumberOfEmployees
 FROM DEPARTMENT AS D, EMPLOYEE AS E
 WHERE D.dept_number = E.dept_number
 GROUP BY D.dept_name
 HAVING AVG(E.emp_salary)<90000;
```

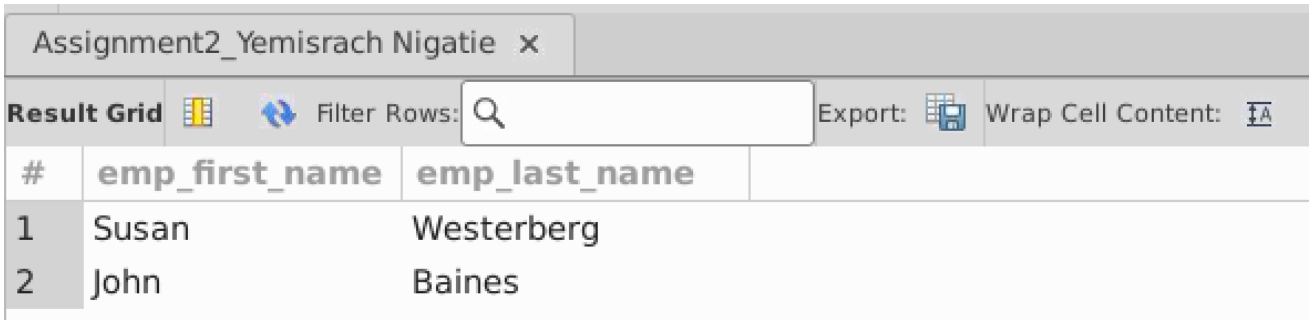

Assignment2_Yemisrach Nigatie* ×

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

#	dept_name	NumberOfEmployees
1	Headquarters	2
2	Marketing	5
3	Finance	1
4	Administration	3

Question 8: Retrieve the names of all employees who work in the department that has the employee with the highest salary among all employees.

```
SELECT emp_first_name, emp_last_name
FROM EMPLOYEE
WHERE dept_number IN
(SELECT dept_number
FROM EMPLOYEE
WHERE emp_salary IN
(SELECT MAX(emp_salary) FROM EMPLOYEE))
GROUP BY emp_first_name, emp_last_name;
```



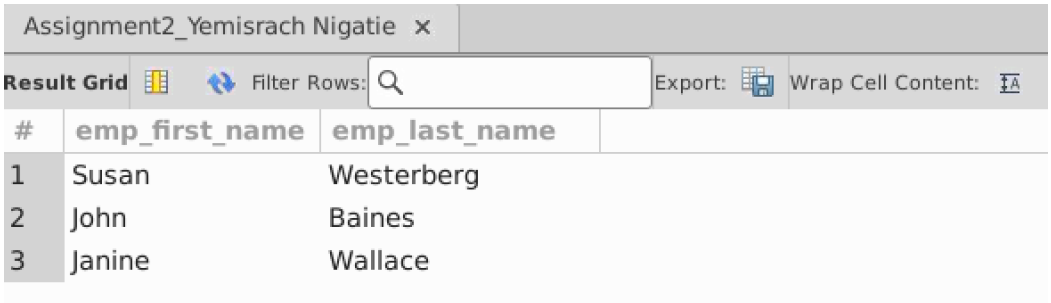
#	emp_first_name	emp_last_name
1	Susan	Westerberg
2	John	Baines

Question 9: Retrieve the names of employees who make at least $20,000 more than the employee who is paid the least in the company.

