MorvelHRM Management

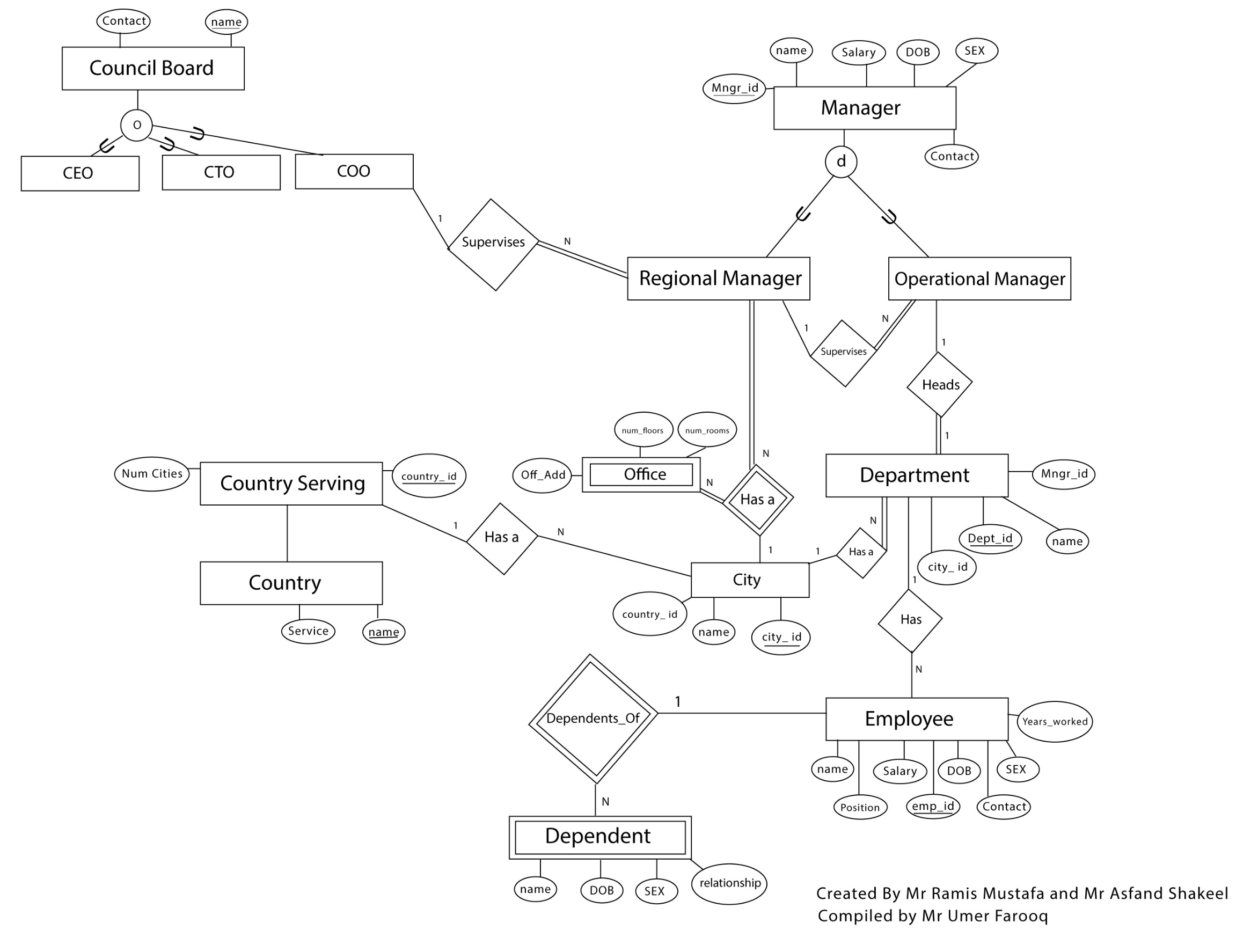
# The expanding HRM management platform



PROJECT REPORT

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# HRM

# 

# Original Relational Schema

COO (OBKey, Name)

COUNTRY\_SERVING (country\_ID, name, num\_cities)

