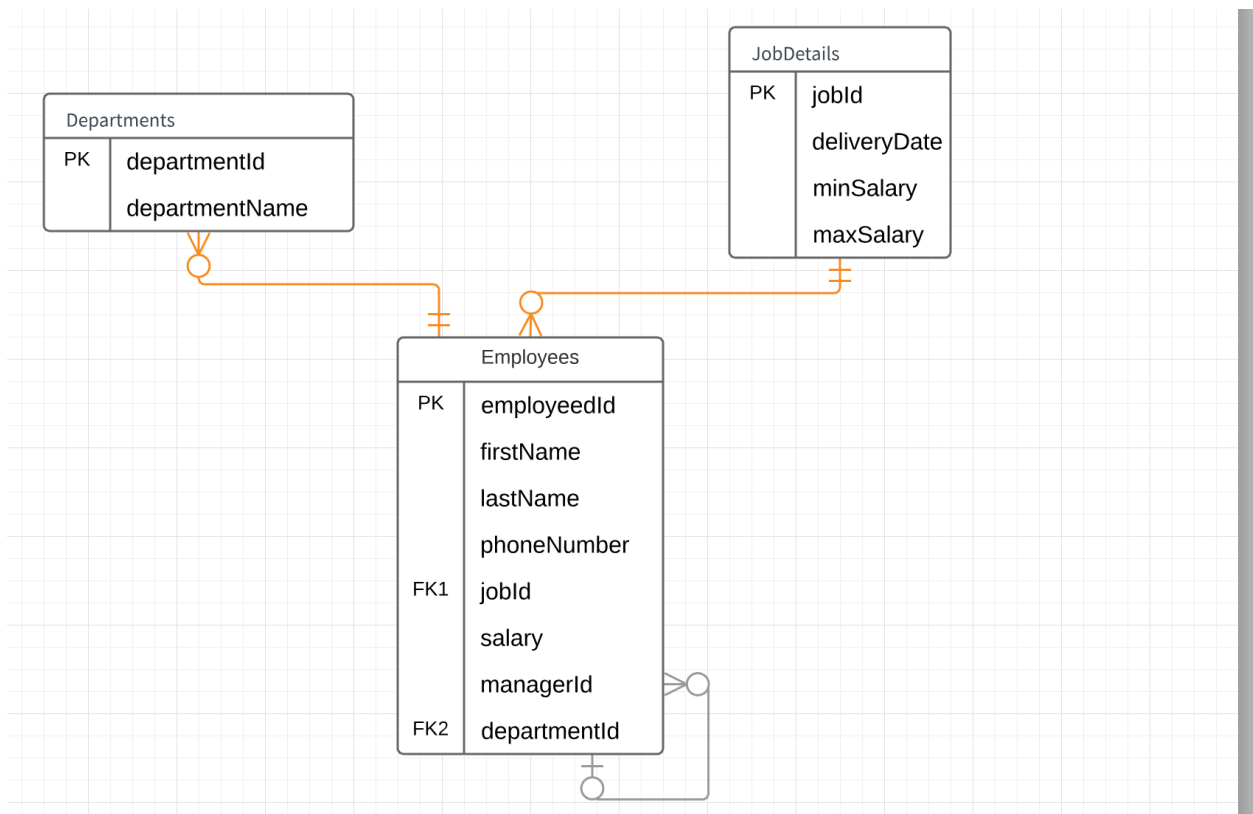ASSIGNMENT 2

Himanshu goyal

ER Diagram for employee, department and jobdetails:

SQL Scripts:

Department Table:

```
CREATE TABLE departments (
    departmentId INT (4),
    departmentName VARCHAR (30) NOT NULL,
    PRIMARY KEY(departmentId)
);
```

JobDetails Table:

```
CREATE TABLE jobDetails (
    jobId INT (4),
    jobTitle VARCHAR (35) NOT NULL,
    minSalary DECIMAL (8, 2),
    maxSalary DECIMAL (8, 2),
    PRIMARY KEY(jobId)
```

```
        );
```

Employee Table:

```
        CREATE TABLE employees (
            employeeId int(4) PRIMARY KEY,
            firstName VARCHAR(30) NOT NULL,
            lastName VARCHAR(30) NOT NULL,
            phoneNumber VARCHAR(10),
            jobId INT(4) NOT NULL,
            salary NUMERIC (8, 2) NOT NULL,
            managerId INT(4),
            departmentId INT(4),
            FOREIGN KEY (jobId) REFERENCES jobDetails (jobId),
            FOREIGN KEY (departmentId) REFERENCES departments (departmentId),
            FOREIGN KEY (managerId) REFERENCES employees (employeeId)
        );
```