```
SELECT emp_first_name, emp_last_name
FROM EMPLOYEE
WHERE emp_salary IN
(Select emp_salary FROM EMPLOYEE
WHERE emp_salary >= (Select MIN(emp_salary) FROM EMPLOYEE)+20000)
GROUP BY emp_first_name, emp_last_name;
```

OR

```
SELECT emp_first_name, emp_last_name
FROM EMPLOYEE
WHERE emp_salary >= any
(Select min(emp_salary)+20000 FROM EMPLOYEE);
```

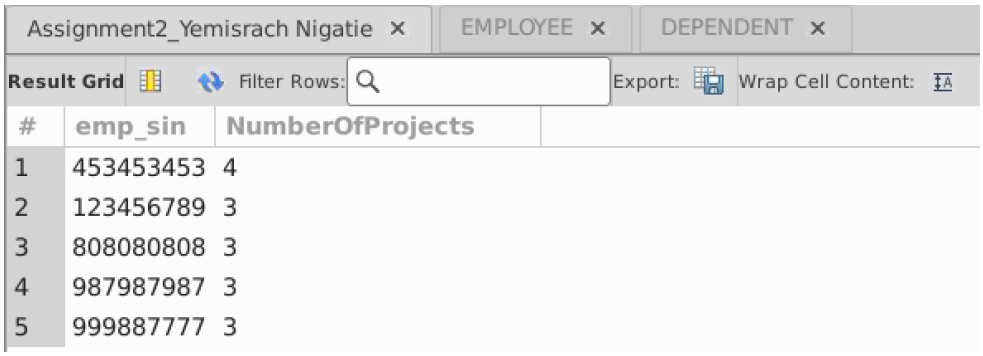


#	emp_first_name	emp_last_name
1	Susan	Westerberg
2	John	Baines
3	Janine	Wallace

Question 10: Find the number of employees who are working on more than 2 projects and show the result in descending order.

```
/*
This query lists the number of projects along with the emp_sin
*/

SELECT emp_sin, COUNT(*) AS NumberOfProjects
FROM WORKSON
GROUP BY emp_sin
HAVING COUNT(*)>2
ORDER BY NumberOfProjects desc;
```



Assignment2_Yemisrach Nigatie | EMPLOYEE | DEPENDENT

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

#	emp_sin	NumberOfProjects
1	453453453	4
2	123456789	3
3	808080808	3
4	987987987	3
5	999887777	3

#OR

```
/*
This query lists the number of employees along with the project number
*/

SELECT W.prj_number, count(*) AS NumberOfEmployees
FROM WORKSON AS W
group by W.prj_number
HAVING COUNT(*)>2
ORDER BY NumberOfEmployees desc;
```

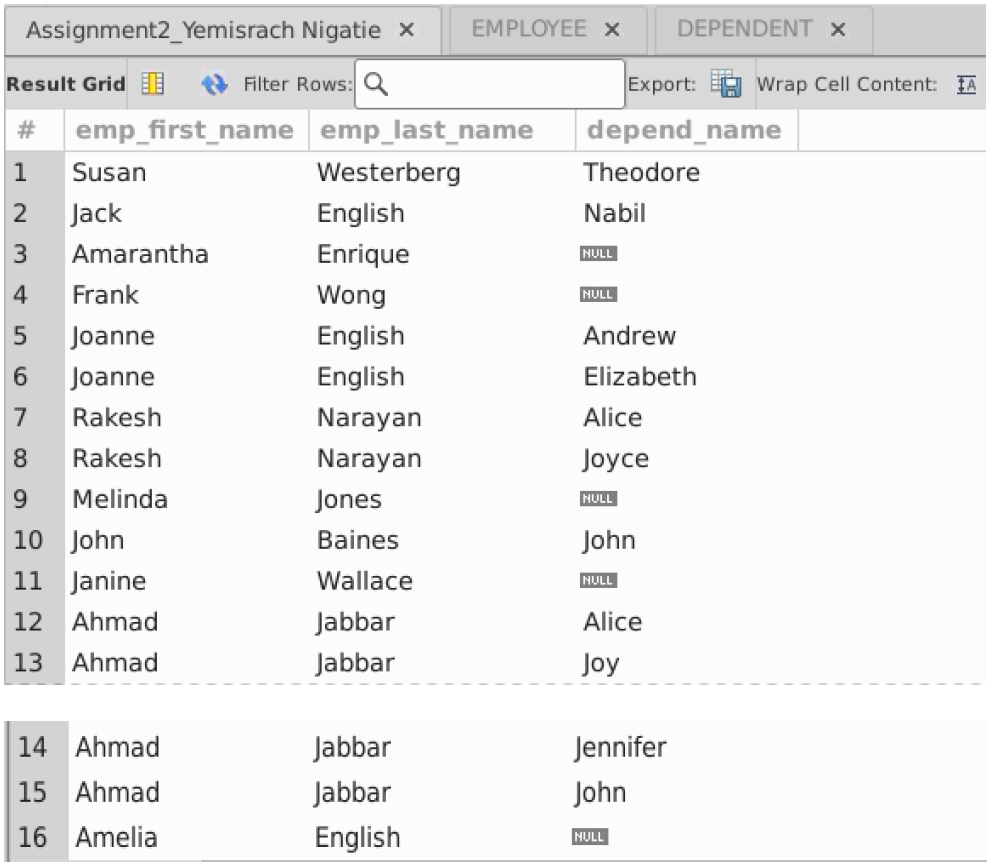
Assignment2_Yemisrach Nigatie*

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

#	prj_number	NumberOfEmployees
1	500	4
2	600	4
3	100	3
4	200	3
5	400	3

Question 11: Retrieve the employee names and their dependent names. Return employee names even if the dependent name is not present for the employee.