CITY (city\_ID, city\_name, country\_ID)

DEPARTMENT (department\_ID, city\_ID, department\_name, manager\_ID)

OFFICE (city\_ID, manager\_ID, address, num\_rooms)

OPERATIONAL\_MANAGER (manager\_ID, manager\_name, dob, sex, salary, contact\_num)

REGIONAL\_MANAGER (manager\_ID, manager\_name, dob, sex, salary, city\_ID, contact\_num, office\_address, COOkey)

SUPERVISION (supervisor, supervisee)

EMPLOYEE (employee\_ID, employee\_name, sex, years\_worked, position, salary, contact\_num, department\_ID)

DEPENDENT (employee\_ID, dependant\_name, relationship)

# Functional Dependencies in the original schema

## COO:

OBKey 🡪 Name

## COUNTRY\_SERVING:

country\_ID 🡪 name, num\_cities

## CITY:

city\_ID 🡪 city\_name, country\_ID

# DEPARTMENT:

department\_ID 🡪 city\_ID, department\_name, manager\_ID

## OFFICE:

city\_ID, manager\_ID 🡪 address, num\_rooms

## OPERATIONAL\_MANAGER:

manager\_ID 🡪 manager\_name, dob, sex, salary, contact\_num

## OPERATIONAL\_MANAGER:

manager\_ID 🡪 manager\_name, dob, sex, salary, city\_ID, contact\_num, office\_address, COOKey)

## SUPERVISION:

supervisor 🡪 supervisee

## EMPLOYEE:

employee\_ID 🡪 employee\_name, sex, years\_worked, position, salary, contact\_num, department\_ID

position 🡪 salary (partial dependency to be cleared)

## DEPENDENT:

employee\_ID, dependent\_name 🡪 relationship

# Applying normalization to schema produces one relation to resolve the dependency in the employee relation.

EMPLOYEE (employee\_ID, employee\_name, sex, years\_worked, position,  
salary, contact\_num, department\_ID)

EMPLOYEE\_PAY (position, salary)

# The schema has achieved 3NF and is sufficiently normalized.

# CODE:

## Schema.sql:

drop schema if exists MorvelHRM;

create schema MorvelHRM;

create table MorvelHRM.COUNTRY\_SERVING(

country\_ID integer(3),

name varchar(30),

num\_cities integer(2),

primary key (country\_ID)

);

create table MorvelHRM.CITY(

city\_ID integer(3),

city\_name char(15),

country\_ID integer(3)

);

create table MorvelHRM.COO(

OBKey integer(3),

name varchar(25),

primary key(OBKey)

);

Create table MorvelHRM.DEPARTMENT(

department\_ID integer(3),

city\_ID integer(3),

department\_name varchar(25),

manager\_ID integer(3),

primary key (department\_ID)

);

create table MorvelHRM.OPERATIONAL\_MANAGER(

manager\_ID integer(3),

manager\_name varchar(25),

dob varchar(12),

sex char(1),

salary integer(7),

contact\_num integer(7),

department\_ID integer(3),

primary key(manager\_ID)

);

create table MorvelHRM.OFFICE(

city\_ID integer(3) unique,

manager\_ID integer(3) unique,

address varchar(50) unique,

num\_rooms integer(2)

);

create table MorvelHRM.REGIONAL\_MANAGER(

manager\_ID integer(3),

manager\_name varchar(25),

dob varchar(12),

sex char(1),

salary integer(7),

contact\_num integer(7),

city\_ID integer(3),

office\_address varchar(50),

COOKey integer(3),

primary key(manager\_ID)

);

create table MorvelHRM.EMPLOYEE(

employee\_ID integer(3),

employee\_name varchar(25),

sex char(1),

years\_worked integer(2),

position varchar(20),

contact\_num integer(7),

department\_ID integer(3)

);

create table MorvelHRM.EMPLOYEE\_PAY(

position varchar(20),

salary integer(7),

primary key (position)

);

create table MorvelHRM.DEPENDENT(

employee\_ID integer(3) unique,

dependent\_name varchar(25) unique,

relationship varchar(15)

