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**CSC 361: Database**

**Fall 2021/2022**

**Charma**

**Database project phase 3 report**

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**Date: 16/12/2021**

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## Updated ER:

Diagram, schematic

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## Updated Mapped Relational Database Schema:

1. Foreign key approach:

In this approach, given R relationship that is 1:N, the relation on the N side will take the primary key of the relation on 1 side as a foreign key. Also, it will take any relationship attributes with it (relationship attributes will be added to the table).

2. Cross-reference or relationship relation approach:

In this approach, a relation will be created from the relationship that connects between two other relations and it will take the primary keys of both relations with the relationship attributes.

In our database there is only single one-to-many relationship that is called ‘Works\_for’ between Employee and Department. We used the foreign key approach to save space (by creating a new table, there will be unnecessary redundancy due to creating a whole new column for ECID again, so, it will waste space).

## Refined/Normalized Database schema:

All our relations are in 3rd normal form except for the Employee relation. Employee relation fails the 3rd normal form since position 🡪 salary.

Employee normalization:

Table

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Timeline

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In these tables, the email attributes were candidate keys, as they are unique and not null, unique, because no two people have the same personal email, and not null because the organization needs a certain way to be able to contact the people and emails are more reliable than phones, for they can reach anyone anywhere at any time. However, having the CIVIL IDs for a primary key is more efficient and simpler as a civil ID is the main identifier of a person.

## Mapped Relational Database Schema After Normalization:

Diagram

Description automatically generated with low confidence

## SQL code:

CREATE DATABASE Charma;

USE Charma;

CREATE table Project

(

Project\_license varchar(8) primary key,

Pname varchar(50) not null,

Pdescription varchar(150),

Budget INT,

Pcategory varchar(15) CHECK (Pcategory IN ('Medical', 'Feeding', 'Water',

'Building', 'Educational')),

Plocation varchar(50),

Start\_date date,

End\_date date

);

CREATE table Donator

(

DCID char(12) primary key,

Dname varchar(15),

Demail varchar(30) unique not null,

Dphone char(8)

);

CREATE table Donates\_to

(

Plicense varchar(8),

DCID char(12),

Payment\_date date,

Amount\_paid INT,

primary key(Plicense,DCID),

foreign key (Plicense) references Project(Project\_license),

foreign key (DCID) references Donator(DCID)

);

#minus = 0 mafi

CREATE table Volunteer

(

VCID char(12) primary key,

Vname varchar(15),

Vemail varchar(30) unique not null,

Vphone char(8) unique,

VDOB date,

Vgender varchar(6) CHECK (Vgender IN ('Female', 'Male')),

Vaddress varchar(60),

Field\_of\_expertise varchar(20) CHECK (Field\_of\_expertise IN ('Medical', 'Public Service',

'Construction', 'Education'))

);

#16 yo

CREATE table Volunteers\_in

(

Plicense varchar(8),

VCID char(12),

Vhours INT,

primary key(Plicense,VCID),

foreign key (Plicense) references Project(Project\_license),

foreign key (VCID) references Volunteer(VCID)

);

CREATE table Beneficiary

(

BCID char(12) primary key,

Bname varchar(15),

Bphone char(8) unique not null,

Baddress varchar(60),

Bgender varchar(6) CHECK (Bgender IN ('Female', 'Male')),

BDOB date,

Family\_members\_No INT,

Medical\_record varchar(100)

);

CREATE table Benefits

(

Plicense varchar(8),

BCID char(12),

Date\_benefited date,

primary key(Plicense,BCID),

foreign key (Plicense) references Project(Project\_license),

foreign key (BCID) references Beneficiary(BCID)

);

CREATE table Department

(

Dnumber INT primary key,

DeptName varchar(30),

Dlocation varchar(30)

);

CREATE table Employee

(

ECID char(12) primary key,

Ename varchar(15),

Eemail varchar(30) unique not null,

Ephone char(8) not null unique,

Epassword varchar(20) not null,

Egender varchar(6) CHECK (Egender IN ('Female', 'Male')),

EDOB date,

Eaddress varchar(60),

Position\_ varchar(30),

Dnum INT,

foreign key (Dnum) references Department(Dnumber),

foreign key (Position\_) references Positions(Position\_)

);

CREATE table Positions

(

Position\_ varchar(30) primary key CHECK (Position\_ IN('Director', 'Supervisor', 'Coordinator', 'Accountant',

'Worker', 'HR', 'Medical staff', 'Marketing', 'Volunteer Coordinator', 'Fundraising Manager')),

Salary int

);

CREATE table Works\_on

(

Plicense varchar(8),

ECID char(12),

primary key(Plicense,ECID),

foreign key (Plicense) references Project(Project\_license),

foreign key (ECID) references Employee(ECID)

