Self- and Peer Assessment Form for DIT032

Student Name: George Sarkisian

Group: AG49

Assignment: 1

Self Assessment

(briefly describe the tasks you carried out in this assignment in your own words – be concrete!)

In reading EER Diagrams and in Creating an EER Diagram i work on them and then we desgused the answers and my partner helped me in the diffecult parts, un Relational Algebra part he did all the work and we desgused the answers and tryied together to find solutions in the hard parts, un setup postgressql we both set up the postgres and make sure that it works

Peer Assessment

(briefly describe the tasks your partner carried out in this assignment in your own words – be concrete!)

In reading EER Diagrams and in Creating an EER Diagram i work on them and then we desgused the answers and my partner helped me in the diffecult parts, un Relational Algebra part he did all the work and we desgused the answers and tryied together to find solutions in the hard parts, un setup postgressql we both set up the postgres and make sure that it works

Effort Estimation

(briefly list how much time in hours you invested, per assignment subitem – this will not be part of the grading)

Student Name (PRINT)

George

Student Signature

Data management

DIT 032

Assignment 1

05/02/2018

Team Members:

1. Anders Karlsson
2. George Sarkisian

Number of pages in the assignment:

pages

4

Assignment 1

Students	George Sarkisian Anders Karlsson

Task		**Pts.**	**Comments**
Enhanced Entity_ Relationship (EER) model	Reading EER Diagrams (max 10 pts)		
	Creating an EER Diagram (max 50 pts)		
Relational Algebra (RA)	Formulating RA Expressions (max 30 pts)		
	Explaining RA Expressions (max 5 pts)		
Setup PostgreSQL	(max 5 pts)		

Total	

1.Enhanced Entity_Relationship (EER) Model

1.1. Reading EER Diagrams

EER1a

No they can't, because flower is a subclass of the plant and since neither plant nor flower has height attribute then the flower cant have height.

EER1b

No it is not. since the relationship between rose and garden entity is N:1 relation ROSE:GARDEN and the and rose connected to ORiGINATE relation with one line which mean there is possibility that the rose is not originated in garden.

EER1c

it has those attributes: Has_thorns, Sepal_size(Width, Height), Petal_size(Width, Height), {Color}, Plant_code, English_name.

and it has those relationships: ORIGINATE and PLANTED_IN.

Identifying keys are: Plant_code.

Cardinalities:

Relation between ROSE : GARDEN is N:1 and it CAN be 0

Relation between GARDEN : ROSE is 1:N and it CAN be 0 //we can delete this

Relation between FLOWER : GARDEN is N:1 and it CAN be 0

Relation between GARDEN : FLOWER IS 1:N and it CAN be 0 //we can delete this

EER2a

Yes it can. Because the relation between PROJECT:PART is M:N relation and it represented with one line so it can be 0.

EER2b

Yes it can. Because if we don't have supplier then the relation SUPPLY and CAN_SUPPLY between PART and SUPPLIER will not exist and we will still have the relation USER_IN and SUPPLY between PART and PROJECT.

EER2c

Yes it does. Because instance of means we are creating an object from the class SUPPLIER , PART and PROJECT. and since it is an object of that class it has all the relationships and the attributes of the class, based on that supplier1 CAN "SUPPLY" part1.

EER3a

Yes it can, because the relation between VEHICLE and his subclasses are represented with one line which means it CAN be 0, because that we can say there is possibility there is VEHICLE which is neither a car , bus , truck , nor convertible.

EER3b

Yes it can, based on the EER diagram we can see the inheritance may be overlapping; that means superclass VEHICLE CAN have 1 or more subclasses.

EER4a

City identification keys are:

City: the name of the city.
Country: the code of the country
Province: the name of the province

The name of the city is identification key because in the ER diagram we can see the name is underlined which makes it identification key

The code in Country and name in Province are identifying keys because we can see that city is a weak entity connected to an identifying relationship which means that we also have to use the identifying keys from that entity. In turn Province is another weak entity, which has an identifying relationship with Country, which means thats code is also an identifying key for the City.

Example city name Västerås the country code is SE and the province is Västmanland. so the keys are; Västerås , SE , Västmanland.

