

Database project

Umrah

campaign

Section Number: 2

Group Number: 4

Instructor: Dr.Asmaa Alayed

Group Students: 5

Ghada Al-Fadhli 442005008

Aldanh Al-Matrafy 442001236

Athary Al-Sowat 442000884

Raneem Al-Jabri 442001017

Raghad Al-Zahrani 442017353

Manar Al-Matrafi 442006524

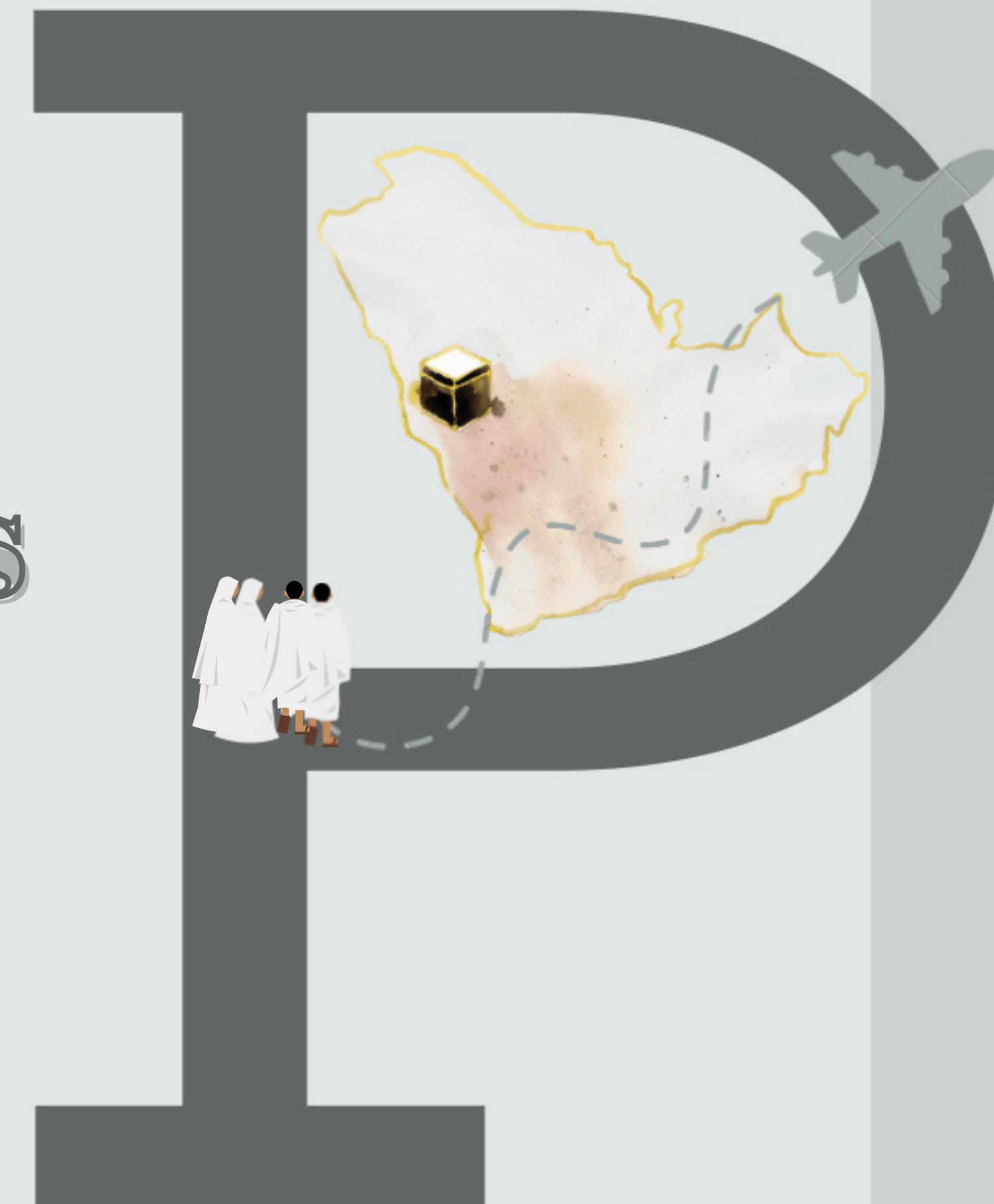
Ruba Al-Nemary 442003042



Phase 1

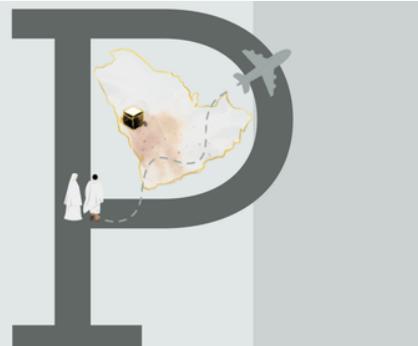
Business

Rule



Group tasks report

Task	<i>Ghadah Al-Fadhli</i>	<i>Aldanh Al-Matrafy</i>	<i>Athary Al-Sowat</i>	<i>Raneem Al-jabri</i>	<i>Raghad Al-Zahrani</i>	<i>Manar Al-Matrafi</i>	<i>Ruba Al-nemary</i>
Business Rule	✓	✓			✓		
UML			✓				✓
Chen's notation				✓		✓	



Description

Our project revolves around the Umrah campaign system for foreign pilgrims, which allows them to perform their Umrah by choosing the appropriate category for them in order to perform their Umrah with ease, spirituality **The database of the campaign will store pilgrims information (followers , their health status , visa information), available category, our employee and volunteer , companies**



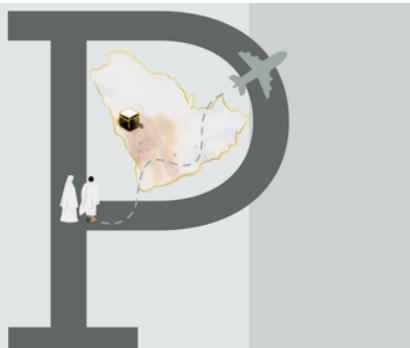
Business Rule

PILGRIM :

- It's depend on the **PILGRIM**, which has a **name, sex, date of birth** (so the age will be more accurately), **age, nationality, country of arrival, email** (pilgrim may have at most two emails for communication), **visa information** (which have the visa's number and country that issued from) **passport number, date of arrival, and date of departure** (because the category determines the number of days If he is from category number **1**, he will stay for **9** days, while category number **2** will stay for **6** days)
-), **number of individuals** (Each pilgrim must have only one follower). Pilgrim should has visa (when the Pilgrim has a follower all of them will have the same visa). Also, each Pilgrim selects a category.

FOLLOWER :

- for each **FOLLOWER**, has a personal information including **name, sex, date of birth** (to calculate the age to be more accurate), and **age**. there are no followers without a Pilgrim.



Business Rule

VISA:

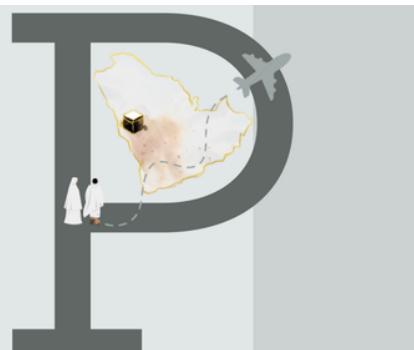
- VISA that has been issued by the Pilgrim, has VisaID, date of its issuance, PCR, and issued by the pilgrim.

HEALTH STATUS:

- HEALTH STATUS has chronic diseases (it takes several values, such as cancer - asthma - diabetes - high blood pressure), special cases (it takes several values, such as physical disability - genetic disorders - musculoskeletal diseases), and a number of medical insurance, and every pilgrim must have a health record.

CATEGORY:

- CATEGORY, the campaign has 2 categories to choose from. The category has price, category number, room view (the room view may be on the Haram or not), number of the days (number of days that pilgrim will stay in 4 or 6 days), activities(visit Al Madinah , zamzam well, sacred house towers or prophet Mohammad museum).



Business Rule

EMPLOYEE:

- EMPLOYEE has an employee ID, first Name , middle Name , last Name, date of birth (to calculate the age to be more accurate), sex, age , and work start date (the starting date of his work in our umrah campaign to determine the date of his salary), salary (If the employee's salary equals zero, this means that he is a volunteer and not an employee) job title (administrative /health /field). Employees Perform tasks according to their job title Tasks may include Organizing and supervising categories, making sure that the campaign is running properly, and correcting and avoiding potential problems and solving them when they occur, Providing first aid to Pilgrim, guiding and directing pilgrims in the field. In the Umrah campaign, we have one or more employees working in one or more categories and when needed the employee may have one or more volunteers working to help him in the category. Each employee has one of these three supervisors (administrative supervisor /health supervisor /field supervisor). The supervising employee may supervise any number of employees, but not all employees are supervisors.. and each volunteer has exactly one manager. an employee who is a manager, may manage any number of volunteers, but not all employees are managers.



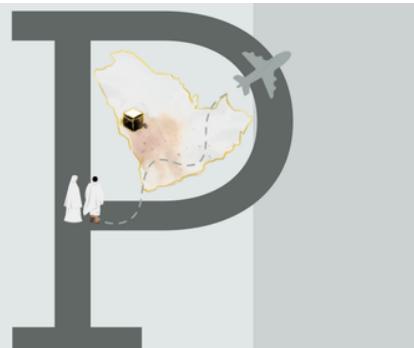
Business Rule

VOLUNTEER:

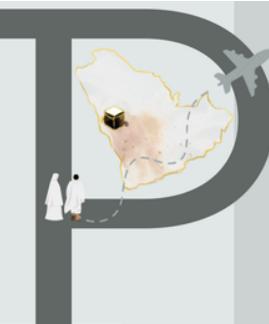
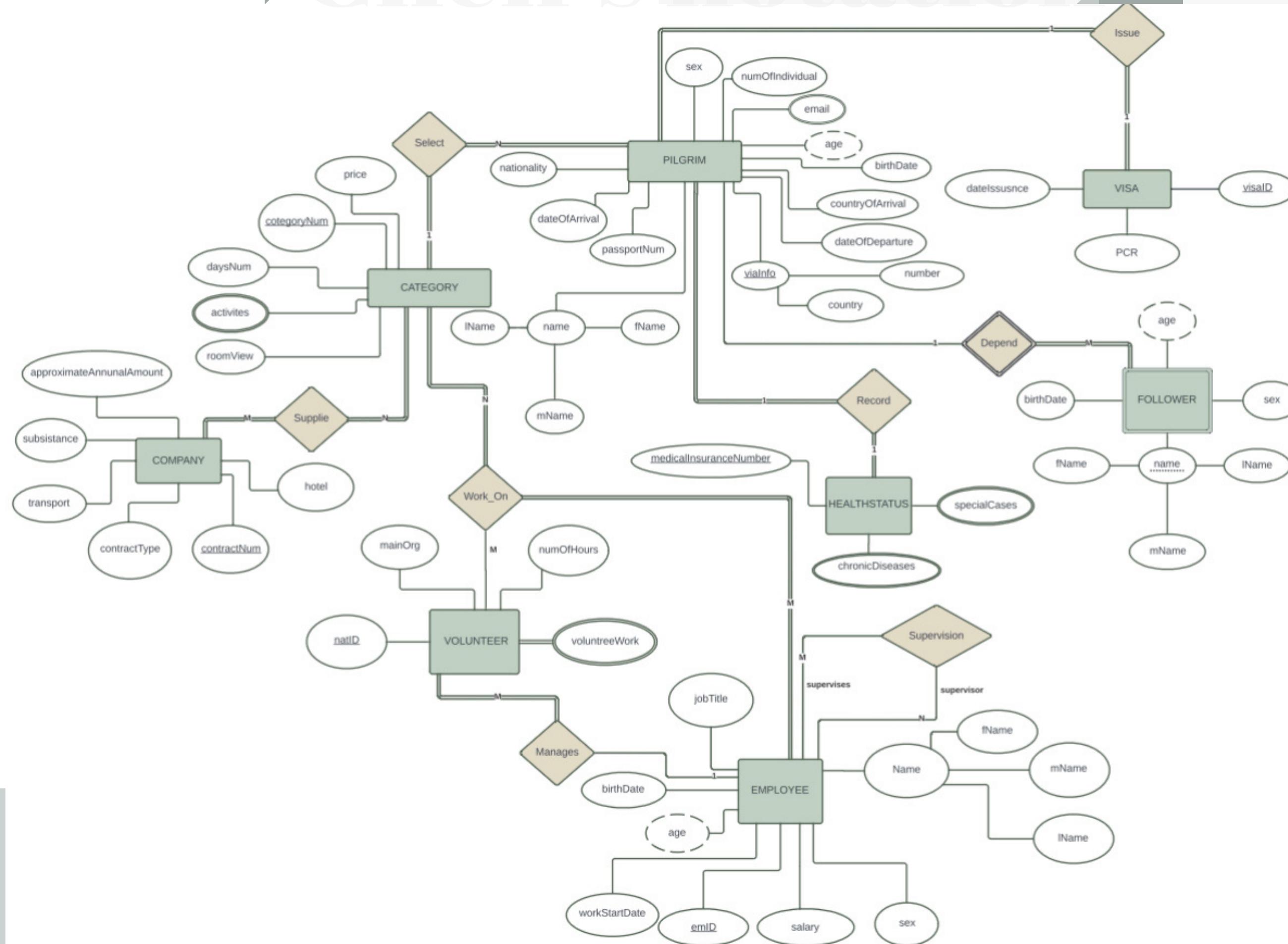
- Each VOLUNTEER has a national ID number, and a number of hours and volunteer work (takes several values such as volunteer acting as paramedics, translators, organizers, and first aid), main organization (the main body from which the volunteer came, such as universities and ministries volunteer platforms), also volunteers works on categories, and each volunteer has a manager from the employees (A number of volunteers shall have one supervisor).