);

insert into Project values ('P9185425' , 'well in africa' , 'digging water well in poor countries' , 10000 , 'Water' , 'Africa' , '2021-06-23' , '2021-08-15');

insert into Project values ('P8319654' , 'medicine for palastine' , 'giving away essential medicine for the hospitals in Palastine that is in war' , 25000 , 'Medical' , 'Palestine' , '2021-05-12' , '2021-07-15');

insert into Project values ('P5459284' , 'food donationKW' , 'providing food for families in need during the first days of Ramadan' , 3000 , 'Feeding' , 'Kuwait' , '2019-04-01' , '2019-04-05');

insert into Project values ('P4962557' , 'water distrubtionKW' , 'giving away water bottles for workers' , 500 , 'Water' , 'Kuwait' , '2018-06-11' , '2018-08-25');

insert into Project values ('P3572447' , 'school in somalia' , 'building a school in Somalia' , 51500 , 'Building' , 'East Africa' , '2016-07-13' , '2017-09-23');

insert into Project values ('P3769365' , 'diabitics medicine\_EYGPT' , 'free insulin for those who suffer from diabetes' , 20000 , 'Medical' , 'Egypt' , '2017-02-20' , '2017-03-05');

insert into Project values ('P7998265' , 'groceriesKW' , 'providing food for those who cannot buy in kuwait' , 5000 , 'Feeding' , 'Kuwait' , '2020-12-01' , '2021-01-05');

insert into Project values ('P2557302', 'water cleaning africa' , 'installing machines that clean dirty water' , 65000 , 'Water' , 'Africa' , '2016-03-01' , '2016-06-15');

insert into Project values ('P1692361' , 'medicine india' , 'providing medicine for hospitals in poor countries as india' , 30000 , 'Medical' , 'India' , '2015-01-11' , '2015-02-05');

insert into Project values ('P1564830' , 'food donation syria' , 'providing food for families in need during war in syria' , 9500 , 'Feeding' , 'Syria' , '2014-05-11' , '2014-07-15');

insert into Project values ('P9564830' , 'tech education africa' , 'truck of computers in africa to teach kids techno' , 129000 , 'Educational' , 'Africa' , '2021-09-12' , '2022-04-15');

insert into Project values ('P9892772' , 'erasing illitracyKW' , 'teaching people how to write and read in kuwait' , 2000 , 'Educational' , 'Kuwait' , '2021-11-23' , '2021-11-30');

insert into Donator values ('333222349761', 'Mohammahd', 'moh2335@gmail.com','52113098');

insert into Donator values ('882619939865', 'Sarah', 'ssforyum@yahoo.com','59876609');

insert into Donator values ('299039843322', 'Nada', 'nadnad433@gmail.com','67993403');

insert into Donator values ('122348883444', 'Bandar', 'bandaryolo@hotmail.com','99870334');

insert into Donator values ('301022400856', 'Nour', 'nourahmad224@gmail.com','51705903');

insert into Donator values ('328993829274', 'Nasser', 'nosnos33@gmail.com','68990982');

insert into Donator values ('579273916628', 'Sara', 'sarableu@hotmail.com','67237920');

insert into Donator values ('772936636266', 'Nolan', 'nolanjjss@gmail.com','99864182');

insert into Donator values ('388228939920', 'Ann', 'annlunacat@yahoo.com','56998629');

insert into Donator values ('287889203993', 'Malak', 'Malak666@gmail.com','98227308');

insert into Volunteer values ('292883990923', 'Adora', 'adorashera@gmail.com', '98227368', '1998-06-12', 'Female', 'West st.102', 'Public Service');

insert into Volunteer values ('838927739347', 'Catra', 'Catrahatesadora@yahoo.com', '57882973', '1999-05-05', 'Female', 'East st.102', 'Construction');

insert into Volunteer values ('553829927392', 'Glimmer', 'glimmer7729@gmail.com', '99283722', '1996-09-24', 'Female', 'long cost', 'Medical');

insert into Volunteer values ('829937288273', 'Bow', 'bowlotsolo@gmail.com', '56692738', '1996-06-01', 'Male', 'long cost', 'Medical');

insert into Volunteer values ('628827192792', 'Luz', 'luznoceda@hotmail.com', '98334029', '2001-02-24', 'Female', 'owl st. 89', 'Public Service');

insert into Volunteer values ('992048203819', 'Amity', 'amityblight@gmail.com', '92848209', '2001-04-01', 'Female', 'owl st. 55', 'Education');

insert into Volunteer values ('839910384928', 'Daria', 'dariamorgendorffer@yahoo.com', '67882928', '1998-01-09', 'Female', 'lawndale', 'Education');

insert into Volunteer values ('102888428839', 'Trent', 'trentlane@gmail.com', '66282933', '1989-08-22', 'Male', 'lawndale st.99', 'Construction');