Data Load:

```
INSERT INTO departments VALUES(1,'IT-Dev');
INSERT INTO departments VALUES(2,'IT-Test');
INSERT INTO departments VALUES(3,'IT-Support');
INSERT INTO departments VALUES(4,'HR')
```

```
INSERT into jobDetails VALUES('1001', 'Associate Dev Engineer-1',800,1000);
INSERT into jobDetails VALUES('1002', 'Associate Dev Engineer-2',1001,1200);
INSERT into jobDetails VALUES('1003', 'Senior Dev Engineer-1',1300,1500);
INSERT into jobDetails VALUES('1004', 'Senior Dev Engineer-2',1501,1800);
INSERT into jobDetails VALUES('2001', 'Tech Arch-1',2000,2500);
INSERT into jobDetails VALUES('2002', 'Tech Arch-2',2501,3000);
INSERT into jobDetails VALUES('3001', 'Test Engineer-1',700,850);
INSERT into jobDetails VALUES('3002', 'Test Engineer-2',900,1100);
INSERT into jobDetails VALUES('3003', 'Test Lead-1',1200,1400);
INSERT into jobDetails VALUES('3004', 'Test Lead-2',1300,1600);
INSERT into jobDetails VALUES('4001', 'Operations-1',1200,1400);
INSERT into jobDetails VALUES('4002', 'Operations-2',1300,1600);
INSERT into jobDetails VALUES('4101', 'HR',1300,1600);
```

INSERT into employees VALUES(5001,'Aman','Wadhwa','6124049xxx', 2002,3000,5001,1)
INSERT into employees VALUES(5002,'Jyoti','Singh','6124059xxx', 2002,2800,5001,1)
INSERT into employees VALUES(5003,'Rashmi','Agarwal','2124059xxx', 2001,2500,5002,1)
INSERT into employees VALUES(5004,'Ranjit','Singh','3124059xxx', 2001,2200,5002,1)
INSERT into employees VALUES(5005,'Manish','Singh','4124059xxx', 1004,1800,5003,1)
INSERT into employees VALUES(5006,'Girjesh','Singh','5124059xxx', 1003,1400,5003,1)
INSERT into employees VALUES(5007,'Himanshu','Singh','5224059xxx', 1002,1200,5003,1)
INSERT into employees VALUES(5008,'Ashu','Goyal','5224069xxx', 1001,1000,5003,1)
INSERT into employees VALUES(7001,'Asmi','Asmi','5224010xxx', 3002,1100,5001,2)
INSERT into employees VALUES(7002,'Radhika','Sen','8224010xxx', 3002,1000,5001,2)
INSERT into employees VALUES(7003,'Anjum','Apte','8224010xxx', 3001,850,7001,2)
INSERT into employees VALUES(8001,'Apoorva','Kamath','9224010xxx', 4002,1600,5001,3)
INSERT into employees VALUES(8002,'Pradeep','Gade','7824010xxx', 4001,1400,8001,3)
INSERT into employees VALUES(9001,'Ankita','Gupta','9924010xxx', 4101,1600,5001,4)

Table Dictionary:

1) **Department table:**

departments

Column	Type	Null	Default	Comments
departmentId *(Primary)*	int(4)	No	0	
departmentName	varchar(30)	No		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	departmentId	4	A	No	

2) **Employee table:**

employees

Column	Type	Null	Default	Comments
employeeId *(Primary)*	int(4)	No		
firstName	varchar(30)	No		
lastName	varchar(30)	No		
phoneNumber	varchar(10)	Yes	*NULL*	
jobId	int(4)	No		
salary	decimal(8,2)	No		
managerId	int(4)	Yes	*NULL*	
departmentId	int(4)	Yes	*NULL*	

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	employeeId	14	A	No	
jobId	BTREE	No	No	jobId	14	A	No	
departmentId	BTREE	No	No	departmentId	14	A	Yes	
managerId	BTREE	No	No	managerId	14	A	Yes	

3) **JobDetails table:**

jobDetails

Column	Type	Null	Default	Comments
jobId *(Primary)*	int(4)	No	0	
jobTitle	varchar(35)	No		
minSalary	decimal(8,2)	Yes	*NULL*	
maxSalary	decimal(8,2)	Yes	*NULL*	

