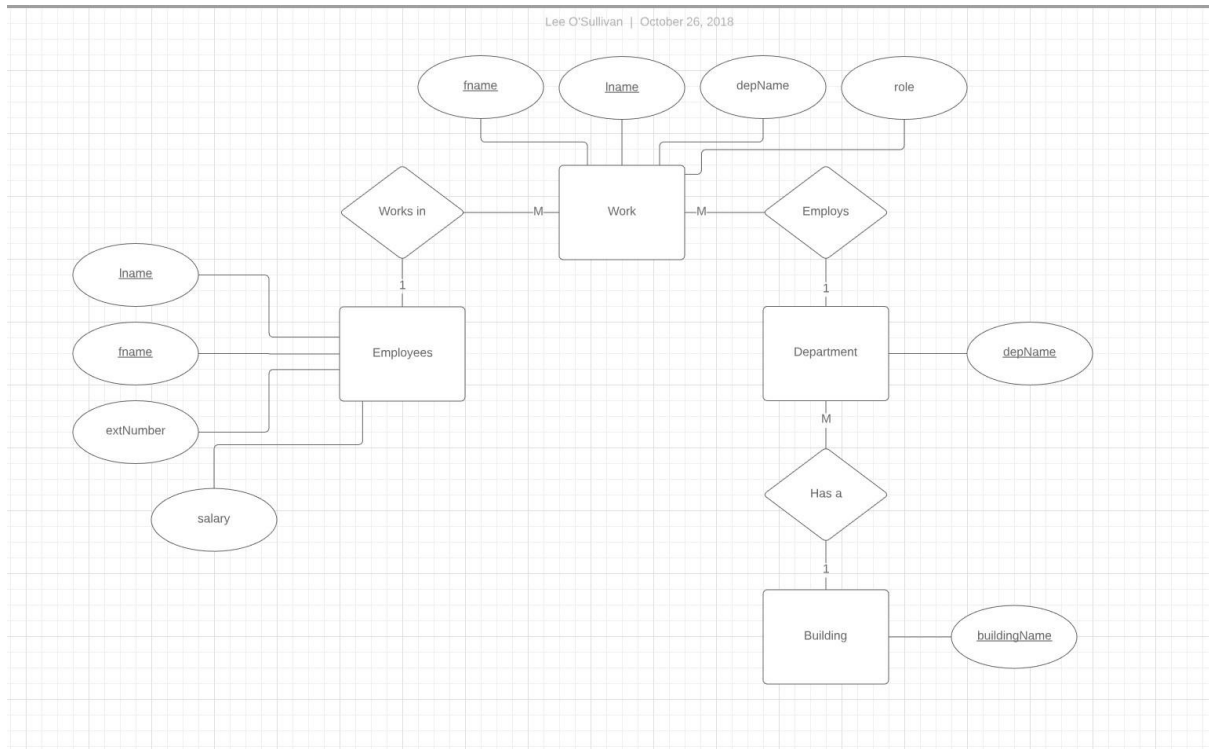


## Relational Databases – Practical 2

### Entity Relationship Diagram -



### Table Descriptions –

```
mysql> DESCRIBE Building;
```

Field	Type	Null	Key	Default	Extra
buildingName	varchar(30)	NO	PRI	NULL	

1 row in set (0.04 sec)

```
mysql> DESCRIBE Department;
```

Field	Type	Null	Key	Default	Extra
depName	varchar(30)	NO	PRI	NULL	
buildingName	varchar(30)	YES	MUL	NULL	

2 rows in set (0.00 sec)

```
mysql> DESCRIBE Employees;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| fname      | varchar(30)   | NO   | PRI | NULL    |       |
| lname      | varchar(30)   | NO   | PRI | NULL    |       |
| extNumber  | varchar(4)    | YES  |     | NULL    |       |
| salary     | int(11)       | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> DESCRIBE Work;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| fname      | varchar(30)   | NO   | PRI | NULL    |       |
| lname      | varchar(30)   | NO   | PRI | NULL    |       |
| depName    | varchar(30)   | NO   | PRI | NULL    |       |
| role       | varchar(30)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> SHOW Tables;
+-----+
| Tables_in_company |
+-----+
| building           |
| department         |
| employees          |
| work               |
+-----+
4 rows in set (0.09 sec)
```

Table Data –

```
mysql> SELECT * FROM Building;
```

buildingName
Main Building
Workshop

2 rows in set (0.00 sec)

```
mysql> SELECT * FROM Department;
```

depName	buildingName
CEO Department	Main Building
HR Department	Main Building
IT Department	Main Building
Engineering Department	Workshop

4 rows in set (0.00 sec)

```
mysql> SELECT * FROM Employees;
```

fname	lname	extNumber	salary
Alphonso	Peck	4455	50000
Caitlyn	Terrell	1234	40000
John	Doe	4164	45000
John	Smith	1234	35000
Lanford	Burnham	4454	60000
Montgomery	Burns	0666	100000
Traci	Simms	4455	50000

7 rows in set (0.03 sec)

```
mysql> SELECT * FROM Work;
```

fname	lname	depName	role
Alphonso	Peck	Engineering Department	Employee
Caitlyn	Terrell	IT Department	Manager
John	Doe	HR Department	Employee
John	Smith	IT Department	Employee
Lanford	Burnham	Engineering Department	Manager
Montgomery	Burns	CEO Department	Employee
Montgomery	Burns	HR Department	Manager
Traci	Simms	Engineering Department	Employee

8 rows in set (0.00 sec)

## SQL Queries – Query 1 -

```
mysql> SELECT fname, lname, role FROM Work  
-> WHERE role = 'manager';
```

fname	lname	role
Caitlyn	Terrell	Manager
Lanford	Burnham	Manager
Montgomery	Burns	Manager

3 rows in set (0.00 sec)

## Query 02

```
mysql> SELECT depName, SUM(salary)
-> FROM Employees e RIGHT JOIN Work w ON w.lname = e.lname
-> GROUP BY depName
-> ORDER BY SUM(salary) DESC;
+-----+-----+
| depName          | SUM(salary) |
+-----+-----+
| Engineering Department | 160000 |
| HR Department      | 145000 |
| CEO Department     | 100000 |
| IT Department      | 75000  |
+-----+-----+
4 rows in set (0.00 sec)
```

## Query 03

```
mysql> SELECT fname, lname, depName FROM Work
-> WHERE role = 'manager';
+-----+-----+-----+
| fname    | lname   | depName          |
+-----+-----+-----+
| Caitlyn  | Terrell | IT Department    |
| Lanford  | Burnham | Engineering Department |
| Montgomery | Burns  | HR Department    |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

## Query 04

```
mysql> SELECT depName FROM Department
-> WHERE buildingName = 'Main Building';
+-----+
| depName          |
+-----+
| CEO Department   |
| HR Department    |
| IT Department    |
+-----+
3 rows in set (0.00 sec)
```

## Query 05

```
mysql> SELECT e.extNumber
-> FROM Employees e LEFT JOIN Work w ON e.lname = w.lname
-> WHERE depName = 'Engineering Department';
+-----+
| extNumber |
+-----+
| 4455      |
| 4454      |
| 4455      |
+-----+
3 rows in set (0.00 sec)
```