COMPANY:

- the COMPANY supplies our Umrah campaign categories with what is required such as subsistence, transportation, and hotels according to the category chosen by the pilgrim, and ensures the provision of subsistence (that is, providing food and related to its them), transport (that is, providing transportation for the pilgrim according to what suits his destination them), hotel (that is, by providing housing), and contract number (Contract number with the company), type of Contract (annual, In our Umrah campaign it will be an annual contract with companies), the approximate Annual Amount (approximate amount at the conclusion of the contract)



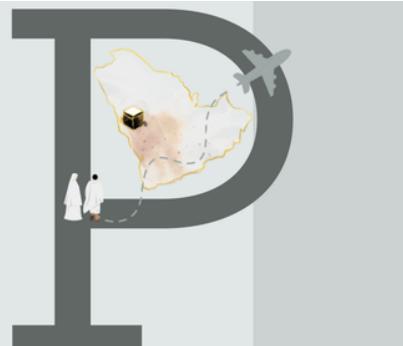
Chen's notation



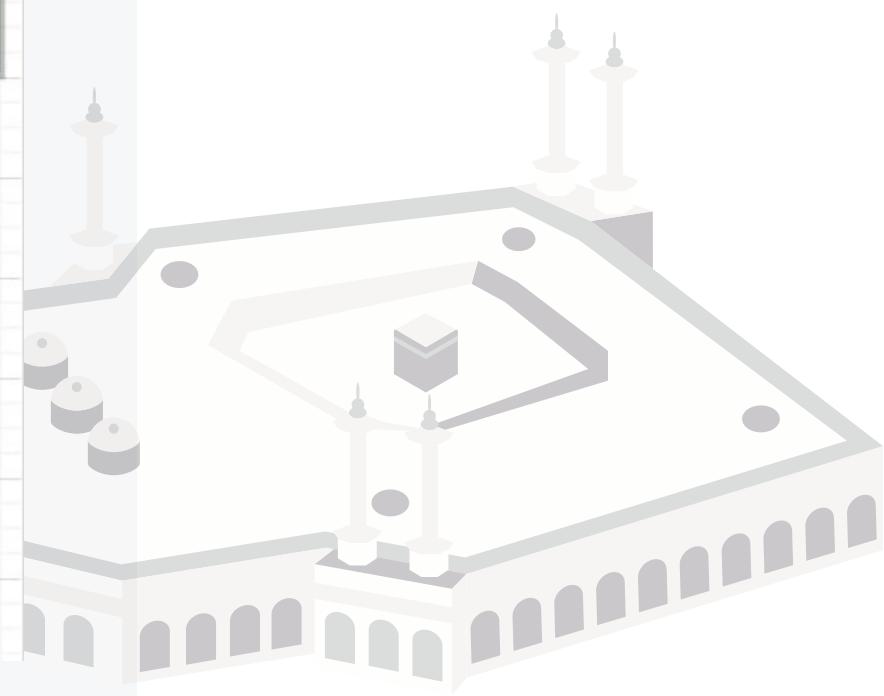
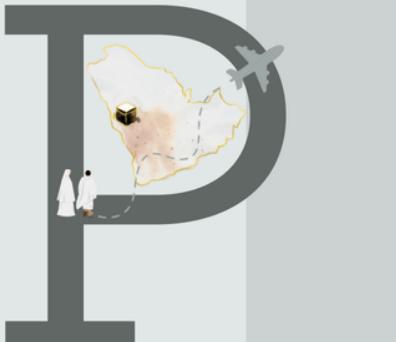
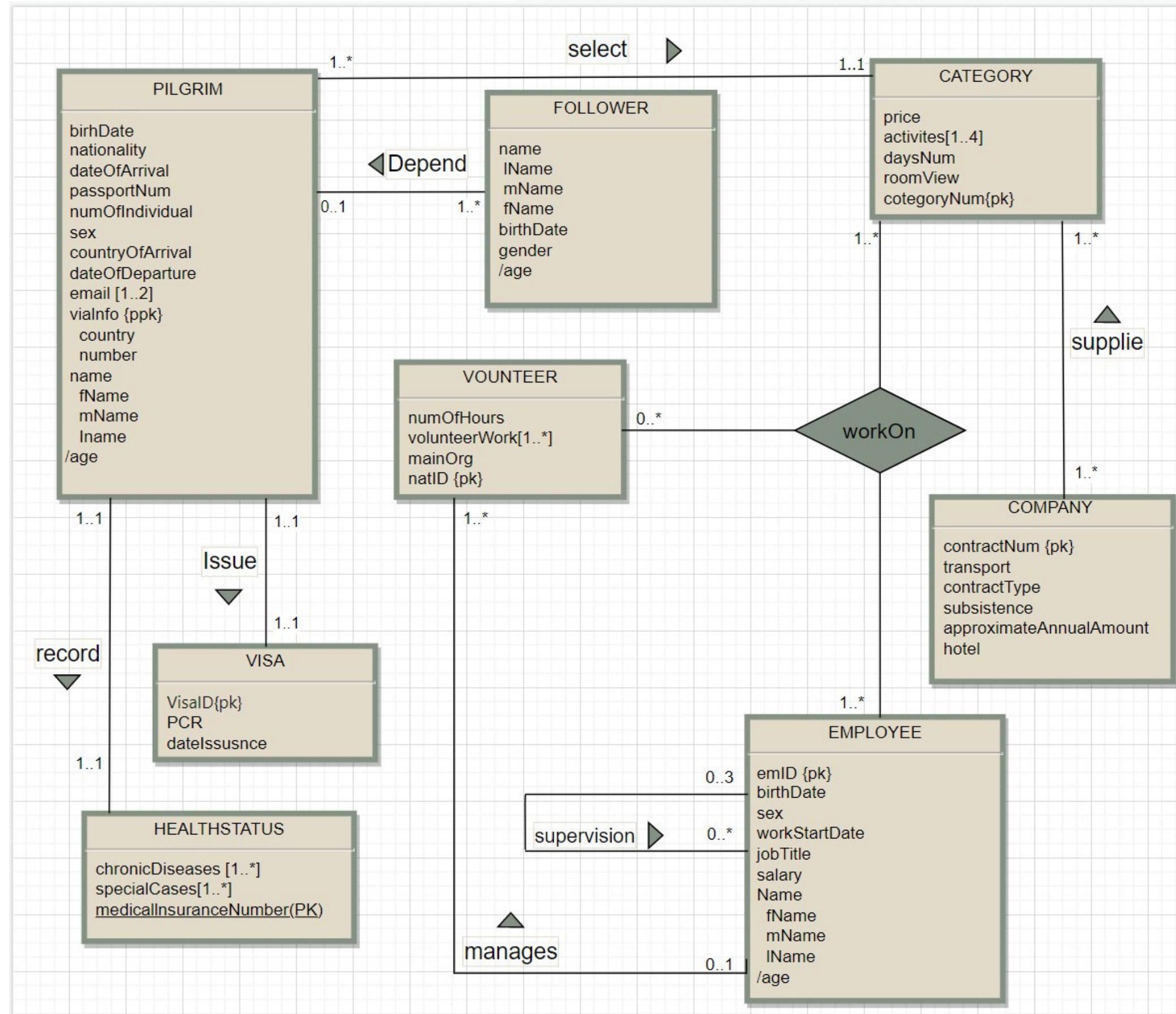
Chen's notation

Link:

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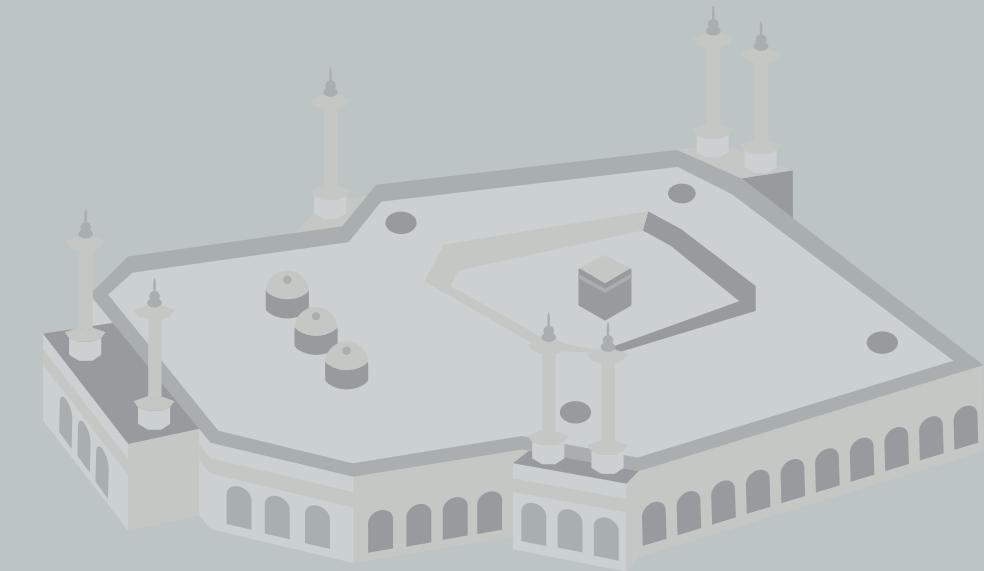
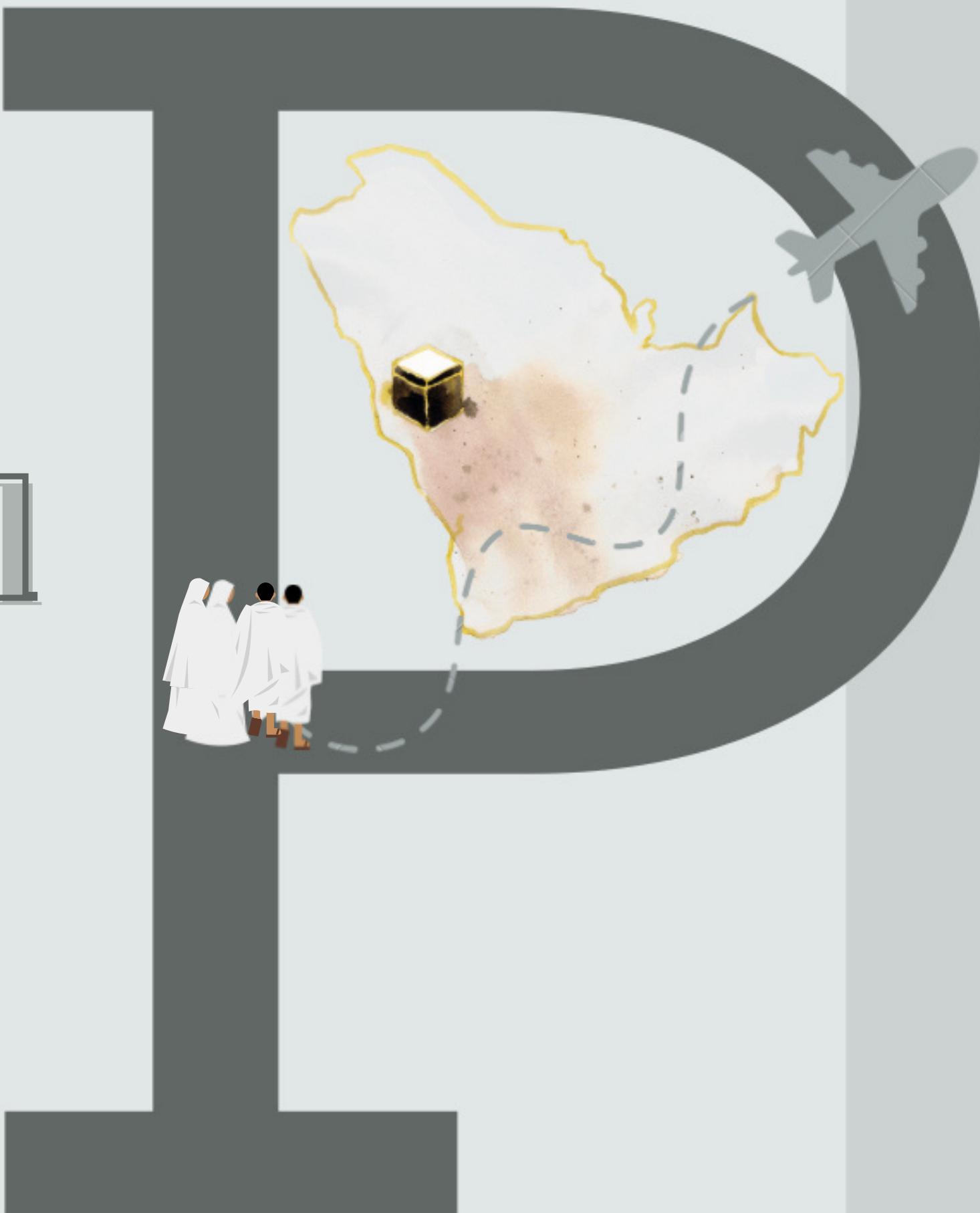
UML



Phase 2

Relational

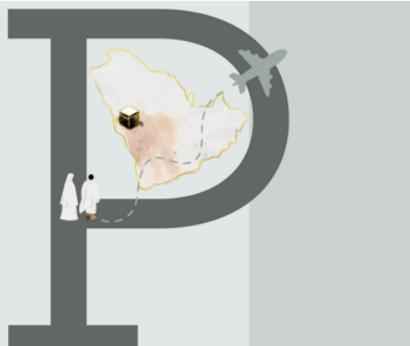
Schema



Group tasks report

Task	Ghadah Al-Fadhli	Aldanh Al-Matrafy	Athary Al-Sowat	Raneem Al-jabri	Raghad Al-Zahrani	Manar Al-Matrafi	Ruba Al-nemary
Relation Schema		✓			✓	✓	
Relational Database Schema				✓			
Mapping	✓		✓				
Normalization							✓

Ruba & All members



Relation Schema

Pilgrim {**IName**:(character:size 25),**fName**:(character:size 25),**mName**:(character:size 25),**sex**:(character:size 1 ,F or M),**passportNum**:(character: 8 digit),**dateOfArrival**:(integer: 8 digit ,00/00/0000),**nationality**:(character: size 25),**numOfIndividual**:(integer: 1digit),**email**:(character: size 30),**age** :(integer :2 digit,range 25-90),**birthDate**: (character: 8 digit, 0000-00-0),**countryOfArrival**:(character:size 25),**dateOfDeparture**:(character: 10 digit), **visainfo**}

