**Data Warehousing and SQL : Assignment 2**

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1. **Identify the dimensions from each dimension table**
2. bed\_type

Dimensions: bed\_id, bed\_code  
Fact: bed\_desc

1. business

Dimension: ims\_org\_id, bed\_cluster\_id, business\_name  
Fact: ttl\_license\_beds, ttl\_census\_beds, ttl\_staffed\_beds

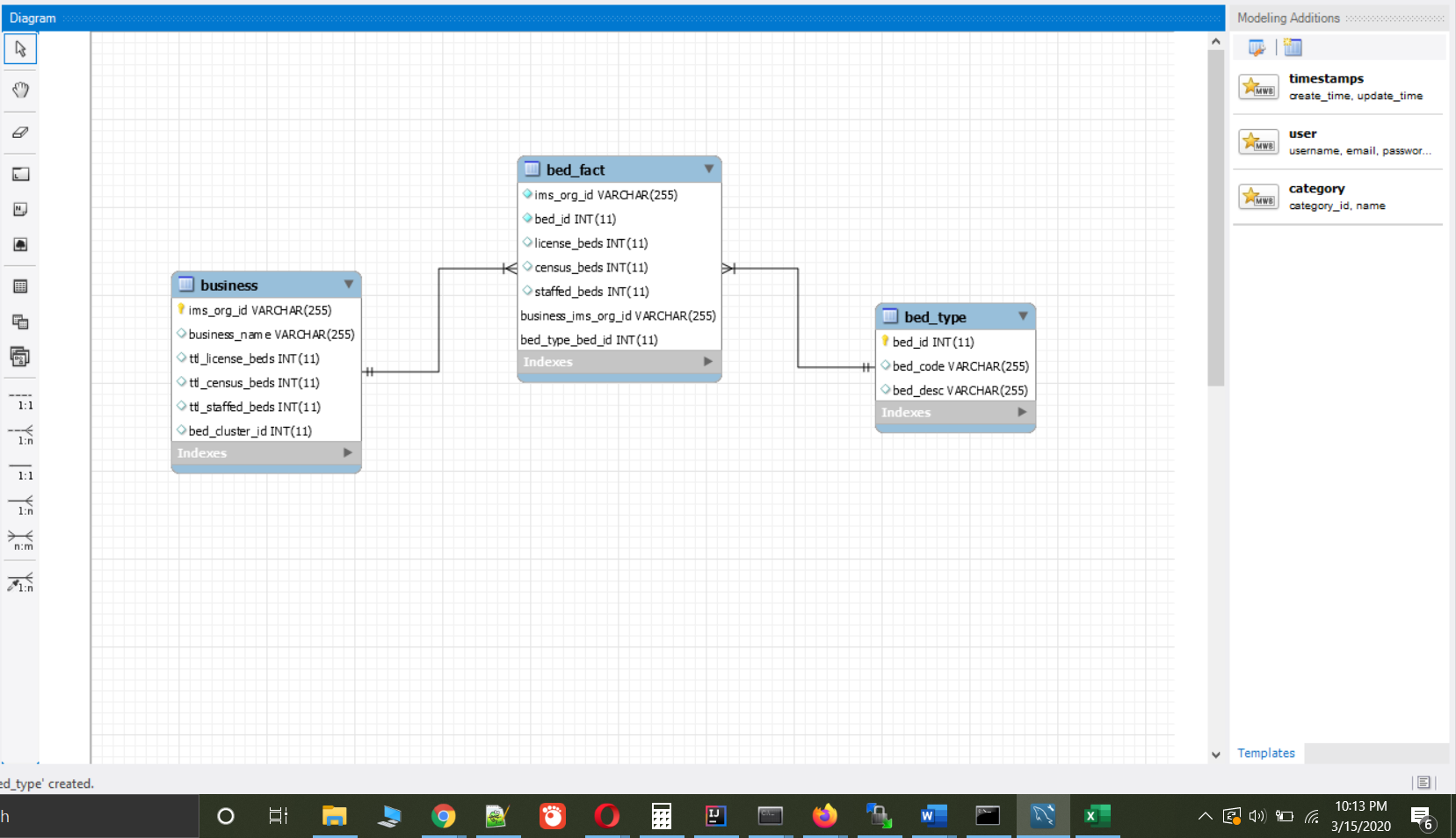
The fact table contains all the information of the keys and the dimension table contains all the information of that measure in the fact table.

