Assumption:

* Considering super\_id in Employee table can be null as the employee may not have the superior as the employee inputted is the superior.
* Considering hours in Works\_on as null as employee may not have started working on the project yet
* Considering Salary in salary with default value as 0 as the employee may not have been for a year in the company and thus no yearly amount of income yet
* Considering salary doesn’t go above 999,999.99

(the foreign key, primary key and constraints can be seen for each table by seeing the code)

//add mgr\_id to department later using alter as otherwise table cant be created as department needs employee to reference the foreign key but employee table needs department to reference the foreign key dept\_id in employee table!

New table added to diagram:

|  |
| --- |
| Role table |
| Role (Technician or Manager)  Salary\_factor (0 to 100)  Comment (text to describe the role) |

Commands:

CREATE database Company;

Use Company;

Create table Department

(dept\_id char(7) not null,

dept\_name char(20) not null,

mgr\_start\_date date not null,

PRIMARY KEY(dept\_id)

);

Create table Employee

(emp\_id char(7) not null,

emp\_fname char(10) not null,

emp\_lname char(10) not null,

emp\_bdate date not null,

emp\_address char(30) not null,

gender char not null

CHECK (gender IN ('M','F', 'U')),

dept\_id char(7) not null,

super\_id char(7),

PRIMARY KEY(emp\_id, dept\_id, super\_id),

FOREIGN KEY(dept\_id) REFERENCES Department(dept\_id),

FOREIGN KEY(super\_id) REFERENCES Employee(emp\_id)

);

alter table Department

ADD COLUMN mgr\_id char(7) not null;

alter table Department

ADD CONSTRAINT mgr\_id FOREIGN KEY(mgr\_id)

references Employee(emp\_id);

Create table Project

(proj\_id char(7) not null,

proj\_name char(20) not null,

proj\_loc char(20) not null,

dept\_id char(7) not null,

PRIMARY KEY(proj\_id, dept\_id),

FOREIGN KEY(dept\_id) REFERENCES Department(dept\_id)

);

Create table Salary

(emp\_id char(7) not null,

salary decimal(8,2) not null DEFAULT 0.00,

start\_date date not null,

PRIMARY KEY(emp\_id),

FOREIGN KEY(emp\_id) REFERENCES Employee(emp\_id)

);

//not giving the comment as null as pdf stated that there has to be a comment attribute where the role can be described

Create table Role

(role char not null

Check(role IN ('Technician','Manager')),

salary\_factor int not null

Check(salary\_factor >= 0 AND salary\_factor <= 100),

comment tinytext not null,

PRIMARY KEY(role)

);

Create table Works\_on

(emp\_id char(7) not null,

proj\_id char(7) not null,

role char not null

Check(role IN ('Technician','Manager')),

hours int(4),

PRIMARY KEY(emp\_id, proj\_id, role),

FOREIGN KEY(proj\_id) REFERENCES Project(proj\_id),

FOREIGN KEY(emp\_id) REFERENCES Employee(emp\_id),

FOREIGN KEY(role) REFERENCES Role(role)

);

Screenshots: (see next page)