EER4b

A RIVER can ON N|one ISLAND
A RIVER can AT N|one CITY
A RIVER can OUT one|one LAKE
A RIVER can TO one|one ESTUARY
A RIVER can HAS one|one CITY
A RIVER can HAS one|one SOURCE
A RIVER can ISLAND_IN one|N ISLAND
A RIVER can IN N|one PROVINCE

1.2 Creating an EER Diagram

See the attachment.

2.Relational Algebra (RA)

2.1. Formulation RA Expressions

RA1. $\pi_{name}((\sigma(type = \text{`}coral\text{'}\ or\ type = \text{`}atoll\text{'})(Island))$

RA2. $\pi_{name,\ province,country,\ population}(\sigma(latitude => 66.33(city))$

RA3. $p_{(temp,\ country}(\sigma continent\ = \text{`}Europe\text{'}(encompasses))$

$p_{p(temp2,\ country}(\sigma organization\ = \text{`}Eu\text{'}(temp \bowtie IsMember \bowtie Organization\ ))$

$Temp\ -\ Temp2$

RA4. $\pi_{name}((\sigma name\ = \text{`}English\text{'}\ \&\ percentage > 50\ (Language)) \bowtie Country)$

RA5. $\pi_{name}(\sigma depth\ > 1000\ (Province \bowtie Sea \bowtie Lake))$

RA6. $\pi_{country}(\pi(pop)(\sigma(year\ = 2011)(countrypop) - \pi(pop)(\sigma(year{=}2001)(countrypop)(countrypop))$

RA7. $org\_count \leftarrow (organization\, f_{count}\ country\ (isMemeber)$

$avg\_GDP \leftarrow (country\, f_{avg}\ GDP\ (Economy))$

$tot \leftarrow\ ((org\_count)\ _{\bowtie\ org\_count > 1\ \&\ isMemeber.country = Economy.country}\ (avg\_GDP))$

$p(abbreviation,\ avg\_GDP)(tot_{\bowtie\ isMember.organization = organization.abbreviation}\ \ Organization)$

RA8. $count - lake\ \square\ lake\, f_{\ count}\ country(geo - lake)$

$\pi_{name}\ (\sigma_{\ count-lake > 1}\ (geo - lake))$

RA9. $count - of - lake\ \square\ (country\, f_{count}\ lake(geo - lake))$

$count - of - river \square\ (country\, f_{count} river(geo - river))$

$\pi_{country.name,count-of-lake,count-of-river}\ (geo - lake\ _{\ltimes geo-lake.country\ = country.name} Country,$

$geo - river_{\ltimes\ geo-river.country= country.name} country)$

RA10.

$all - mountains \leftarrow\ \ Mountain \bowtie_{Mountain.name = geo-mountain.mountain} geo - mounten$

$\sigma((name = 'SE'\ and\ elevation\, f_{max} Mountain\ )all - mountains)$

2.2. Understanding RA Expressions

U1.create a new table for airports with iatacode and everything except 66.33 which is arctic circle and rename it to MyAirport1

create a new table for airports with iatacode and every latitude and rename it MyAirport2

create new table from MyAirport1 joint with MyAirport2 with condition x1 > x2. but since the x1 and x2 is the same, IT WILL NOT RETURN ANYTHING.

U2. It groups countries with borderlengths > 100 by code and computes the count of codes (i.e. how many countries)

3.Setup PostgreSQL

```
 count
-------
  1318
(1 row)
```

follow_requests
Follow
Receive notification
USER
E-mail
Mark
Name
Opening_hours
Rating
Latitude
Location
Longitude
DESTINATION
confirmation_num
Make
duration
price
RESERVATION
check-in
check-out
date
list of destination
DAY_PLANS
To
Track
dedect
Create
End_date
Start_date
Trip
have
To
d
ID
EMAIL
massage
date
sender
Have
Refere
Confirmation
offer
HOTELS
amenities
gym
swiming_pool
sauna
MUSEUMS
exhibition
LANDMARKS
RESTAURANTS
Price_lvl
Take-away
catagorie
Mexican
Asian
Italian
room_nr
ROOM
room_size
INVOICE
invoice
date
invoice_id