1. **Identify the Facts variables from the single Fact Table**

bed\_fact

Dimension: ims\_org\_id, bed\_id  
Fact: license\_beds, census\_beds, staffed\_beds

1. **Sketch out a Star Schema using MySQL Workbench**



**4a)** **Analysis for Leadership**

-- 1

select b.business\_name as Hospital\_Name, sum(bf.license\_beds) as Total\_License\_Beds

from business as b

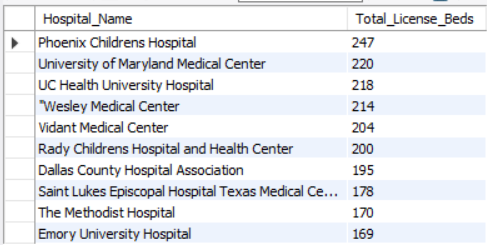
left join bed\_fact as bf on b.ims\_org\_id = bf.ims\_org\_id

where bf.bed\_id =4 or bf.bed\_id=15

group by b.ims\_org\_id

order by Total\_License\_Beds desc

limit 10;



-- 2

select b.business\_name as Hospital\_Name, sum(bf.census\_beds) as Total\_Census\_Beds

from bed\_fact bf

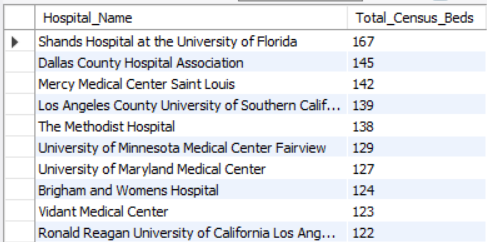
left join business b on b.ims\_org\_id = bf.ims\_org\_id

where bf.bed\_id =4 or bf.bed\_id=15

group by b.ims\_org\_id

order by Total\_Census\_Beds desc

limit 10;



-- 3

select b.business\_name as Hospital\_Name, sum(bf.staffed\_beds) as Total\_Staffed\_Beds

from bed\_fact bf

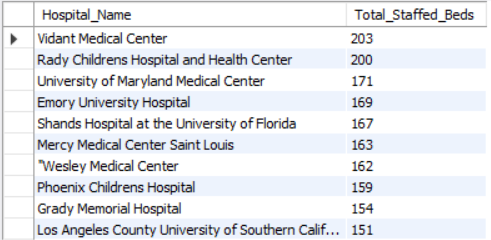
left join business b on b.ims\_org\_id = bf.ims\_org\_id

where bf.bed\_id =4 or bf.bed\_id=15

group by b.ims\_org\_id

order by Total\_Staffed\_Beds desc

limit 10;



**4b)** **Interpretation of findings**

In this approach I have created new table per the beds, license, census and staffed and then finally merged into one single table. With this we can understand at a glance which table have the maximum tables per bed. From this we also get the other bed capacity with the maximum beds per type.

drop table if exists table\_license;

create table table\_license

select b.business\_name as Hospital\_Name, sum(bf.license\_beds) as Total\_License\_Beds

from business as b

left join bed\_fact as bf on b.ims\_org\_id = bf.ims\_org\_id

where bf.bed\_id =4 or bf.bed\_id=15

group by b.ims\_org\_id

order by Total\_License\_Beds desc;

drop table if exists table\_census;

create table table\_census

select b.business\_name as Hospital\_Name, sum(bf.census\_beds) as Total\_Census\_Beds

from bed\_fact bf

left join business b on b.ims\_org\_id = bf.ims\_org\_id

where bf.bed\_id =4 or bf.bed\_id=15

group by b.ims\_org\_id

order by Total\_Census\_Beds desc;

drop table if exists table\_staffed;

create table table\_staffed

select b.business\_name as Hospital\_Name, sum(bf.staffed\_beds) as Total\_Staffed\_Beds

from bed\_fact bf

left join business b on b.ims\_org\_id = bf.ims\_org\_id

where bf.bed\_id =4 or bf.bed\_id=15

group by b.ims\_org\_id

order by Total\_Staffed\_Beds desc;

drop table if exists table\_merged;

create table table\_merged

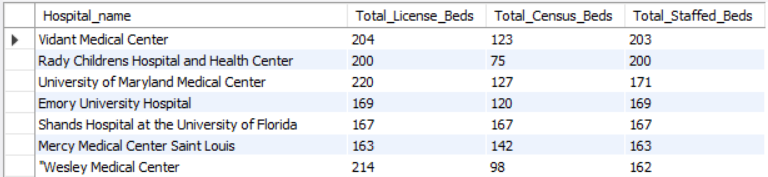
select tl.Hospital\_name, tl.Total\_License\_Beds, tc.Total\_Census\_Beds, ts.Total\_Staffed\_Beds from

((table\_license as tl

left join table\_census as tc on tc.Hospital\_Name = tl.Hospital\_Name)

left join table\_staffed as ts on ts.Hospital\_Name = tl.Hospital\_Name);

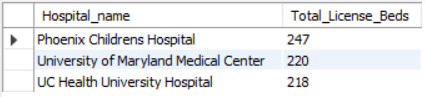
select \* from table\_merged;



select Hospital\_name, Total\_License\_Beds from table\_merged

order by Total\_License\_Beds desc

limit 3;



select Hospital\_name, Total\_Census\_Beds from table\_merged

order by Total\_Census\_Beds desc

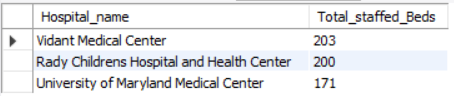
limit 3;



select Hospital\_name, Total\_staffed\_Beds from table\_merged

order by Total\_staffed\_Beds desc

limit 3;



**5a)** **Drill down investigation**

Same approach is followed as per 4a. Here as well the tables are merged into one table, so that we can query it and get the results as per the requirement.