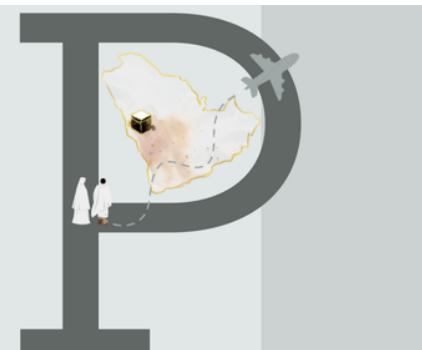
Health Status {**medicallInduranceNumber**:(integer:5),**chronicDiseases**:(character:size 100),**specialCases**:(charactre:size 100)}

Relation Schema

CATEGORY {**price**: (integer : 5 digits, range 10000-15000), **categoryNum** : (integer : 1 digit, value 1 or 2) , **roomView** : (character : size 1 , value Y or N) , **daysNum** : (integer :1 digit , value 6 or 9) , **activities** : (character : size 60) }

EMPLOYEE {**emID** : (integer : 10 digits) **fName** : (character :size 25), **mName** : (character :size 25), **lName** : (character :size 25) , **birthDate** : (character: 8 digits 0000-00-00) , **sex** : (character: size 1 ,F or M) , **age** : (integer :2 digit, range 18-45) , **workStartDate** : (character: 10 digits) **salary** : (integer :5 , range 1000-10000 or =0 If he is a volunteer), **jobTitle** : (character : size 20) range : 'administrative', ' health ', ' filed '

VOLUNTEER {**natID** : (character :10 digits) , **numOfHours** : (integer : 3 digits) , **volunteerWork** : (character : size 100, range: ' paramedics ', 'translators' , 'organizers' , **mainOrg** : (character : size 40) }

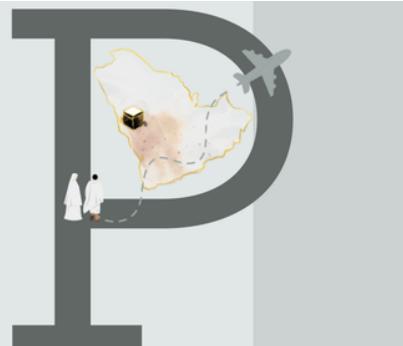


Relation Schema

FOLLOWER {**birthDate**:(integer: 8 digits 0000-00-00), **fName** :(character :size 25),
mName :(character :size 25), **lName** :(character :size 25), **sex** :(character :size 1,value F
or M), **age** :(integer :2 digits,range 15-90) }

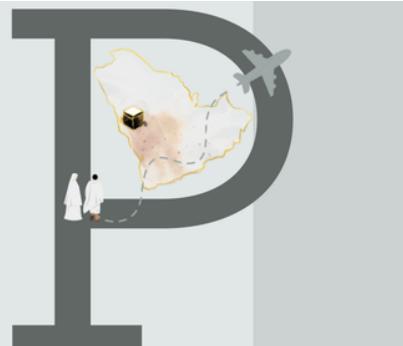
VISA {**VisaID**(integer: 4 digits :0000)**dateissuance**:(integer: 8 digits 0000-00-00), **PCR** :
(character :size 1 ,value Y or N) }

COMPANY {**contractNum**:(integer:3 digits, range 000-100),**subsistence**:(character: size 25
)**transport**:(character :size 25),**hotel**:(character :size 30), **contractType**:(character: size 6 ,
value 'annual') , **approximateAnnualAmount** :(integer:5 digits , range 15000- 20000)}



Relational Database Schema

Umrah campaign={**Pilgrim** (IName, fName, mName, sex, passportNum, dateOfArrival, nationality, numOfIndividual, email, age, birthDate, countryOfArrival, visainfo dateOfDeparture), **Health Status** (medicalInduranceNumber, chronicDiseases, specialCases), **Follower** (birthDate, age, fName, mName, lName, sex), **VISA** (VisaID, dateissuance, PCR), **Company**(subsistence, transport, hotel, contractNum, contractType, approximateAnnualAmount), **Volunteer**(natID, numOfHours, mainOrg, volunteerWork), **Employee**(IName, fName, mName , jobTitle, birthDate, age, workStartDate, emID, salary, sex), **Catagory**(price, cotegoryNum, daysNum, activites, roomView)}



Relational database mapping

STEP_1: Mapping of Regular Entity Types.

PILGRIM

sex	nationality	dateOfArrival	passportNum	dateOfDeparture	countryOfArrival	birthDate	numOfIndividual	IName	mName	fName	Vcountry	Vnumber
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CATEGORY

price	roomView	daysNum	categoryNum
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COMPANY

approximateAnnualAmount	subsistence	transport	contractType	contractNum	hotel
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VOLUNTEER

natID	mainOrg	numOfHours
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EMPLOYEE

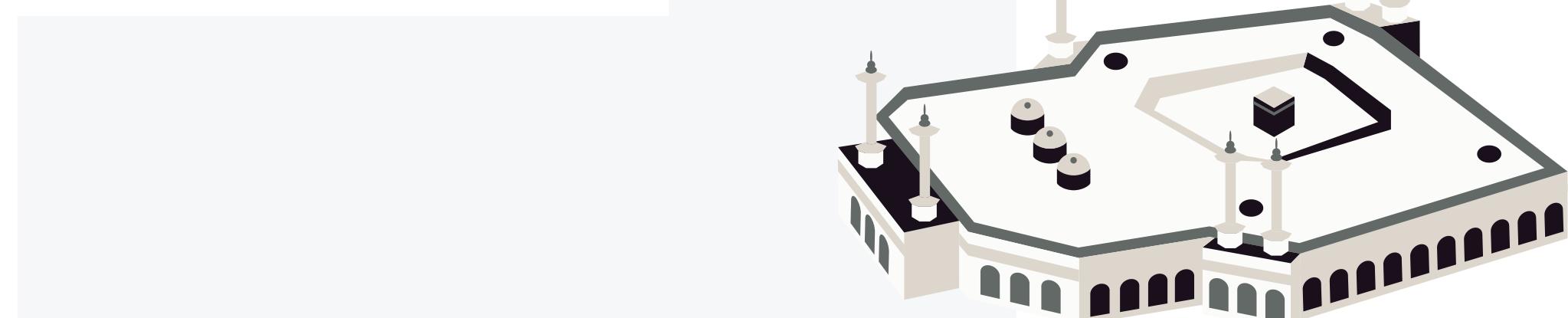
jobTitle	birthDate	workStartDate	emID	salary	sex	fName	mName	IName
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HEALTHSTATUS

medicalInsuranceNumber

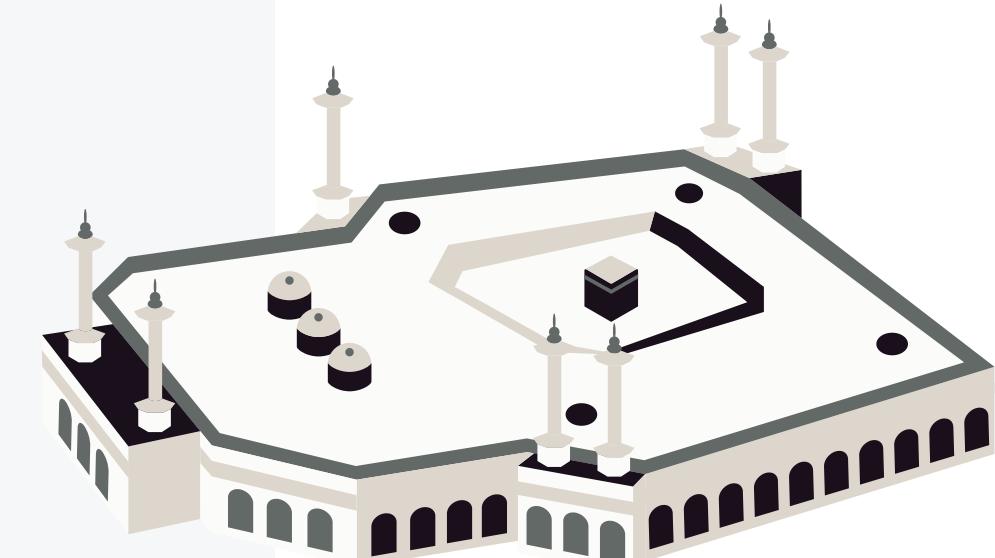
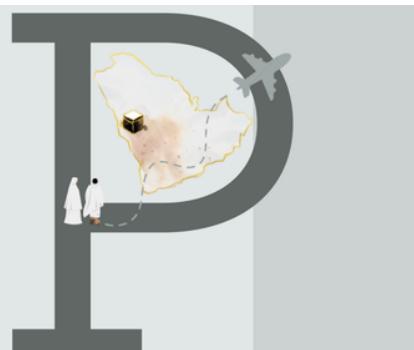
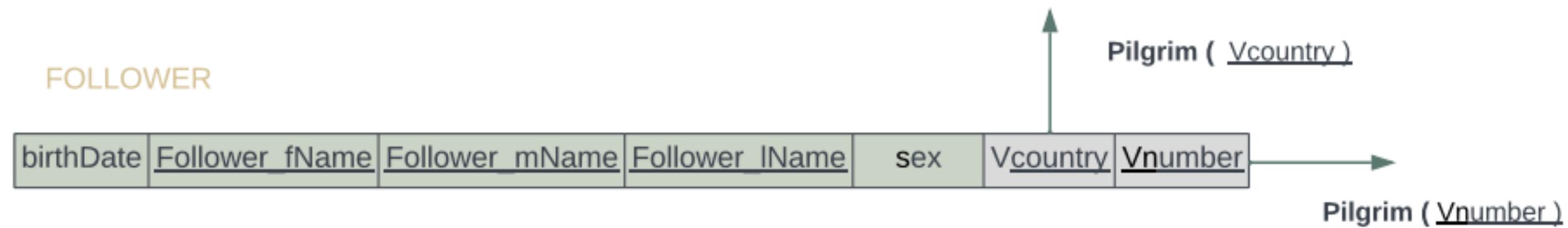
VISA

dateIssusnce	PCR	visaID
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Relational database mapping

STEP_2: Mapping of **Weak Entity Types** into Relation.



Relational database mapping

STEP_3: Mapping of Binary 1:1 Relationship Types .

Relationship : Issue (Pilgrim & Visa)

PILGRIM

sex	nationality	dateOfArrival	passportNum	dateOfDeparture	countryOfArrival	birthDate	numOfIndividual	IName	mName	fName	Vcountry	Vnumber	visaID
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Visa (visaID)

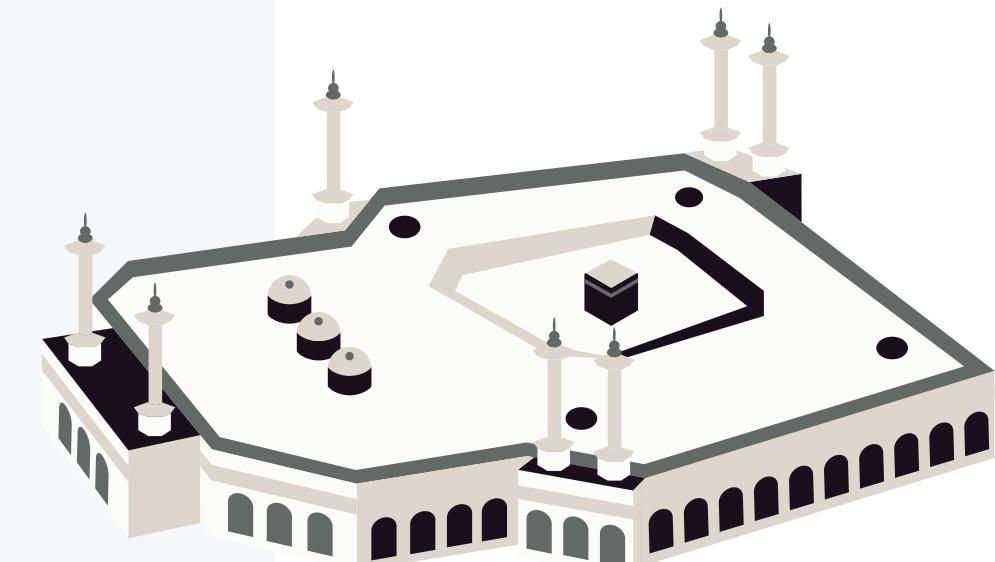
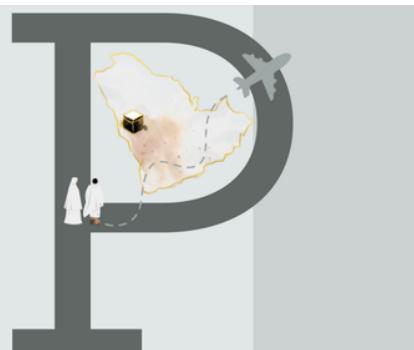
Relationship : Record (Pilgrim & HealthStatus)

Pilgrim (Vcountry)

HEALTHSTATUS

medicalInsuranceNumber	Vcountry	Vnumber
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Pilgrim (Vnumber)



Relational database mapping

STEP_4: Mapping of Binary 1:N Relationship Types .