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	jobId	13	A	No	

10 SQL queries:

1. **Find the top manager who does not report to anyone.**
   Select e.employeeId, e.firstName, e.lastName FROM employees e
   where e.managerId= e.employeeId

```
Select e.employeeId, e.firstName, e.lastName FROM employees e where e.managerId= e.employeeId
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP Code] [Refresh]

☐ Show all | Number of rows: 25 ▼   Filter rows: Search this table

+ Options

	employeeId	firstName	lastName
☐ 🖉 Edit ⤢ Copy ⊖ Delete	5001	Aman	Wadhwa

2. **Write a query to increase the salary of IT-Support employees by 5%. The output should be in dollars.**
   SELECT employees.firstName,employees.lastName,1.05*employees.salary
   FROM employees where employees.departmentId =3

```
SELECT employees.firstName,employees.lastName,1.05*employees.salary FROM employees where employees.departmentId =3
```

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☐ Show all | Number of rows: 25 ▼   Filter rows: Search this table

Sort by key: None ▼

+ Options

firstName	lastName	1.05*employees.salary
Apoorva	Kamath	1680.0000
Pradeep	Gade	1470.0000

3. Write a query to find the departments having maximum employees.
SELECT d.DepartmentName
FROM employees e
JOIN departments d
ON e.departmentId = d.departmentId
GROUP BY d.departmentName
ORDER BY COUNT(*) DESC
LIMIT 1

```
SELECT d.DepartmentName FROM employees e JOIN departments d ON e.departmentId = d.departmentId GROUP BY
d.departmentName ORDER BY COUNT(*) DESC LIMIT 1
```

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+ Options

DepartmentName
IT-Dev

4. Find the min and max salary in the organization.
SELECT MAX(salary), MIN(salary)
    FROM employees

```
SELECT MAX(salary), MIN(salary) FROM employees
```

+ Options

MAX(salary)	MIN(salary)
3000.00	850.00

5. Write a query to display employee full name and their job title.
Select concat_ws(' ', e.firstName, e.lastName) as FullName, j.jobTitle from employees e
JOIN
jobDetails j
where e.jobId = j.jobId

```
Select concat_ws(' ', e.firstName, e.lastName) as FullName, j.jobTitle from employees e JOIN jobDetails j where
e.jobId = j.jobId
```

FullName	jobTitle
Aman Wadhwa	Tech Arch-2
Jyoti Singh	Tech Arch-2
Rashmi Agarwal	Tech Arch-1
Ranjit Singh	Tech Arch-1
Manish Singh	Senior Dev Engineer-2
Girjesh Singh	Senior Dev Engineer-1
Himanshu Singh	Associate Dev Engineer-2
Ashu Goyal	Associate Dev Engineer-1
Asmi Asmi	Test Engineer-2
Radhika Sen	Test Engineer-2
Anjum Apte	Test Engineer-1
Apoorva Kamath	Operations-2
Pradeep Gade	Operations-1
Ankita Gupta	HR

6. Write a query to display the employee and their manager name.
select e.firstName as EmployeeName, m.firstName as ManagerName

from employees e
inner join employees m on e.managerId = m.employeeId

```
select e.firstName as EmployeeName, m.firstName as ManagerName from employees e inner join employees m on e.managerId
= m.employeeId
```

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☐ Show all | Number of rows: [25 ▼]   Filter rows: [Search this table]

EmployeeName	ManagerName
Aman	Aman
Jyoti	Aman
Rashmi	Jyoti
Ranjit	Jyoti
Manish	Rashmi
Girjesh	Rashmi
Himanshu	Rashmi
Ashu	Rashmi
Asmi	Aman
Radhika	Aman
Anjum	Asmi
Apoorva	Aman
Pradeep	Apoorva
Ankita	Aman

7. Write a query to return all the employee having salary less than 2000.
SELECT *
FROM employees e
WHERE e.salary <2000

```
SELECT * FROM employees e WHERE e.salary <2000
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP Code] [Refresh]