drop table if exists table\_license;

create table table\_license

select b.business\_name as Hospital\_Name, sum(bf.license\_beds) as Total\_License\_Beds

from bed\_fact as bf

left join bed\_type as bt on bf.bed\_id=bt.bed\_id

left join business b on bf.ims\_org\_id = b.ims\_org\_id

where bf.bed\_id =4 or bf.bed\_id=15

group by bf.ims\_org\_id

having

count(bf.bed\_id)>1

order by Total\_License\_Beds desc;

drop table if exists table\_census;

create table table\_census

select b.business\_name as Hospital\_Name, sum(bf.census\_beds) as Total\_Census\_Beds

from bed\_fact as bf

left join bed\_type as bt on bf.bed\_id=bt.bed\_id

left join business b on bf.ims\_org\_id = b.ims\_org\_id

where bf.bed\_id =4 or bf.bed\_id=15

group by bf.ims\_org\_id

having

count(bf.bed\_id)>1

order by Total\_Census\_Beds desc;

drop table if exists table\_staffed;

create table table\_staffed

select b.business\_name as Hospital\_Name, sum(bf.staffed\_beds) as Total\_Staffed\_Beds

from bed\_fact as bf

left join bed\_type as bt on bf.bed\_id=bt.bed\_id

left join business b on bf.ims\_org\_id = b.ims\_org\_id

where bf.bed\_id =4 or bf.bed\_id=15

group by bf.ims\_org\_id

having

count(bf.bed\_id)>1

order by Total\_Staffed\_Beds desc;

drop table if exists table\_merged;

create table table\_merged

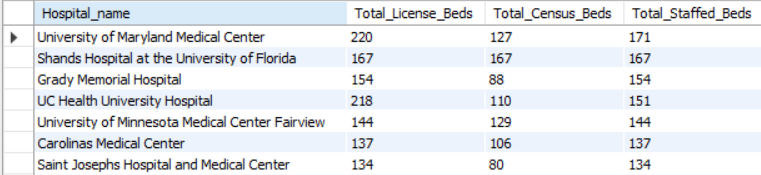
select tl.Hospital\_name, tl.Total\_License\_Beds, tc.Total\_Census\_Beds, ts.Total\_Staffed\_Beds from

((table\_license as tl

join table\_census as tc on tc.Hospital\_Name = tl.Hospital\_Name)

join table\_staffed as ts on ts.Hospital\_Name = tl.Hospital\_Name);

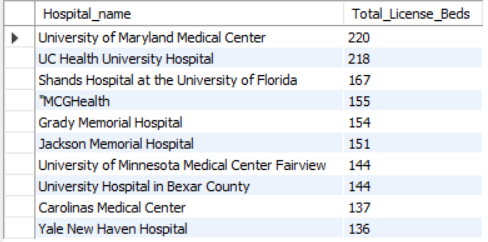
select \* from table\_merged;



select Hospital\_name, Total\_License\_Beds from table\_merged

order by Total\_license\_beds desc

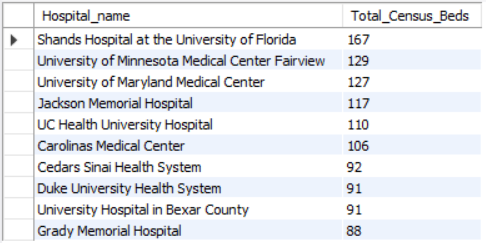
limit 10;



select Hospital\_name, Total\_Census\_Beds from table\_merged

order by Total\_Census\_Beds desc

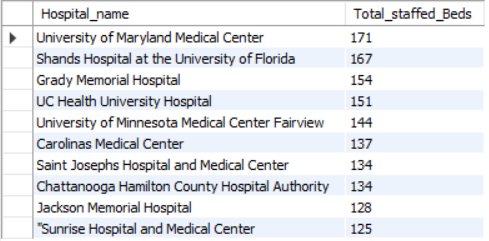
limit 10;



select Hospital\_name, Total\_staffed\_Beds from table\_merged

order by Total\_staffed\_Beds desc

limit 10;



**5b)** **Final recommendation**

From 5a analysis, the hospitals where the staffing is more than the census beds have more efficient outcome as the nurses to patient ratio is more. In such type of hospitals the census beds can be increased, given that they have license for more beds.

University of Maryland Medical Center,  
License beds: 220 , Census Beds: 127 , Staffed beds: 171

Grady Memorial Hospital,  
License beds: 154 , Census Beds: 88 , Staffed beds: 154

So the hospitals such as University of Maryland Medical Center and Grady Memorial Hospital can certainly increase the capacity of the beds as they have more staffed beds. This will be cost effective as they have already more staff and have license to put more bed as well. Grady Memorial Hospital has staff to cover all the license beds and have 88 census beds. They can certainly increase the census beds considering the staff to patient ratio and can serve more people at a time.

**Reference:**

Difference Between Fact Table and Dimension Table. (n.d.). Retrieved from <https://www.guru99.com/fact-table-vs-dimension-table.html>