Relationship : Select (Pilgrim & Category)

PILGRIM

sex	nationality	dateOfArrival	passportNum	dateOfDeparture	countryOfArrival	birthDate	numOfIndividual	IName	mName	fName	Vcountry	Vnumber	visalID	cotegyNum
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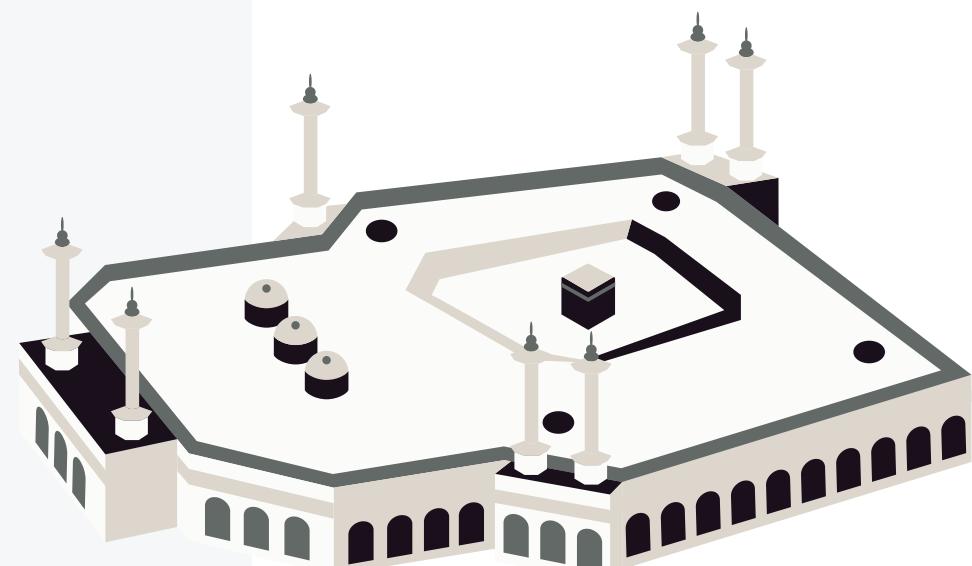
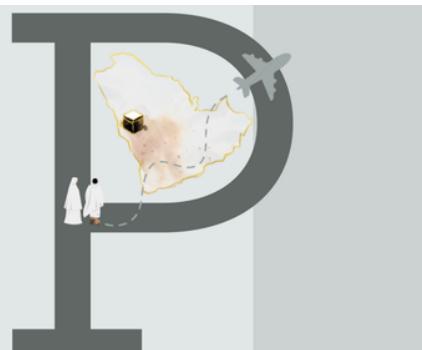
Relationship : Manages (Employee & Volunteer)

VOLUNTEER

Employee (emlID)

natID	mainOrg	numOfHours	emplID
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Relationship : Depend (Follower & Pilgrim) [---> Done in Step 2 _Mapping of Weak Entity Types into Relation_](#)



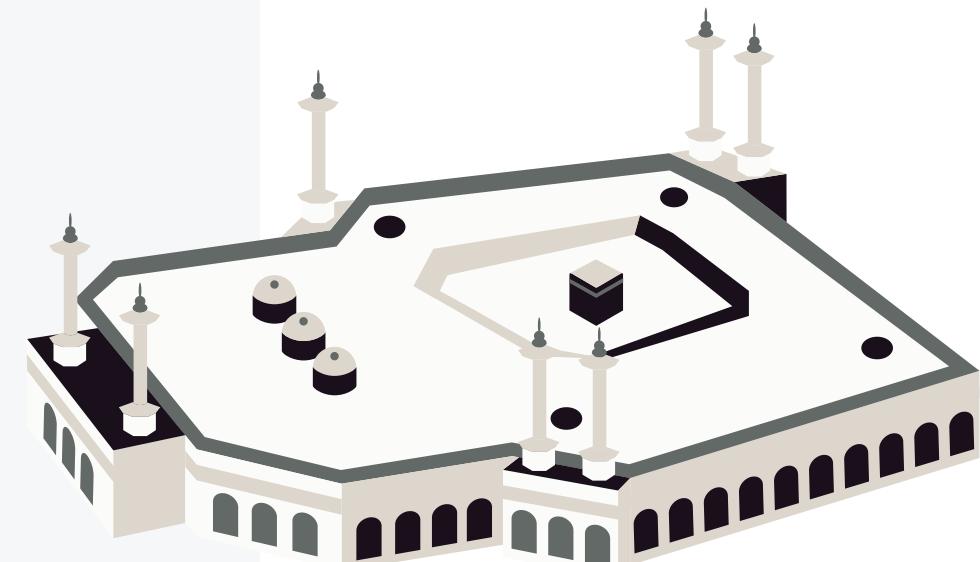
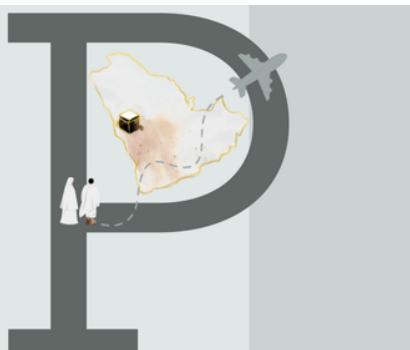
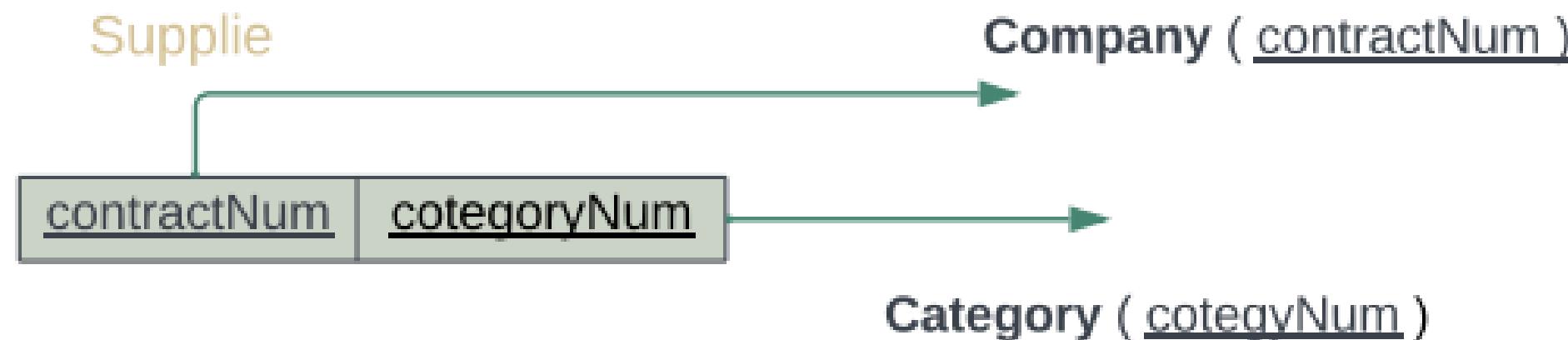
Relational database mapping

STEP_5: Mapping of Binary N:N Relationship Types .

Relationship : Supervision

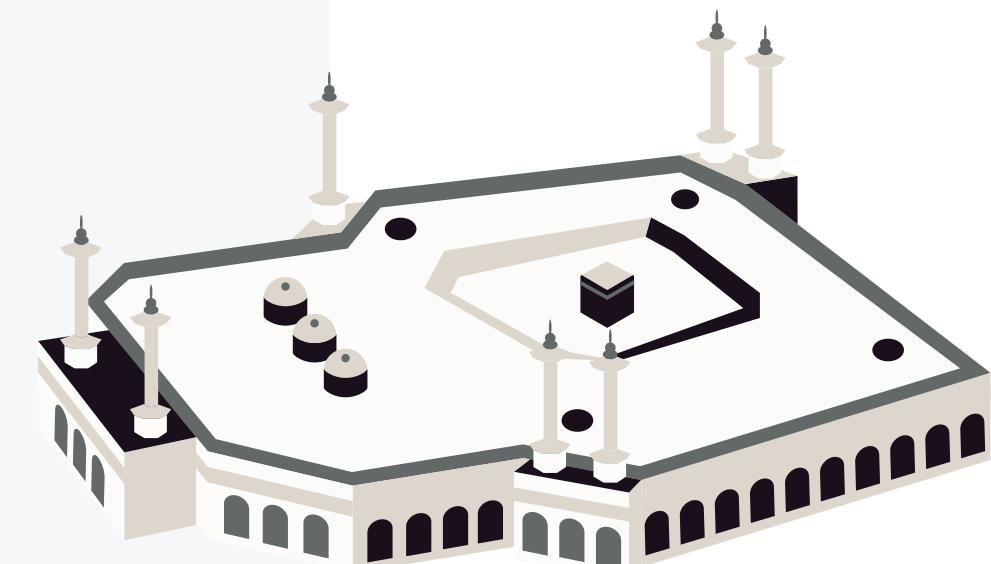
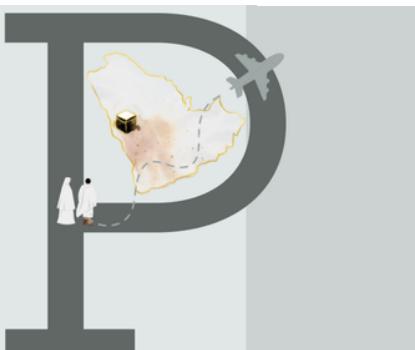
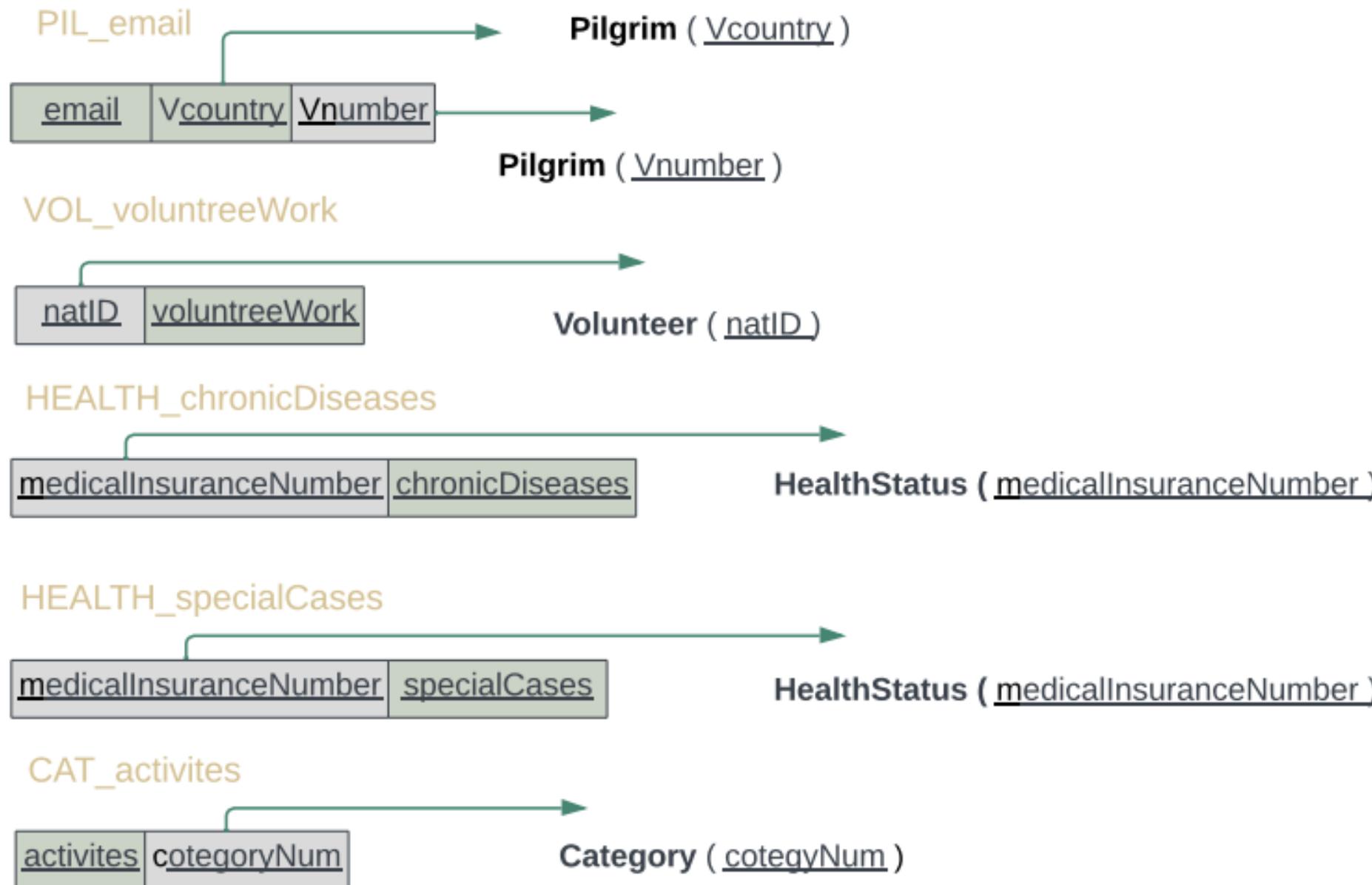


Relationship : Supplie (Company & Category)



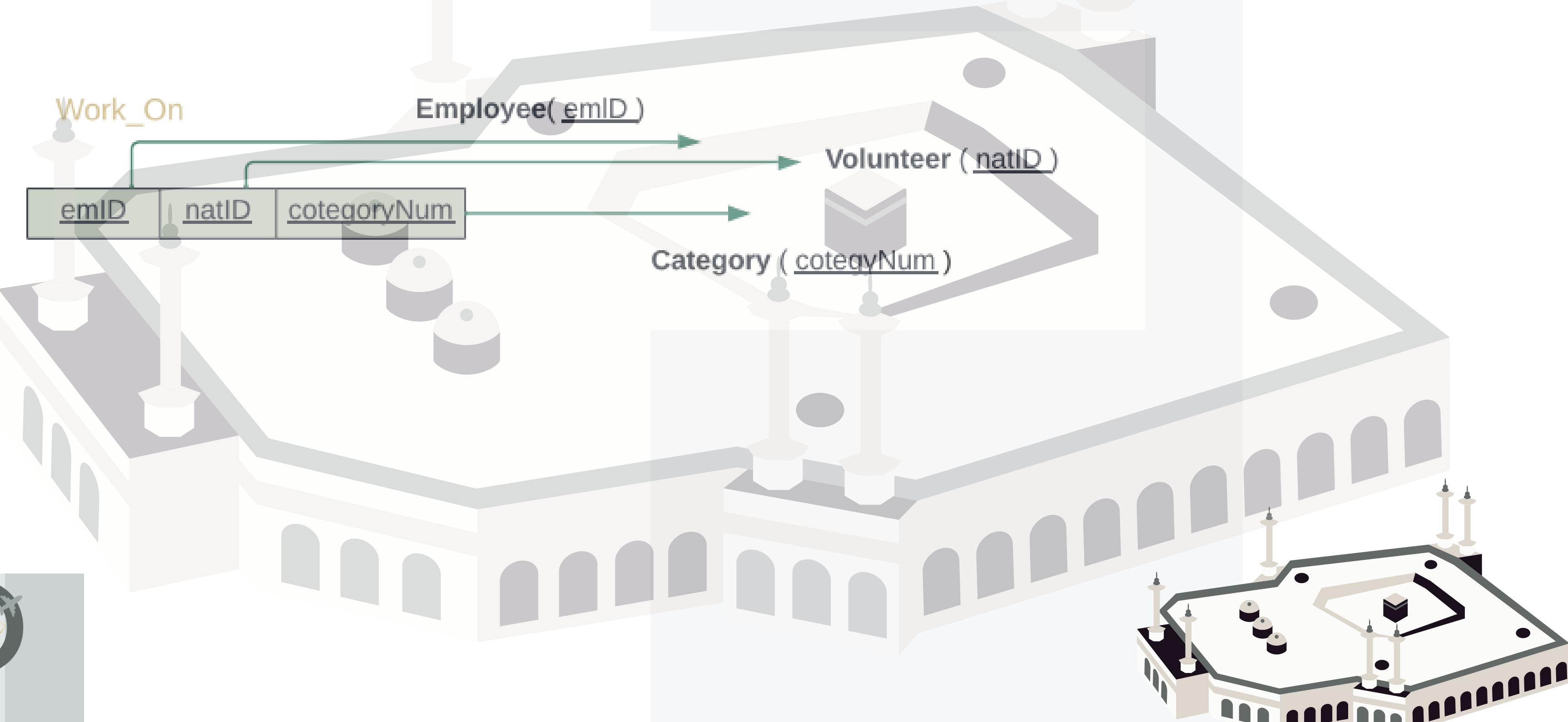
Relational database mapping

STEP_6: Mapping of Multivalued attributes .