☐ Show all | Number of rows: 25 ▼ Filter rows: Search this table

			employeeId	firstName	lastName	phoneNumber	jobId	salary	managerId	departmentId
☐	✎ Edit ⬚ Copy ⊝ Delete		5005	Manish	Singh	4124059xxx	1004	1800.00	5003	1
☐	✎ Edit ⬚ Copy ⊝ Delete		5006	Girjesh	Singh	5124059xxx	1003	1400.00	5003	1
☐	✎ Edit ⬚ Copy ⊝ Delete		5007	Himanshu	Singh	5224059xxx	1002	1200.00	5003	1
☐	✎ Edit ⬚ Copy ⊝ Delete		5008	Ashu	Goyal	5224069xxx	1001	1000.00	5003	1
☐	✎ Edit ⬚ Copy ⊝ Delete		7001	Asmi	Asmi	5224010xxx	3002	1100.00	5001	2
☐	✎ Edit ⬚ Copy ⊝ Delete		7002	Radhika	Sen	8224010xxx	3002	1000.00	5001	2
☐	✎ Edit ⬚ Copy ⊝ Delete		7003	Anjum	Apte	8224010xxx	3001	850.00	7001	2
☐	✎ Edit ⬚ Copy ⊝ Delete		8001	Apoorva	Kamath	9224010xxx	4002	1600.00	5001	3
☐	✎ Edit ⬚ Copy ⊝ Delete		8002	Pradeep	Gade	7824010xxx	4001	1400.00	8001	3
☐	✎ Edit ⬚ Copy ⊝ Delete		9001	Ankita	Gupta	9924010xxx	4101	1600.00	5001	4

8. Write a query to find the employee belonging to IT-Test department.
SELECT *
FROM employees e
JOIN
departments d
ON e.departmentId = d.departmentId
where d.departmentName ='IT-Test'

```
SELECT * FROM employees e JOIN departments d ON e.departmentId = d.departmentId where d.departmentName ='IT-Test'
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP Code] [Refresh]

☐ Show all | Number of rows: 25 ▾ | Filter rows: Search this table

+ Options

employeeId	firstName	lastName	phoneNumber	jobId	salary	managerId	departmentId	departmentId	departmentName
7001	Asmi	Asmi	5224010xxx	3002	1100.00	5001	2	2	IT-Test
7002	Radhika	Sen	8224010xxx	3002	1000.00	5001	2	2	IT-Test
7003	Anjum	Apte	8224010xxx	3001	850.00	7001	2	2	IT-Test

9. **Write a query find out the department name having an average salary greater than or equal to all the average salaries of the other departments.**
Select * from departments where departmentId in (
SELECT departmentId
  FROM employees
  GROUP BY departmentId
  HAVING AVG(SALARY) >= ALL
    (SELECT AVG(SALARY)
      FROM employees
      GROUP BY departmentId))

```
Select * from departments where departmentId in ( SELECT departmentId FROM employees GROUP BY departmentId HAVING AVG(SALARY) >= ALL (SELECT
AVG(SALARY) FROM employees GROUP BY departmentId))
```

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☐ Show all | Number of rows: 25 ▾ | Filter rows: Search this table

+ Options

		departmentId	departmentName
☐	🖉 Edit 🗐 Copy ⊖ Delete	1	IT-Dev

10. **Write a query to find the employee having highest salary in their department.**
SELECT e.firstName, e.lastName, e.salary,e.departmentId,de.departmentName
  FROM employees e
  JOIN departments de
  ON e.departmentId = de.departmentId
    WHERE e.salary = (SELECT MAX(s.salary)
        FROM employees s
        WHERE e.departmentId = s.departmentId)

```
SELECT e.firstName, e.lastName, e.salary,e.departmentId,de.departmentName FROM employees e JOIN departments de ON e.departmentId =
de.departmentId WHERE e.salary = (SELECT MAX(s.salary) FROM employees s WHERE e.departmentId = s.departmentId)
```

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☐ Show all │ Number of rows: 25 ▼   Filter rows: Search this table

+ Options

firstName	lastName	salary	departmentId	departmentName
Aman	Wadhwa	3000.00	1	IT-Dev
Asmi	Asmi	1100.00	2	IT-Test
Apoorva	Kamath	1600.00	3	IT-Support
Ankita	Gupta	1600.00	4	HR

11. Write a view to return the employee data

Create View employeeData as
Select e.employeeId,
concat_ws(' ', e.firstName, e.lastName) as FullName,
e.phoneNumber,
e.salary,
e.managerId,
d.departmentName,
jd.jobTitle
from employees e
join departments d
on e.departmentId = d.departmentId
join jobDetails jd
on e.jobId = jd.jobId

```
SELECT * FROM employeeData
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP Code] [Refresh]