```
SELECT E.emp_first_name, E.emp_last_name, D.depend_name
FROM EMPLOYEE AS E
        LEFT OUTER JOIN
DEPENDENT AS D
ON E.emp_sin = D.emp_sin;
```



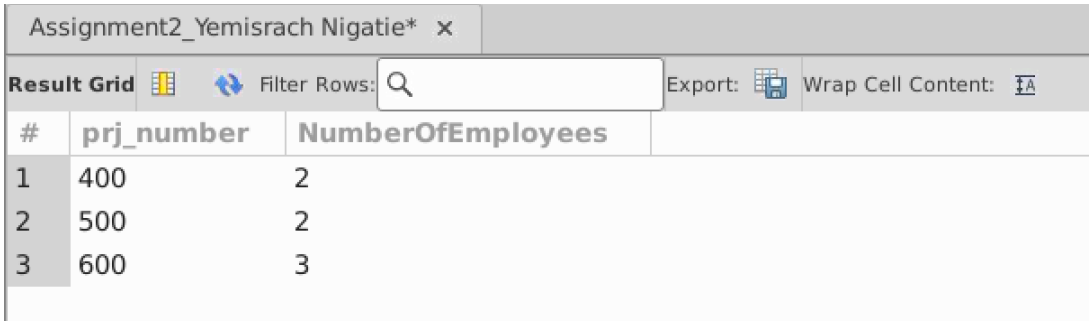
Assignment2_Yemisrach Nigatie × | EMPLOYEE × | DEPENDENT ×

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

#	emp_first_name	emp_last_name	depend_name
1	Susan	Westerberg	Theodore
2	Jack	English	Nabil
3	Amarantha	Enrique	NULL
4	Frank	Wong	NULL
5	Joanne	English	Andrew
6	Joanne	English	Elizabeth
7	Rakesh	Narayan	Alice
8	Rakesh	Narayan	Joyce
9	Melinda	Jones	NULL
10	John	Baines	John
11	Janine	Wallace	NULL
12	Ahmad	Jabbar	Alice
13	Ahmad	Jabbar	Joy
14	Ahmad	Jabbar	Jennifer
15	Ahmad	Jabbar	John
16	Amelia	English	NULL

Question 12: If more than one employee is working on the same project with the same number of hours, then display the number of these employees along with the project number.

```
SELECT W.prj_number, count(*) AS NumberOfEmployees
FROM WORKSON AS W
group by W.working_hours,W.prj_number
HAVING COUNT(*)>1;
```



#	prj_number	NumberOfEmployees
1	400	2
2	500	2
3	600	3