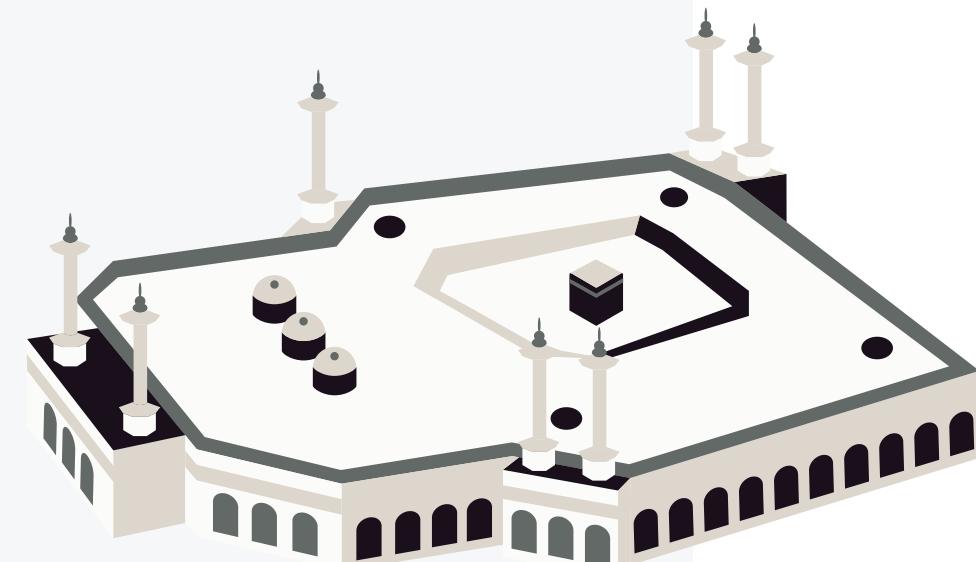
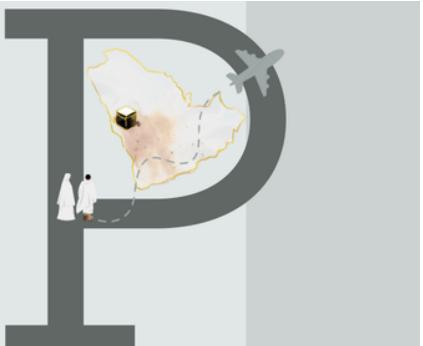
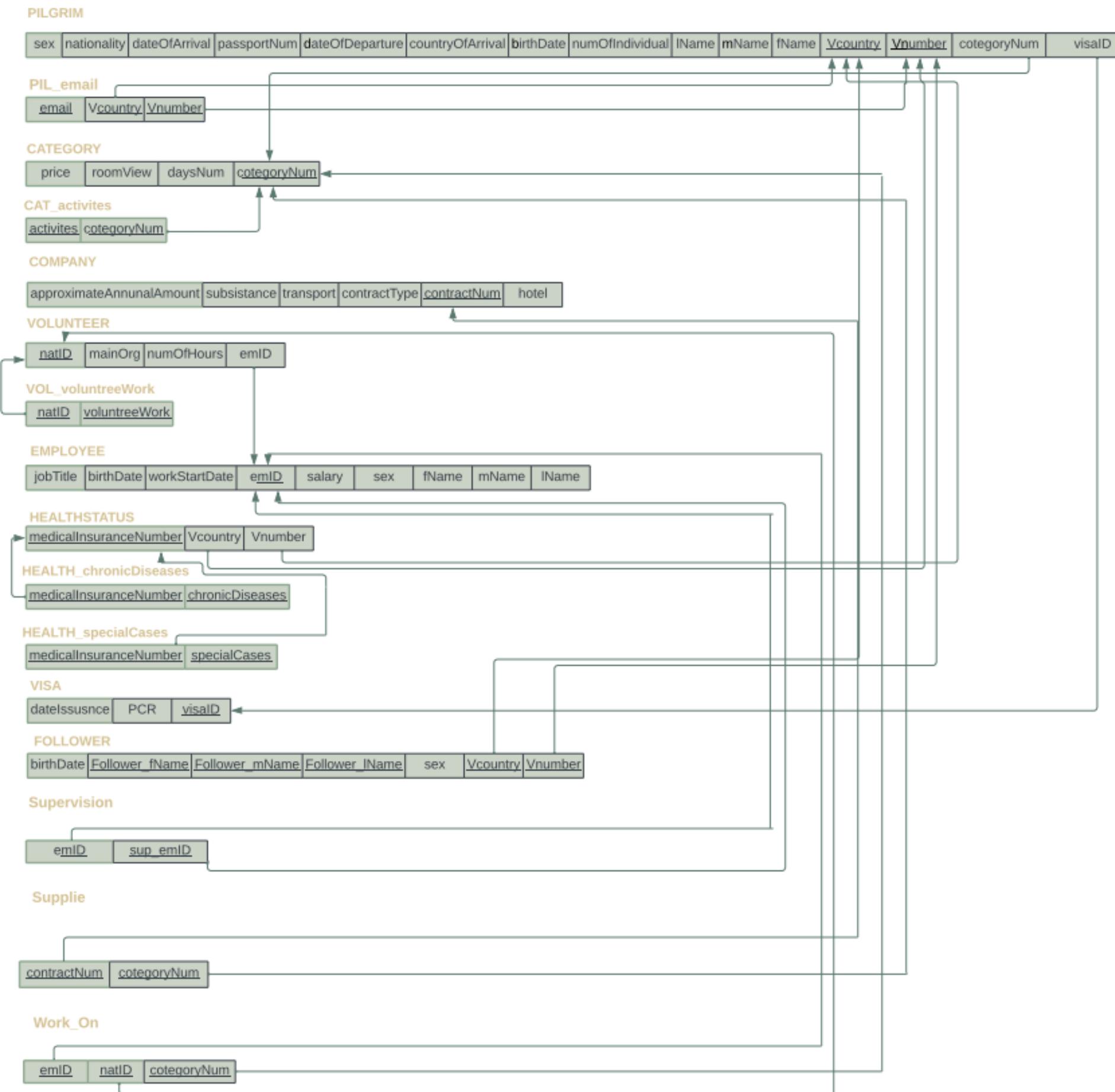


Relational database mapping

STEP_7: Mapping of **N-ary** Relationship Types.



Final Mapping

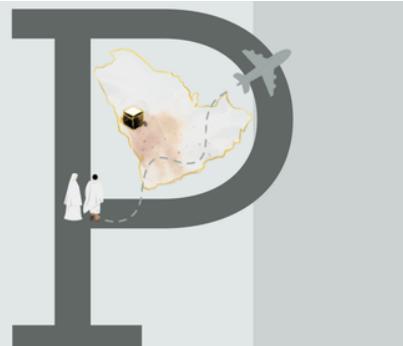


Final Mapping

Link :

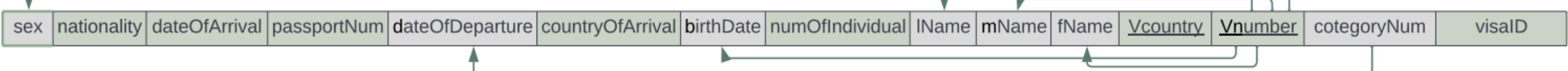
page1

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Normalization

PILGRIM

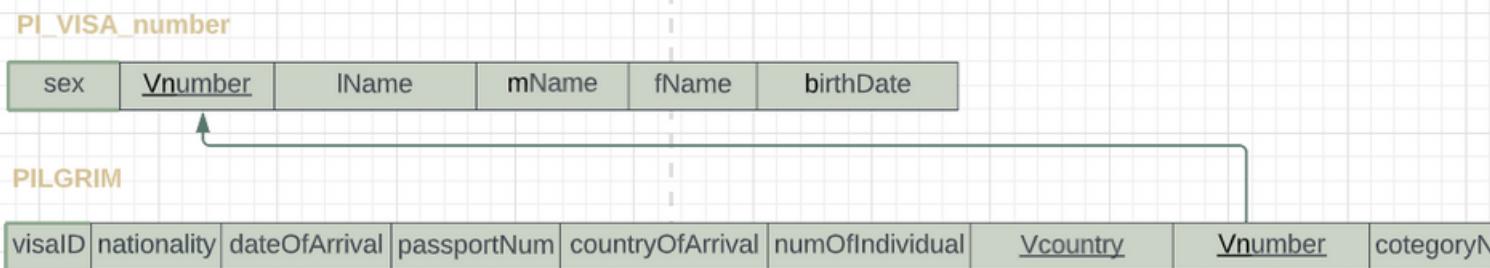


First normal form :

No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

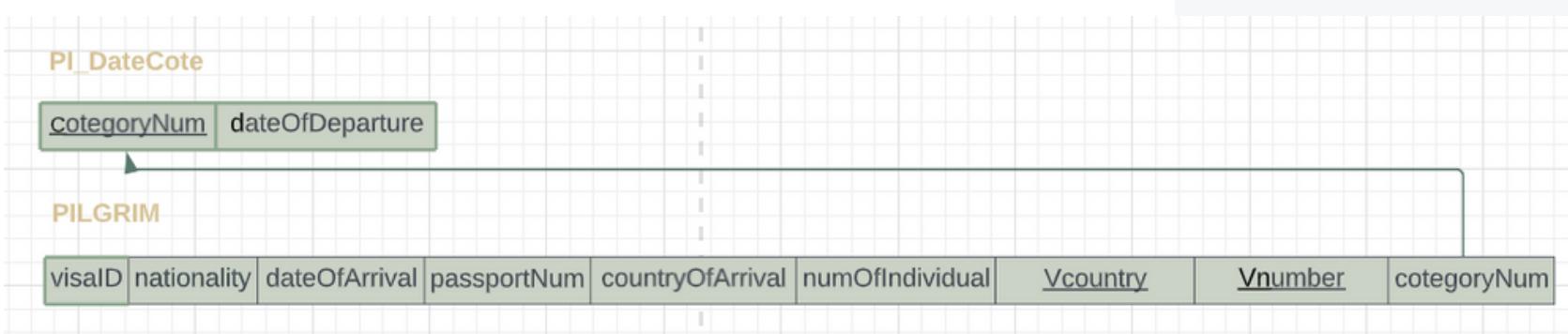
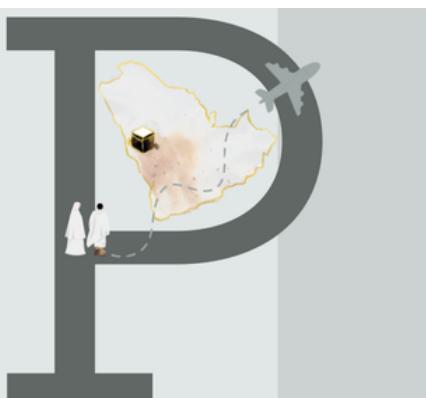
There is one partial dependency therefore the table not in the 2NF.



now There is No partial dependency
therefore the table in the 2NF

Third normal form :

two non-key attribute depends other non- key attribute so therefor the table in not the 3NF



now There is No transitive dependency
therefor the table in the 3NF

Normalization

COMPANY

approximateAnnualAmount	subsistance	transport	contractType	<u>contractNum</u>	hotel
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First normal form :

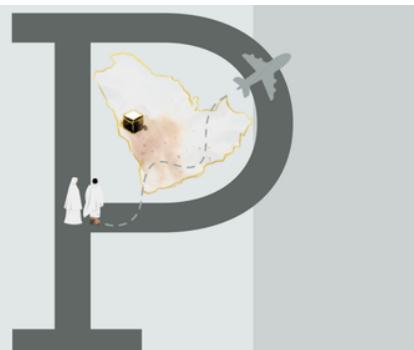
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Normalization

CATEGORY

price	roomView	daysNum	<u>cotegoryNum</u>
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First normal form :

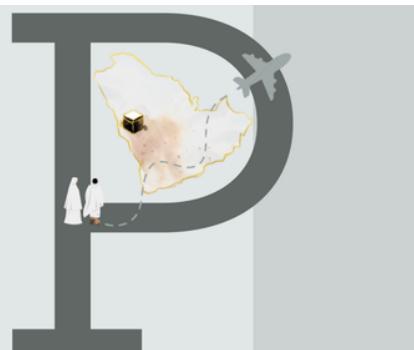
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Normalization

Supplie

<u>contractNum</u>	<u>cotegeyNum</u>
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First normal form :

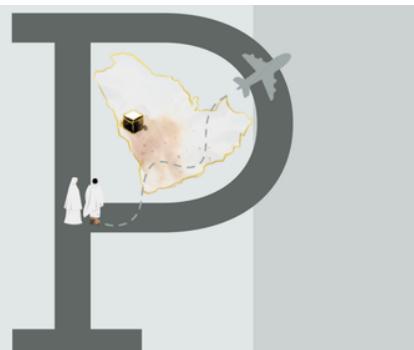
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF





Normalization

dateIssusunce	PCR	<u>visalD</u>
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First normal form :