☐ Show all │ Number of rows: 25 ▼   Filter rows: Search this table

☐	✏ Edit ⁚͏ Copy ⊖ Delete	5001	Aman Wadhwa	6124049xxx	3000.00	5001	IT-Dev	Tech Arch-2
☐	✏ Edit ⁚͏ Copy ⊖ Delete	5002	Jyoti Singh	6124059xxx	2800.00	5001	IT-Dev	Tech Arch-2
☐	✏ Edit ⁚͏ Copy ⊖ Delete	5003	Rashmi Agarwal	2124059xxx	2500.00	5002	IT-Dev	Tech Arch-1
☐	✏ Edit ⁚͏ Copy ⊖ Delete	5004	Ranjit Singh	3124059xxx	2200.00	5002	IT-Dev	Tech Arch-1
☐	✏ Edit ⁚͏ Copy ⊖ Delete	5005	Manish Singh	4124059xxx	1800.00	5003	IT-Dev	Senior Dev Engineer-2
☐	✏ Edit ⁚͏ Copy ⊖ Delete	5006	Girjesh Singh	5124059xxx	1400.00	5003	IT-Dev	Senior Dev Engineer-1
☐	✏ Edit ⁚͏ Copy ⊖ Delete	5007	Himanshu Singh	5224059xxx	1200.00	5003	IT-Dev	Associate Dev Engineer-2
☐	✏ Edit ⁚͏ Copy ⊖ Delete	5008	Ashu Goyal	5224069xxx	1000.00	5003	IT-Dev	Associate Dev Engineer-1
☐	✏ Edit ⁚͏ Copy ⊖ Delete	7001	Asmi Asmi	5224010xxx	1100.00	5001	IT-Test	Test Engineer-2
☐	✏ Edit ⁚͏ Copy ⊖ Delete	7002	Radhika Sen	8224010xxx	1000.00	5001	IT-Test	Test Engineer-2
☐	✏ Edit ⁚͏ Copy ⊖ Delete	7003	Anjum Apte	8224010xxx	850.00	7001	IT-Test	Test Engineer-1
☐	✏ Edit ⁚͏ Copy ⊖ Delete	8001	Apoorva Kamath	9224010xxx	1600.00	5001	IT-Support	Operations-2
☐	✏ Edit ⁚͏ Copy ⊖ Delete	8002	Pradeep Gade	7824010xxx	1400.00	8001	IT-Support	Operations-1
☐	✏ Edit ⁚͏ Copy ⊖ Delete	9001	Ankita Gupta	9924010xxx	1600.00	5001	HR	HR

Function:

Write a function to update the employee salary by 10%. Function input should be employee id.

Function:

Servers
  DB PostgreSQL
  Recall PostgreSQL

phpPgAdmin: DB PostgreSQL?: hgoyal?:

Query Results

No rows found.

Total runtime: 1.685 ms

SQL executed.

Edit SQL

phpPgAdmin - SQL - Google Chrome

Secure | https://ella.ils.indiana.edu/adm/phppgadmin/sqledit.php?action=sql&server=db.slis.indiana.edu:54...

SQL?   Find

Server?: DB PostgreSQL (db.slis.indiana.edu:5433:allow) ▼   Database?: hgoyal ▼

Schema search path?: public

```
CREATE OR REPLACE FUNCTION UpdateEmployeeSalary(empId int)
RETURNS void AS $$
BEGIN
    update employees set salary=salary*1.10 where employeeId= empId;
END;
$$
LANGUAGE plpgsql;
```

☐ Paginate results

Execute   Reset

back to top

Microsoft Edge   back to top

Output

Servers
  DB PostgreSQL
  Recall PostgreSQL

phpPgAdmin: DB PostgreSQL?: hgoyal?:

Query Results

salary
1210.00

1 row(s)

Total runtime: 2.036 ms

SQL executed.

Edit SQL | **Download**

phpPgAdmin - SQL - Google Chrome

Secure | https://ella.ils.indiana.edu/adm/phppgadmin/sqledit.php?action=sql&server=db.slis.indiana.edu:54...

SQL?   Find

Server?: DB PostgreSQL (db.slis.indiana.edu:5433:allow) ▼   Database?: hgoyal ▼

Schema search path?: public

```
select UpdateEmployeeSalary(7001);
select salary from employees where employeeId = 7001
```

☐ Paginate results

Execute   Reset

back to top

back to top