**Logo

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**HOSPITAL NURSING INTERVENTION PILOT PROGRAM SQL ANALYSIS**

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***Introduction:***

In the given database, there are 3 tables, bed\_type, bed\_fact and business. In each of them, dimensions and facts are analyzed by visually representing them in the star schema, and further conducting analysis and providing interpretations.

1. ***Identifying Dimensions:***

*Dimension Table: bed\_type*

bed\_id (PK): Primary key, typically a dimension.

bed\_code (text): Descriptive attribute of the bed type.

bed\_desc (text): Detailed description of the bed type.

*Dimension Table: business*

ims\_org\_id (PK): Primary key, a unique identifier for each business entity.

business\_name (text): Name of the business.

bed\_cluster\_id (int): An identifier that might group beds into clusters or categories within the business.

1. ***Identifying facts:***

*Fact Table: bed\_fact*

license\_beds (int): Quantitative measure of licensed beds.

census\_beds (int): Quantitative measure of census beds.

staffed\_beds (int): Quantitative measure of staffed beds.

bed\_id (FK): Typically, a dimension, but treated as a fact here.

ims\_org\_id (FK): Typically, a dimension, but treated as a fact here.

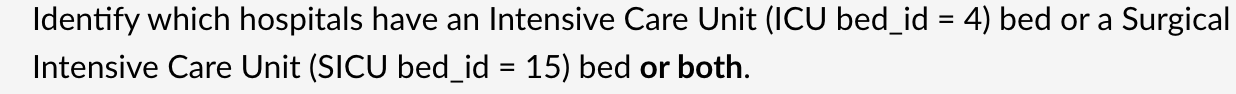
1. ***Star Schema Sketch:***

The ERD depicts a star schema with a one-to-many relationship between dimension tables and the fact table. The facts\_bed fact table, recording metrics like license\_beds, census\_beds, and staffed\_beds, serves as the schema's core. It has a one-to-many relationship with both dim\_business and dim\_bed\_type dimension tables; a single record in dim\_business or dim\_bed\_type can relate to multiple records in facts\_bed. The dim\_business table, identified by ims\_org\_id, details business entities, while dim\_bed\_type, identified by bed\_id, categorizes bed types. These relationships allow for aggregation and detailed analysis of bed data across various business entities and bed classifications, with each business and bed type potentially corresponding to multiple bed records. There are no many-to-many relationships present in this schema as typically seen in a star schema design.

A diagram of a data flow

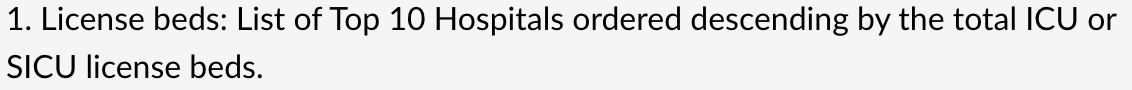
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***4a. Identifications:***



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A screenshot of a medical center

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2. List of top 10 hospitals with the census beds.

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3. List of top 10 hospitals with the staffed beds.

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***4b. Interpretations:***

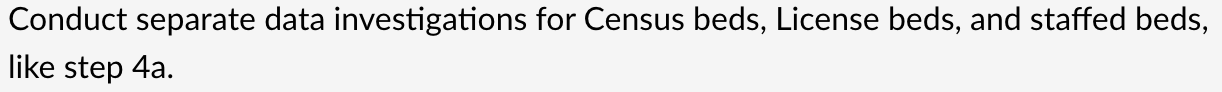
|  |  |  |
| --- | --- | --- |
| License\_beds | Census\_beds | Staffed\_beds |
| Phoenix Children Hospital (247) | Shands Hospital at the University of Florida (167) | Vidant Medical Center (203) |
| University of Maryland Medical Center (220) | Dallas County Hospital Association (145) | Rady Childrens Hospital and Health Center (200) |

The above table represents the top 2 hospitals based on the volume, it is shown with the name of the hospital and the count of it.

Vidant Medical Center, University of Maryland Medical Center, The Methodist Hospital

Phoenix Children's Hospital, Dallas County Hospital Association, Los Angeles County University of Southern California Healthcare Network *are the hospitals that are repeating in the three lists.*

***5a. Investigating Further:***

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The below screenshots reports contain the top 10 hospitals that has both ICU AND SICU Licensed, Census and Staffed beds.

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***5b. Final recommendations:***

* The top 2 hospitals *are different* in each type of beds.
* *Phoenix Children Hospital* has the highest count of license beds compared to all kind of beds which is 247, also, it’s present in the top 10 list of staffed beds with a count of 159.
* *Vidant Medical* Center appears on all three lists, indicating it has a significant number of licensed, census, and staffed beds. This suggests it's a large facility potentially operating at a high capacity, which may be ideal for a pilot program.
* *University of Maryland Medical Center* also appears on all three lists, showcasing its substantial infrastructure in terms of bed numbers and potential high patient volume.
* *The Methodist Hospital* is present on the lists for total licensed beds and total census beds, indicating a high capacity and utilization which could be relevant for interventions aimed at efficiency or patient care.
* *Dallas County Hospital Association* shows up on the lists for total licensed beds and total census beds, which could point to a significant role in serving the healthcare needs of Dallas County.
* The three lists overlap in several areas, with some hospitals appearing in all three categories that have both ICU and SICU beds are,

***University of Maryland Medical Center***

***Shands Hospital at the University of Florida***

UC Health University Hospital

University of Minnesota Medical Center Fairview

Jackson Memorial Hospital

References:

*Star Schema the complete reference*. (n.d.). Goodreads. <https://www.goodreads.com/en/book/show/9429688>