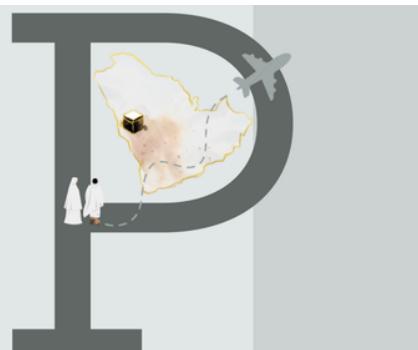
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Normalization

Work On

<u>emID</u>	<u>natID</u>	<u>cotegoryNum</u>
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First normal form :

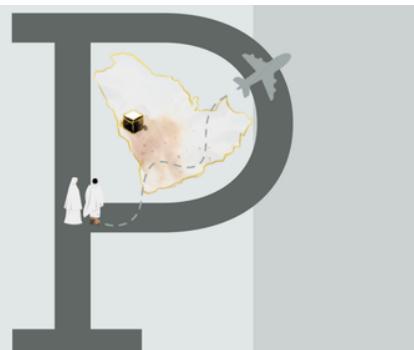
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



VOLUNTEER

Normalization

<u>natID</u>	mainOrg	numOfHours	emID
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First normal form :

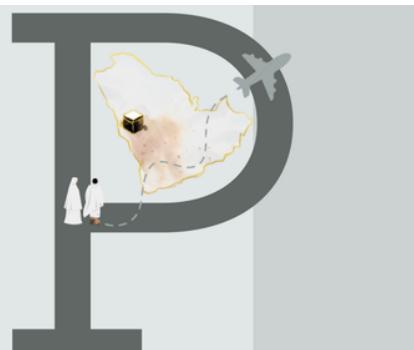
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Normalization

EMPLOYEE

jobTitle	birthDate	workStartDate	<u>emID</u>	salary	sex	fName	mName	IName
----------	-----------	---------------	-------------	--------	-----	-------	-------	-------

First normal form :

No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF

Third normal form :

two non-key attribute depends other non- key attribute therefor the table in not the 3NF

EMPLOYEE

jobTitle	birthDate	workStartDate	<u>emID</u>	sex	fName	mName	IName
----------	-----------	---------------	-------------	-----	-------	-------	-------

EMP_SWORK

jobTitle	salary	<u>workStartDate</u>
----------	--------	----------------------

now There is no transitive dependency therefor the table in the 3NF

Normalization

PIL_email

email	Vcountry	Vnumber
-------	----------	---------

First normal form :

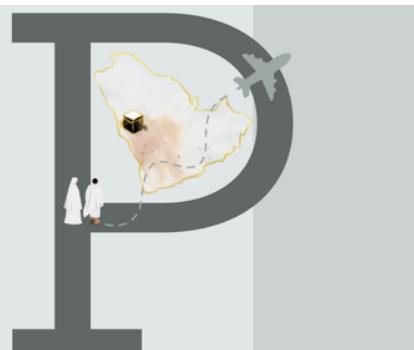
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Normalization

CAT_activites

activites	categoryNum
Surfing	1

First normal form :

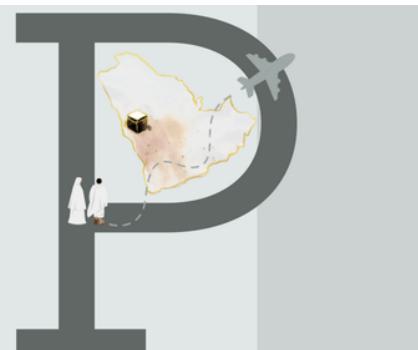
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Normalization

VOL_volunteeWork

natID	volunteeWork
1	1

First normal form :

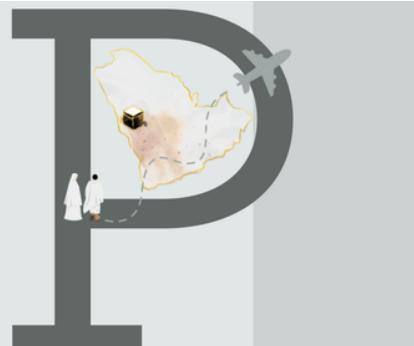
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Normalization

HEALTH_chronicDiseases

medicalInsuranceNumber chronicDiseases

First normal form :

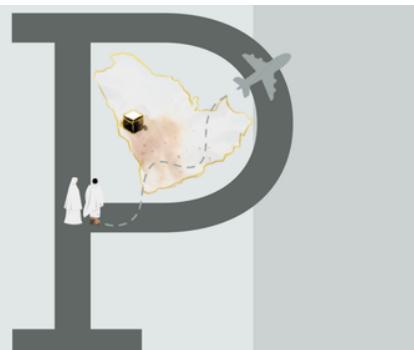
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Normalization

FOLLOWER

birthDate	Follower_fName	Follower_mName	Follower_lName	sex	Vcountry	Vnumber
-----------	----------------	----------------	----------------	-----	----------	---------

First normal form :

No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

FOLLOWER

There is two partial dependency therefore the table not in the 2NF.

Follower_fName	Follower_mName	Follower_lName	Vcountry	Vnumber
----------------	----------------	----------------	----------	---------

FOL_VNUM

Vnumber	sex	birthDate
---------	-----	-----------

now There is No partial dependency therefore the table in the 2NF.

P

Third normal form :

There is no transitive dependency therefor the table in the 3NF

Normalization

HEALTH_specialCases

medicalInsuranceNumber specialCases

First normal form :

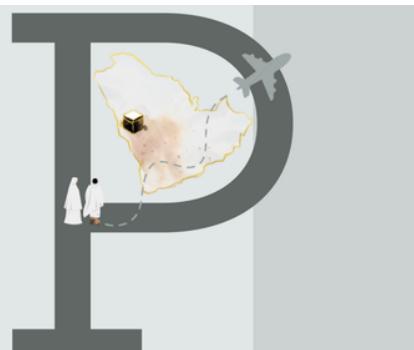
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Normalization

Supervision

<u>emID</u>	<u>sup_emID</u>
-------------	-----------------

First normal form :

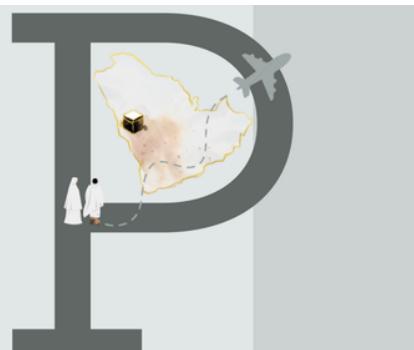
No multivalued attributes was found therefore the table in the 1NF.

Second normal form :

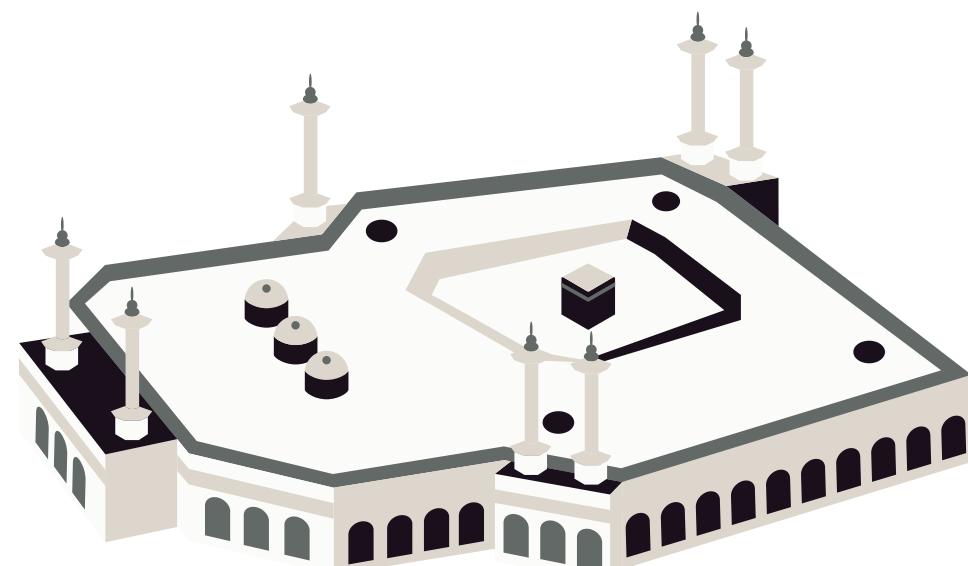
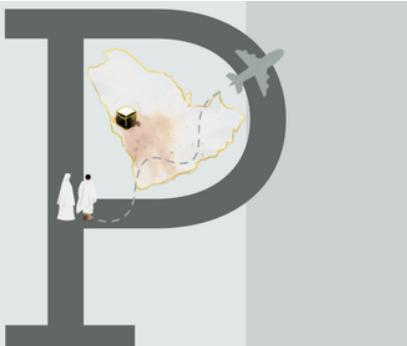
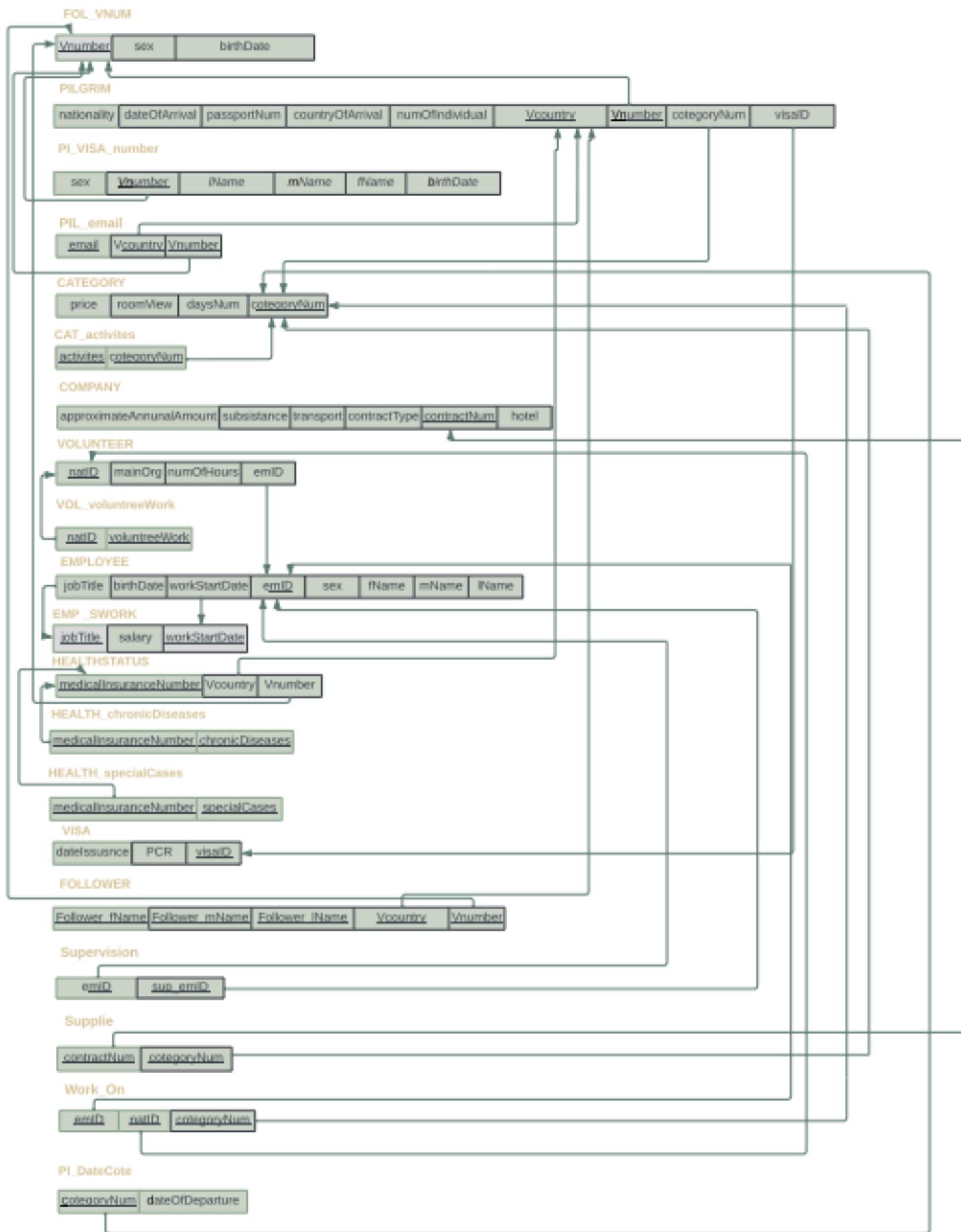
There is No partial dependency therefore the table in the 2NF.