insert into Volunteer values ('492899482939', 'Sam', 'samgardner@hotmail.com', '58829738', '1995-07-07', 'Male', 'seasaw st.109', 'Public Service');

insert into Volunteer values ('399482927755', 'Casey', 'caseygardner@gmail.com', '98366386', '1998-11-11', 'Female', 'linins st. 29', 'Medical');

insert into Beneficiary values ('126348964302' , 'Sara' , '66392284' , 'South Africa' , 'Female' , '1984-09-12' , 4, NULL);

insert into Beneficiary values ('347283940123' , 'Naved' , '97482935' , 'Middle East Palestine' , 'Male' , '1976-10-1' , 6 , 'Pressure and Diabetes');

insert into Beneficiary values ('937453627123' , 'Ahmad' , '69873425' , 'Kuwait' , 'Male' , '1994-08-10' , 10, NULL);

insert into Beneficiary values ('201934251627' , 'Amer' , '55492284' , 'Lebanon' , 'Male' , '1980-09-16' , 15, NULL);

insert into Beneficiary values ('745392536472' , 'Hiba' , '98453627' , 'Syria' , 'Female' , '1979-12-01' , 4, NULL);

insert into Beneficiary values ('123425678192' , 'Sally' , '57463829' , 'Kuwait' , 'Female' , '1991-01-22' , 16 , 'Diabetes');

insert into Beneficiary values ('564738291837' , 'Omar' , '99237463' , 'Egypt' , 'Male' , '1974-05-20' , 7 , 'Pressure');

insert into Beneficiary values ('847362172823' , 'Samar' , '54637282' , 'Iraq' , 'Female' , '1990-03-19' ,NULL, NULL);

insert into Beneficiary values ('564738291023' , 'Mohammed' , '56992284' , 'Eygpt' , 'Male' , '1995-11-12' , 11 , 'Diabetes');

insert into Beneficiary values ('536473829104' , 'Osama' , '95364732' , 'Saudi Arabia' , 'Male' , '1984-09-12' , 10, NULL);

insert into Department values (1, 'General Management', 'Salmiya');

insert into Department values (2, 'Accounting', 'Jabriya');

insert into Department values (3, 'Project Management', 'Mishrif');

insert into Department values (4, 'PR', 'Salmiya');

insert into Department values (5, 'volunteers', 'Hawally');

insert into Department values (6, 'Medical Staff', 'Mubarak Alkabeer');

insert into Positions values ('Director', 10000);

insert into Positions values ('Supervisor', 8000);

insert into Positions values ('Coordinator', 5000);

insert into Positions values ('Accountant', 2000);

insert into Positions values ('Worker', 1000);

insert into Positions values ('HR', 1200);

insert into Positions values ('Medical Staff', 7000);

insert into Positions values ('Marketing', 1500);

insert into Positions values ('Volunteer Coordinator', 6000);

insert into Positions values ('Fundraising Manager', 4000);

insert into Employee values ('230987368892', 'sally', 'sallyfrankly@gmail.com', '99836277','salsal93Sm', 'Female', '2000-09-22', 'Jabriya 3b', 'Worker',1);

insert into Employee values ('728839204772', 'salem', 'ssslamenm3@gmail.com', '67299273','Salem2019%', 'Male', '1996-04-07', 'Salmiya v2', 'Worker',3);

insert into Employee values ('663829372937', 'lamma', 'lammahnour@gmail.com', '98362092','Lammablue3', 'Female', '1999-12-12', 'Salem Mubarak b.5', 'Worker',4);

insert into Employee values ('389283902930', 'Ben', 'Benlaskotiv@gmail.com', '51200273','BenBak41', 'Male', '1989-09-15', 'Hateen', 'Worker',5);

insert into Employee values ('188294729372', 'Ghada', 'Ghadaraee@hotmail.com', '90773645','ghadaGG55', 'Female', '1977-04-01', 'Jabriya', 'Director',1);

insert into Employee values ('773927233920', 'Bojack', 'Bojackhorseman@yahoo.com', '67992038','BojackPain8', 'Male', '1982-09-15', 'Salmiya long st.', 'Marketing',4);

insert into Employee values ('299328297488', 'Coraline', 'Coralinetim@gmail.com', '52883917','coributton202', 'Female', '2001-06-06', 'beacholio st.102', 'HR',1);

insert into Employee values ('629926301634', 'Jake', 'Jakethedog@hotmail.com', '97008293','bakingPancakes2', 'Male', '1980-12-25', 'treehouse B23', 'Supervisor',3);

insert into Employee values ('200397193782', 'Finn', 'finnthehuman@hotmail.com', '99882203','Yobro6969', 'Male', '1999-02-02', 'treehouse B44', 'Supervisor',5);