);

create table MorvelHRM.SUPERVISION(

supervisor\_ID integer(3),

supervisee\_ID integer(3)

);

alter table MorvelHRM.EMPLOYEE

add constraint epk primary key(employee\_ID),

add constraint efk foreign key (department\_ID) references DEPARTMENT(department\_ID);

alter table MorvelHRM.DEPENDENT

add constraint dfk foreign key dfk (employee\_ID) references EMPLOYEE(employee\_ID) on update restrict,

add constraint dpk primary key (employee\_ID, dependent\_name);

alter table MorvelHRM.CITY

add constraint csfk foreign key (country\_ID) references COUNTRY\_SERVING(country\_ID),

add constraint cspk primary key (city\_ID);

alter table MorvelHRM.OFFICE

add constraint cityidfk foreign key(city\_id) references City(city\_id) on delete restrict on update cascade,

add constraint manageridfk foreign key(manager\_ID) references REGIONAL\_MANAGER(manager\_ID) on update cascade,

add constraint officepk primary key(city\_ID,manager\_ID);

alter table MorvelHRM.DEPARTMENT

add constraint managerfk foreign key(manager\_ID) references OPERATIONAL\_MANAGER(manager\_ID),

add constraint cityfk foreign key(city\_ID) references CITY(city\_ID);

alter table MorvelHRM.SUPERVISION

add constraint regfk foreign key(supervisor\_ID) references regional\_manager(manager\_ID),

add constraint operfk foreign key(supervisee\_ID) references operational\_manager(manager\_ID),

add constraint pkfk primary key(supervisor\_ID, supervisee\_ID);

alter table MorvelHRM.REGIONAL\_MANAGER

add constraint cityid\_fk foreign key(city\_id) references City(city\_id) on delete cascade on update cascade,

add constraint office\_fk foreign key(office\_address) references OFFICE(address) on update cascade,

add constraint COkey foreign key(COOKey) references COO(OBKey);

## Insert Data.sql:

set foreign\_key\_checks = 0;

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Regional\_Manager.csv'

into table MorvelHRM.REGIONAL\_MANAGER

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Operational\_Manager.csv'

into table MorvelHRM.OPERATIONAL\_MANAGER

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Supervision.csv'

into table MorvelHRM.SUPERVISION

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Employee.csv'

into table MorvelHRM.EMPLOYEE

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/City.csv'

into table MorvelHRM.CITY

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Country\_Serving.csv'

into table MorvelHRM.COUNTRY\_SERVING

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Department.csv'

into table MorvelHRM.DEPARTMENT

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Dependent.csv'

into table MorvelHRM.DEPENDENT

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Employee\_Pay.csv'

into table MorvelHRM.EMPLOYEE\_PAY

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/COO.csv'

into table MorvelHRM.COO

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Office.csv'

into table MorvelHRM.OFFICE

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

load data INFILE 'C:/Users/omen/Desktop/DBS Project ER/CSV/Country.csv'

into table MorvelHRM.COUNTRY

fields terminated by ','

optionally enclosed by '"'

lines terminated by '\n';

set foreign\_key\_checks = 1;

# Example Queries:

#Displays all operational managers assigned to departments

select manager\_name as Manager, department\_name as DName

from MorvelHRM.OPERATIONAL\_MANAGER INNER JOIN MorvelHRM.DEPARTMENT

using (department\_ID);

#Display operational managers indirectly operating under COOs

select COO.name as COO, operational\_manager.manager\_name as OpMgr

from (((MorvelHRM.regional\_manager inner join MorvelHRM.supervision

on regional\_manager.manager\_ID = Supervision.supervisor\_ID)

inner join MorvelHRM.operational\_manager

on operational\_manager.manager\_ID = supervision.supervisee\_ID)

inner join MorvelHRM.COO

on COO.OBKey = Regional\_Manager.COOKey)

#Regional managers from the same country

select manager\_name as Regional\_Mgr, country\_serving.name as Country

from (((MorvelHRM.Regional\_manager inner join MorvelHRM.city

using (city\_ID)) inner join MorvelHRM.country\_serving using (country\_ID)));