Third normal form :

There is no transitive dependency therefor the table in the 3NF



Mapping After the Normalization



Normalization

Link:

page 3

https://lucid.app/lucidchart/b698893d-0867-44cb-b064-cc200f5982a6/edit?invitationId=inv_dfd727e2-6aa0-482a-9013-67f49e9544b7&page=fFy0b7qk01gt#



Phase 3

SQL commands



in MySQL Workbench

1-CREATE SCHEMA AND CREATE TABLE

```
1 • CREATE SCHEMA UmrahCampaignProject;
2
3
4 • CREATE TABLE FOL_NNUM(
5   Vnumber INT(10) NOT NULL,
6   sex     CHAR(1) CHECK (sex IN ('M','F')),
7   birthDate VARCHAR(10),
8   CONSTRAINT FOL_NNUM_PK PRIMARY KEY (Vnumber)
9 );
10
11 • CREATE TABLE Emp_Swork(
12   workStartDate      VARCHAR(10) NOT NULL,
13   jobTitle           VARCHAR(20) CHECK (jobTitle IN ('administrative', 'health', 'filed'))NOT NULL,
14   salary              INT(5) CHECK (salary >= 1000 AND salary <=10000 OR salary=0),
15   CONSTRAINT Emp_Swork_Pk PRIMARY KEY(workStartDate,jobTitle)
16 );
17
18 • CREATE TABLE Employee (
19   emID          INT(10) NOT NULL UNIQUE,
20   fName         VARCHAR(25),
21   mName         VARCHAR(25),
22   lName         VARCHAR(25),
23   birthDate     VARCHAR(10),
24   sex           CHAR(1),
25   jobTitle      VARCHAR(20),
26   workStartDate VARCHAR(10),
27   CONSTRAINT Employee_Pk PRIMARY KEY(emID),
28   CONSTRAINT Employee_FK1 FOREIGN KEY (workStartDate,jobTitle) REFERENCES Emp_Swork(workStartDate,jobTitle) ON DELETE CASCADE
29 );
30
```

1-CREATE SCHEMA AND CREATE TABLE

```
33 • - CREATE TABLE Category(
34     price INT (5),
35     categoryNum INT(1) CHECK (categoryNum IN (1,2)) NOT NULL UNIQUE ,
36     roomView CHAR(1) CHECK (roomView IN ('Y','N')),
37     daysNum INT (1) CHECK (daysNum IN (9,6)),
38     CONSTRAINT Category_PK PRIMARY KEY (categoryNum)
39 );
40
41 • - CREATE TABLE Employee (
42     emID INT(10) NOT NULL,
43     name VARCHAR(50) NOT NULL,
44     address VARCHAR(100),
45     phoneNum CHAR(10),
46     email VARCHAR(50),
47     CONSTRAINT Employee_PK PRIMARY KEY (emID),
48     CONSTRAINT Employee_UK UNIQUE (name, address, phoneNum, email)
49 );
50
51 • - CREATE TABLE Room (
52     roomID INT(10) NOT NULL ,
53     roomType CHAR(1) CHECK(roomType IN ('A','B','C')) NOT NULL,
54     roomCapacity INT(3),
55     roomPrice DECIMAL(5,2),
56     CONSTRAINT Room_PK PRIMARY KEY (roomID),
57     CONSTRAINT Room_UK UNIQUE (roomType, roomCapacity)
58 );
59
```

1-CREATE SCHEMA AND CREATE TABLE

```
60 • CREATE TABLE Company(  
61     contractNum      INT(3) CHECK (contractNum = 100) NOT NULL UNIQUE,  
62     subsistence       VARCHAR(25),  
63     transport         VARCHAR(25),  
64     hotel             VARCHAR(30),  
65     contractType      VARCHAR(6) CHECK (contractType IN ('annual')),  
66     approximateAnnualAmount INT(5) CHECK (approximateAnnualAmount >= 15000 AND approximateAnnualAmount <= 20000) ,  
67     CONSTRAINT Company_PK PRIMARY KEY (contractNum)  
68 );
```

```
70 • CREATE TABLE CAT_activies(  
71     activies VARCHAR(60) NOT NULL ,  
72     categoryNum INT(1) NOT NULL,  
73     CONSTRAINT CAT_activies_PK PRIMARY KEY (activies,categoryNum),  
74     CONSTRAINT CAT_activies_FK FOREIGN KEY (categoryNum) REFERENCES Category(categoryNum)  
75 );  
76
```

```
77 • CREATE TABLE Supplie (  
78     contractNum INT(3) NOT NULL,  
79     categoryNum INT(1) CHECK (categoryNum IN (1,2)) NOT NULL ,  
80     CONSTRAINT Supplie_PK1 PRIMARY KEY (contractNum,categoryNum),  
81     CONSTRAINT Supplie_FK1 FOREIGN KEY (categoryNum) REFERENCES Category(categoryNum),  
82     CONSTRAINT Supplie_FK2 FOREIGN KEY (contractNum) REFERENCES Company(contractNum)  
83 );  
84
```

1-CREATE SCHEMA AND CREATE TABLE

```
86 • - CREATE TABLE VISA (
87     VisaID INT(4) NOT NULL UNIQUE,
88     dateissuance INT(8),
89     PCR CHAR(1)CHECK (PCR IN ('Y','N')),
90     CONSTRAINT VISA_PK PRIMARY KEY (VisaID)
91 );
92
93 • - CREATE TABLE pilgrim (
94     nationality CHAR (25),
95     dateOfArrival VARCHAR (10),
96     passportNum VARCHAR (8),
97     countryOfArrival CHAR (25),
98     numOfIndividual INT (1) CHECK (numOfIndividual IN (1)),
99     Vnumber INT (10) NOT NULL UNIQUE,
100    Vcountry VARCHAR (25) NOT NULL UNIQUE,
101    VisaID INT (4),
102    categoryNum INT (1) ,
103    CONSTRAINT pilgrim_pk PRIMARY KEY (Vnumber,Vcountry),
104    CONSTRAINT pilgrim_fk1 FOREIGN KEY (Vnumber) REFERENCES FOL_NNUM (Vnumber) ON DELETE CASCADE,
105    CONSTRAINT pilgrim_fk2 FOREIGN KEY (VisaID) REFERENCES VISA (VisaID)ON DELETE CASCADE ,
106    CONSTRAINT pilgrim_fk3 FOREIGN KEY (categoryNum) REFERENCES Category(categoryNum) ON DELETE CASCADE );
```

1-CREATE SCHEMA AND CREATE TABLE

```
110 • Ⓜ CREATE TABLE HEALTHSTATUS(
111     medicalInduranceNumber INT(5) NOT NULL UNIQUE ,
112     Vnumber                 INT(10),
113     Vcountry                VARCHAR(25),
114     CONSTRAINT HEALTHSTATUS_PK PRIMARY KEY (medicalInduranceNumber),
115     CONSTRAINT HEALTHSTATUS_FK1 FOREIGN KEY (Vnumber) REFERENCES FOL_NNUM (Vnumber) ON DELETE CASCADE,
116     CONSTRAINT HEALTHSTATUS_FK2 FOREIGN KEY (Vcountry) REFERENCES pilgrim (Vcountry) ON DELETE CASCADE
117 );
118
119 • Ⓜ CREATE TABLE health_specialCases(
120     medicalInduranceNumber INT (5) NOT NULL ,
121     specialCases CHAR (100)NOT NULL,
122     CONSTRAINT health_specialCases_PK PRIMARY KEY (medicalInduranceNumber,specialCases),
123     CONSTRAINT health_specialCases_FK FOREIGN KEY (medicalInduranceNumber) REFERENCES HEALTHSTATUS (medicalInduranceNumber) ON DELETE CA
124 );
125
127 • Ⓜ CREATE TABLE FOLLOWER(
128     Vnumber INT(10)NOT NULL,
129     Vcountry VARCHAR (25)NOT NULL,
130     Follwer_fName VARCHAR(25)NOT NULL,
131     Follwer_mName VARCHAR(25)NOT NULL,
132     Follwer_lName VARCHAR(25)NOT NULL,
133     CONSTRAINT FOLLOWER_PK PRIMARY KEY (Vnumber,Vcountry,Follwer_fName,Follwer_mName,Follwer_lName),
134     CONSTRAINT FOLLOWER_FK1 FOREIGN KEY (Vnumber) REFERENCES FOL_NNUM (Vnumber) ON DELETE CASCADE,
135     CONSTRAINT FOLLOWER_FK2 FOREIGN KEY (Vcountry) REFERENCES pilgrim (Vcountry) ON DELETE CASCADE
136 );
137
138
139 • Ⓜ CREATE TABLE HealthChronicDiseases(
140     medicalInduranceNumber INT(5) NOT NULL ,
141     chronicDiseases VARCHAR(100)NOT NULL,
142     CONSTRAINT HealthChronicDiseases_PK PRIMARY KEY(medicalInduranceNumber,chronicDiseases),
143     CONSTRAINT HealthChronicDiseases_FK FOREIGN KEY (medicalInduranceNumber) REFERENCES HEALTHSTATUS(medicalInduranceNumber) ON DELETE C
144 );
145
```

1-CREATE SCHEMA AND CREATE TABLE

```
147 • Ⓜ CREATE TABLE PI_VISA_number (
148   Vnumber      INT(10) ,
149   sex          CHAR(1) CHECK (sex IN ('M','F')),
150   lName        VARCHAR (25),
151   mName        VARCHAR (25),
152   fName         VARCHAR (25),
153   birthData    VARCHAR(10),
154   CONSTRAINT PI_VISA_number_Pk PRIMARY KEY(Vnumber),
155   CONSTRAINT PI_VISA_number_Fk1 FOREIGN KEY (Vnumber) REFERENCES FOL_NNUM(Vnumber)ON DELETE CASCADE
156 );
157
158
159 • Ⓜ CREATE TABLE PIL_email (
160   email        VARCHAR (30) NOT NULL,
161   Vcountry     VARCHAR(25) ,
162   Vnumber      INT(10) ,
163   CONSTRAINT PIL_email_Pk PRIMARY KEY (email),
164   CONSTRAINT PIL_email_Fk1 FOREIGN KEY (Vcountry) REFERENCES pilgrim (Vcountry)ON DELETE CASCADE,
165   CONSTRAINT PIL_email_Fk2 FOREIGN KEY (Vnumber) REFERENCES FOL_NNUM (Vnumber)ON DELETE CASCADE
166 );
```

1-CREATE SCHEMA AND CREATE TABLE

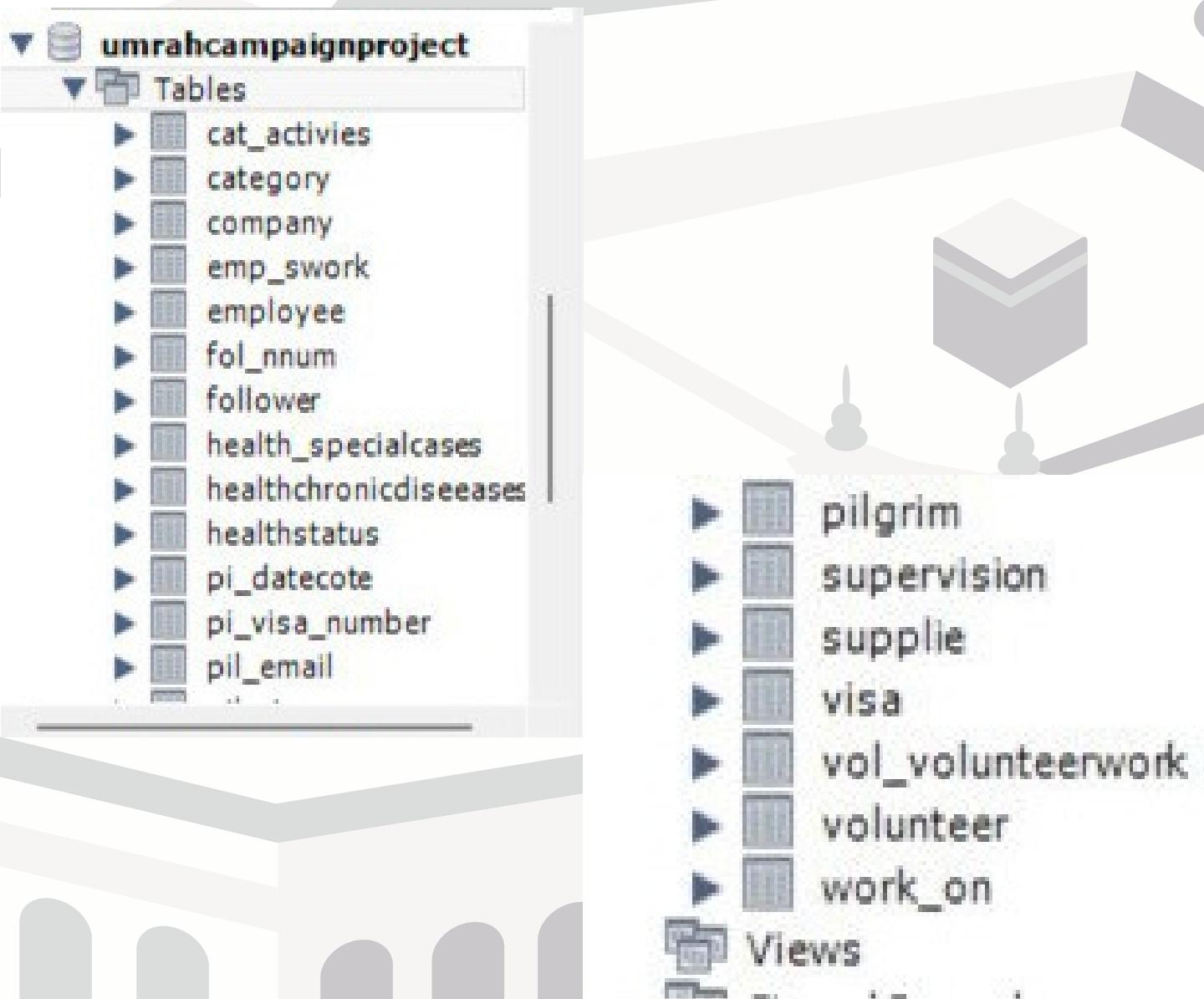
```
169 • Ⓜ CREATE TABLE PI_DateCote (
170     serialNumber int (1) NOT NULL,
171     categoryNum Int(1) NOT NULL ,
172     dateOfDeparture VARCHAR(10),
173     CONSTRAINT PI_DateCote_PK PRIMARY KEY(categoryNum,serialNumber),
174     CONSTRAINT PI_DateCote_Fk FOREIGN KEY (categoryNum) REFERENCES Category(categoryNum)ON DELETE CASCADE
175 );
176
177
178 • Ⓜ CREATE TABLE supervision (
179     emID      INT(10)NOT NULL ,
180     sup_emID   INT(10)NOT NULL ,
181     CONSTRAINT supervision_PK PRIMARY KEY (emID,sup_emID),
182     CONSTRAINT supervision_Fk1 FOREIGN KEY(emID) REFERENCES Employee(emID)ON DELETE CASCADE,
183     CONSTRAINT supervision_Fk2 FOREIGN KEY(sup_emID) REFERENCES Employee(emID)ON DELETE CASCADE
184 );
185
186 • Ⓜ CREATE TABLE Work_On(
187     emID      INT(10),
188     natID      VARCHAR(10),
189     categoryNum INT(1),
190     CONSTRAINT Work_On_Pk PRIMARY KEY (emID,natID,categoryNum),
191     CONSTRAINT Work_On_FK1 FOREIGN KEY (emID) REFERENCES Employee(emID),
192     CONSTRAINT Work_On_FK2 FOREIGN KEY (natID) REFERENCES Volunteer(natID),
193     CONSTRAINT Work_On_Fk3 FOREIGN KEY (categoryNum) REFERENCES Category (categoryNum)
194 );
```

NOTE: This attribute is not in the ER diagram, business rules and UML, at the last moment we add it cause of the insert will cause an error (duplicate primary key).We get afraid to modify at the short time more than one table and more error will be causes.