insert into Employee values ('890273927739', 'Bonnie', 'PrincessBubblegum@gmail.com', '51698023','marcythequeen%5', 'Female', '1995-08-18', 'candykingdom st.2', 'Supervisor',6);

insert into Employee values ('626606881634', 'Jake', 'Jakeiscool@hotmail.com', '93674829','bakingPancakes0', 'Male', '1980-02-25', 'treehouse B29', 'Coordinator',3);

insert into Employee values ('822738008283', 'Marceline', 'Macreyvampire@hotmail.com', '51483976','MyFries992', 'Female', '1996-06-06', 'nightosphere', 'Accountant',2);

insert into Employee values ('209399203820', 'Ben', 'bonioben2@yahoo.com', '93224592','benajole322', 'Male', '1988-07-19', 'northen st.', 'Accountant',2);

insert into Employee values ('233841048399', 'Catlyin', 'enforcerrule@hotmail.com', '67199287','hexatechCat9', 'Female', '1992-05-20', 'piltvort', 'Medical staff',6);

insert into Employee values ('293884028489', 'joan', 'joanjett@yahoo.com', '92027392','therunawaysRR', 'Female', '1975-09-19', 'longlike st.', 'Medical staff',6);

insert into Employee values ('828982927338', 'Finn', 'thehumanff@gmail.com', '58292382','ffiiinn993', 'Male', '1977-07-07', 'thursday valley b.9', 'Volunteer Coordinator',5);

insert into Employee values ('992039203022', 'Mitski', 'mitski22p@hotmail.com', '98225387','lastwordsstar2', 'Female', '1990-09-27', 'tokyo st.', 'Fundraising Manager',3);

insert into Donates\_to values ('P9185425', '333222349761', '2021-06-27', 100);

insert into Donates\_to values ('P8319654', '882619939865', '2021-06-03', 250);

insert into Donates\_to values ('P3769365', '299039843322', '2017-07-30', 50);

insert into Donates\_to values ('P9892772', '287889203993', '2021-11-24', 170);

insert into Donates\_to values ('P7998265', '882619939865', '2020-12-15', 50);

insert into Donates\_to values ('P9892772', '772936636266', '2021-11-23', 290);

insert into Volunteers\_in values ('P8319654','553829927392',6);

insert into Volunteers\_in values ('P3769365','553829927392',3);

insert into Volunteers\_in values ('P9564830','992048203819',8);

insert into Volunteers\_in values ('P3572447','102888428839',23);

insert into Volunteers\_in values ('P5459284','292883990923',20);

insert into Benefits values ('P3769365','564738291023','2017-02-25');

insert into Benefits values ('P7998265','937453627123','2021-01-01');

insert into Benefits values ('P1564830','745392536472','2014-06-11');

insert into Benefits values ('P7998265','123425678192','2021-01-01');

insert into Works\_on values ('P5459284','663829372937'); #food

insert into Works\_on values ('P5459284','629926301634'); #food

insert into Works\_on values ('P9564830','822738008283'); #tech

insert into Works\_on values ('P1692361','233841048399'); #medicine

insert into Works\_on values ('P3572447','728839204772'); #construction

insert into Works\_on values ('P3769365','629926301634'); #medicine

insert into Works\_on values ('P5459284','828982927338');

Select \* From Project;

Select \* From Donator;

Select \* From Beneficiary;

Select \* From Department;

Select \* From Donates\_to;

Select \* From Positions;

Select \* From Employee;

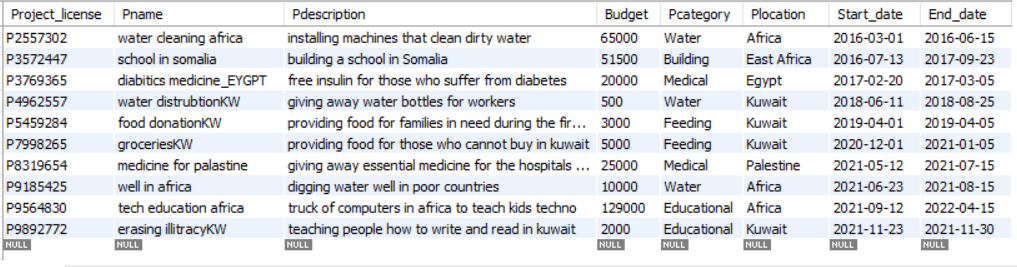
Select \* From Works\_on;

Select \* From Benefits;

Select \* From Volunteer;

Select \* From Volunteers\_in;

## Tables:



Graphical user interface, application

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Graphical user interface, application

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Graphical user interface, text, application

Description automatically generated

Graphical user interface, table

Description automatically generated

Graphical user interface, application

Description automatically generated

Graphical user interface, text, application, chat or text message

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Graphical user interface, text, application

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Graphical user interface, application

Description automatically generated

Graphical user interface, text, application, table

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