We are very sorry.

1-CREATE SCHEMA AND CREATE TABLE

All tables created successfully



1-CREATE SCHEMA AND CREATE TABLE

We would like to let you know before we show the results of inserting. We know that you have requested a specific number of rows in each table." insert data into the tables (the minimum is five rows of data per table)."but According to our business rule, there were some tables that could not enter more than one row..

2-INSERT OF THE TABLE

FOL_NNUM

	Vnumber	sex	birthDate
▶	114686389	F	29-1-2002
	124253685	F	28-10-1986
	368190075	M	19-4-2005
	658424653	M	1-2-2003
	826261916	M	29-12-1999

HEALTHSTATUS

	medicalInduranceNumber	Vnumber	Vcountry
▶	10090	114686389	asia
	11205	124253685	pakistan
	16682	658424653	Kuwait
	34321	368190075	Emirates
	78953	826261916	Afghan
	HULL	HULL	HULL



2-INSERT OF THE TABLE

FOLLOWER

	Vnumber	Vcountry	Follwer_fName	Follwer_mName	Follwer_lName
►	826261916	Afghan	karim	malik	afgani
	368190075	Emirates	samir	khaled	Alhashimi
	114686389	Indonesia	somiati	sojanim	gado
	658424653	Kuwait	Hamzaa	esam	Darwesh
	124253685	Pakistan	janah	zayn	khan

Emp_Swork

	workStartDate	jobTitle	salary
►	1-10-2022	administrative	10000
	1-10-2022	filed	5000
	1-10-2022	health	8000
	11-10-2022	administrative	0
	12-10-2022	health	0
	14-10-2022	filed	0
	17-10-2022	administrative	0
	18-10-2022	health	0
	2-10-2022	administrative	10000
	2-10-2022	health	8000



2-INSERT OF THE TABLE

Employee

	emID	fName	mName	lName	birthDate	sex	jobTitle	workStartDate
►	210309218	Taif	Mohammed	AlQahtani	17-5-2001	M	administrative	17-10-2022
	410287311	Aryaf	Fahad	AlObaidi	18-10-2000	F	health	18-10-2022
	500567902	Jamil	Mohammed	AlKuhaili	14-5-1997	M	filed	14-10-2022
	500987321	Ahmed	Khaled	AlFahmi	11-12-1994	M	administrative	11-10-2022
	710322598	Walaa	Ahmed	AlHussaini	12-12-2002	F	health	12-10-2022
	1002002823	Jawad	Moayad	AlHothali	9-10-1995	M	administrative	2-10-2022
	1002718911	Said	Nasser	AlSaeedi	12-12-1989	M	filed	1-10-2022
	1004456791	Kholoud	Mohammed	Ali	10-12-1992	F	health	2-10-2022
	1004927721	Mohammed	Saleh	AlQahtani	9-8-1993	M	health	1-10-2022
	1007553192	Sarah	Abdullah	AlQurashi	14-5-1997	F	administrative	1-10-2022



2-INSERT OF THE TABLE

Category

	price	categoryNum	roomView	daysNum
▶	15000	1	Y	9
	10000	2	N	6

Volunteer

	natID	numOfHours	mainOrg	emID
▶	1005679021	80	Umm Alqura University	500567902
	1009873210	90	Wady Makkah Company	500987321
	1102873111	100	King Adbullah Hospital	410287311
	1103092187	65	Umm Alqura University	210309218
	1103225980	75	King Adbullah Hospital	710322598



2-INSERT OF THE TABLE

COMPANY

	contractNum	subsistence	transport	hotel	contractType	approximateAnnualAmount
▶	100	Almarayi	Saptco	Rafels	annual	16000

VOL_volunteerWork

	natID	volunteerWork
▶	1005679021	organizers
	1005679021	paramedics
	1009873210	organizers
	1102873111	paramedics
	1103092187	organizers
	1103092187	translators
	1103225980	paramedics

2-INSERT OF THE TABLE

CAT_activities

activities	categoryNum
sacred house towers	1
zamzam well	1
prophet Mohammad museum	2
visit Al Madinah	2

Supplie

	contractNum	categoryNum
	100	1
	100	2



2-INSERT OF THE TABLE

VISA

	VisaID	dateissuance	PCR
▶	1001	1387	Y
	1002	1399	Y
	1003	1387	Y
	1004	1394	Y
	1005	1406	Y



2-INSERT OF THE TABLE

pilgrim

nationality	dateOfArrival	passportNum	countryOfArrival	numOfIndividual	Vnumber	Vcountry	VisaID	categoryNum
ndonesian	2022-10-21	IND07254	Indonesia	1	114686389	Indonesia	1004	1
akistani	2022-10-26	P71534	Pakistan	1	124253685	Pakistan	1001	2
ordanian	2022-10-20	J176254	Emirates	1	368190075	Emirates	1005	1
gypt	2022-10-24	EQ415	Kuwait	1	658424653	Kuwait	1002	2
Afghan	2022-10-26	AF958241	Afghan	1	826261916	Afghan	1003	1

supervision

	emID	sup_emID
→	1002002823	1002718911
	1002002823	1004456791
	1007553192	1004927721



2-INSERT OF THE TABLE

PI_DateCote

	serialNumber	categoryNum	dateOfDeparture
▶	3	1	26-10-2022
4		1	21-10-2022
5		1	20-10-2022
1		2	26-10-2022
2		2	24-10-2022

HealthChronicDiseases

	medicalInduranceNumber	chronicDiseases
▶	10090	high blood
	11205	high blood
	16682	asthma
	34321	cancer
	78953	diabetes



2-INSERT OF THE TABLE

health_specialCases

	medicalInduranceNumber	specialCases
▶	10090	genetic disorders
	11205	physical disability
	16682	none
	34321	none
	78953	musculoskeletal



2-INSERT OF THE TABLE

PI_VISA_number

	Vnumber	sex	lName	mName	fName	birthData
▶	114686389	F	Agus	Andri	Shams	23-05-1994
	124253685	M	Khan	Raja	Mohammed	19-04-1990
	368190075	M	Alhashimi	Abdullah	Khaled	15-07-85
	658424653	F	Darwesh	Mostafa	Radawa	09-05-1985
	826261916	M	Afgani	Nasseer	Khalad	17-01-1992

PIL_email

	email	Vcountry	Vnumber
▶	Khal1992@gmail.com	Afghan	826261916
	khalid18@gmail.com	Emirates	368190075
	moham199@gmail.com	Pakistan	124253685
	radwa19@gmail.com	Kuwait	658424653
	shan10@gmail.com	Indonesia	114686389

2-INSERT OF THE TABLE

Work_On

	emID	natiD	categoryNum
▶	1002718911	1005679021	1
	1004456791	1009873210	1
	1004927721	1103225980	1
	1002002823	1102873111	2
	1007553192	1103092187	2



SQL Queries using UPDATE command

The volunteers were granted a bonus of 1500, as we considered that the volunteer was the one whose salary was zero

```
UPDATE Emp_Swork  
SET salary=salary+1500  
WHERE salary=0;  
  
SELECT workStartDate, jobTitle, salary AS Salary_OR_BonusFor_volunteer  
FROM Emp_Swork;
```

RUSELT:

workStartDate	jobTitle	Salary_OR_BonusFor_volunteer
1-10-2022	administrative	10000
1-10-2022	filed	5000
1-10-2022	health	8000
11-10-2022	administrative	1500
12-10-2022	health	1500
14-10-2022	filed	1500
17-10-2022	administrative	1500
18-10-2022	health	1500
2-10-2022	administrative	10000
2-10-2022	health	8000
NUL	NUL	NUL

SQL Queries using UPDATE command-

Update the first name from Hamza to Ahmed

```
UPDATE FOLLOWER
```

```
SET Follower_fName='Ahmaed'
```

```
WHERE Follower_fName ='Hamzaa';
```

```
SELECT *
```

```
FROM FOLLOWER;
```

RESULT:

	Vnumber	Vcountry	Follower_fName	Follower_mName	Follower_lName
▶	826261916	Afghan	karim	malik	afgani
	368190075	Emirates	samir	khaled	Alhashimi
	114686389	Indonesia	somiati	sojanim	gado
	658424653	Kuwait	Ahmaed	esam	Darwesh
	124253685	Pakistan	janah	zayn	khan



SQL Queries using UPDATE command

Change activity sacred house towers to "the beautiful names of Allah exhibition".

```
UPDATE CAT_activies  
SET activies='The Beautiful Names of Allah Exhibition'  
WHERE activies='sacred house towers';  
SELECT *  
FROM CAT_activies;
```

RUSELT:

activies	categoryNum
The Beautiful Names of Allah Exhibition	1
zamzam well	1
prophet Mohammad museum	2
visit Al Madinah	2



SQL Queries using GROUP BY command

select with group by _Show the number of pilgrims and number of individual in each category..

- ```
SELECT categoryNum, COUNT(nationality) AS Number_Of_Pilgrims, COUNT(numOfIndividual) AS Number_Of_Individual
FROM pilgrim
GROUP BY categoryNum;
```

RUSELT:

|   | categoryNum | Number_Of_Pilgrims | Number_Of_Individual |
|---|-------------|--------------------|----------------------|
| ▶ | 1           | 3                  | 3                    |
|   | 2           | 2                  | 2                    |

# SQL Queries using GROUP BY command

Display the number of females in the table FOL\_NNUM

```
SELECT COUNT(sex) AS number_of_female
FROM FOL_NNUM
WHERE sex IN ('F')
GROUP BY sex ;
```

RUSELT:

| number_of_female |
|------------------|
| 2                |



# SQL Queries using WHERE command

Select with where\_The number of volunteer hours with main Org that exceeds the average number of volunteer hours

```
SELECT mainOrg, numOfHours
FROM Volunteer
WHERE numOfHours > (SELECT AVG(numOfHours) FROM Volunteer);
```

RUSELT:

|   | mainOrg                | numOfHours |
|---|------------------------|------------|
| ▶ | Wady Makkah Company    | 90         |
|   | King Abdullah Hospital | 100        |



# SQL Queries using WHERE command

select with where dusplay the data of the pilgrims who arrived on the same day

```
SELECT dateOfArrival , Vnumber , Vcountry
FROM pilgrim
WHERE dateOfArrival IN ('2022-10-26');
```

RUSELT:

|   | dateOfArrival | Vnumber   | Vcountry |
|---|---------------|-----------|----------|
| ▶ | 2022-10-26    | 124253685 | Pakistan |
|   | 2022-10-26    | 826261916 | Afghan   |
|   | NULL          | NULL      | NULL     |

# SQL Queries using WHERE command

Show the number of categories with the largest price 1200

```
SELECT categoryNum
FROM category
WHERE price > 1200;
```

RESULT:

| categoryNum |
|-------------|
| 1           |



# SQL Queries using HAVING command

select with group by and having\_Show the number of pilgrims and number of individual in each category

- ```
SELECT categoryNum, COUNT(activities) AS Number_Of_Activities
FROM CAT_activities
GROUP BY categoryNum
HAVING categoryNum=2;
```

RUSELT:

categoryNum	Number_Of_Activities
2	1

SQL Queries using SUBQUERY command

Nested Subqueries use of IN _show the volunteer work for Taif

```
SELECT volunteerWork AS Taif_VolunteerWork  
FROM vol_volunteerwork  
WHERE natID IN ( SELECT natID  
                  FROM Volunteer  
                  WHERE emID IN ( SELECT emID  
                                  FROM Employee  
                                  WHERE fName='Taif'));
```

RUSELT:

Taif_VolunteerWork

organizers

translators



SQL Queries using JOIN OPERATION command

Sorting a Simple Join_Dislay the information of the pilgrim (visa number ,nationality, number of individual,passport number) also the sex of the individual

```
399 • SELECT nationality,numOfIndividual,passportNum,dateOfArrival,p.Vnumber,sex As sex_Of_Individual  
400 FROM pilgrim p,FOL_NNUM f  
401 WHERE p.Vnumber=f.Vnumber;  
402
```

RUSELT:

	nationality	numOfIndividual	passportNum	dateOfArrival	Vnumber	sex_Of_Individual
▶	Indonesian	1	INDO7254	2022-10-21	114686389	F
	Pakistani	1	P71534	2022-10-26	124253685	F
	Jordanian	1	J176254	2022-10-20	368190075	M
	Egypt	1	EQ415	2022-10-24	658424653	M
	Afghan	1	AF958241	2022-10-26	826261916	M

SQL Queries using DELETE command

Delete the activity ' visit almadinah '.

```
386
387 •  DELETE FROM CAT_activities
388 WHERE activities='visit Al Madinah';
389
```

RUSELT:

activities	categoryNum
sacred house towers	1
zamzam well	1
prophet Mohammad museum	2
NULL	NULL

SQL Queries using DELETE command

Delete the EmployeeID of volunteer Kholoud = 1004456791

```
DELETE FROM supervision  
WHERE sup_emID = 1004456791;
```

RUSELT:

	emID	sup_emID
▶	1002002823	1002718911
	1007553192	1004927721
	HULL	HULL



SQL Queries using ORDER BY command

select witDisplay the data of the pilgrims according to the oldest arrival date, if there is a similarity in the date of arrival, it is arranged according to the category number of the pilgrim

```
SELECT *  
FROM pilgrim  
ORDER BY dateOfArrival , categoryNum ASC
```

RUSELT

SQL Queries using ORDER BY command

Display the first, middle and last names of the followers according to the order of the letters of their first names From A to Z in ascending order

```
174 •     SELECT Follower_fName,Follower_mName,Follower_lName  
175      FROM FOLLOWER  
176      order by Follower_fName ASC;
```

RUSELT:

	Follower_fName	Follower_mName	Follower_lName
▶	Hamzaa	esam	Darwesh
	janah	zayn	khan
	karim	malik	afgani
	samir	khaled	Alhashimi
	somiati	sojanim	gado





finally

Difficulties that we faced :

.We can not shared MYSQL file and work on it simultaneously -1

Difficulty dealing with mySQL workbench where some error messages appear with no -2

.error actually

.Any simple error in normalization causes big errors while executing sql code -3

.Dealing with MySQL is a lit bit hard-4

Each member writes its part in sql different and when compiling the code some errors-5

.occur

large number of tables after normalization, we encountered difficulties in dealing -6

.with references and discovering errors