Assignment 2 Task 2

Objective:

Design a data warehouse such that it should be possible to easily implement the following classes of applications.

Classes of analytical applications:

- the total number of medical services performed per medical facility, per year, per month per day, per city and per medical worker,
- the total length of medical services per medical facility, per year, per month per day, per city and per medical worker,
- the average length of medical services per medical facility, per year, per month per day, per city and per medical worker,
- the total number of doctors/ paramedics/nurses involved in medical services, per year, per month per day, per medical facility, per city,
- the average time spent on medical services per year, month, day,
- the total costs of medical services per year, month, day, medical facility, and city.

Pre-requisite Data (to ignore):

1) Fact Entity, Measures Describing Fact Entity.

a. Fact Entity:
   1. Medical Service

b. Measures:
   1. Number of Services (for total number of medical services performed per facility)
   2. Length of Service (for the total length of medical services per facility)
   3. Average Length of Service (for the average length of medical services per facility)
   4. Total Num of Med Workers (for the total number of doctors/paramedics/ nurses involved in medical services)
   5. Average Time Spent (for the average time spend on medical services)
   6. Cost of Service (for the total costs of medical services)

2) Dimensions:

   a. Address Dimension: (address details)
   b. Person Dimension: (person connected to medical service)
   c. Patient Dimension: (receiving the service)
   d. Medical Worker Dimension: (providing the service)
   e. Administration Worker Dimension: (managing the service)
   f. Medical Facility Dimension: (where the service is taking place)
   g. Time Dimension: (when the service is happening)
   h. Service Type Dimension: (what type of service is provided)

3) Hierarchies over the dimensions:

   a. Address: No hierarchy
   b. Person: Person -> Address
   c. Patient: Patient -> Person -> Address
   d. Medical Worker: Medical Worker -> Person -> Address
   e. Administration Worker: Administration Worker -> Person -> Address
   f. Medical Facility: Medical Facility -> Suburb -> City
   g. Time: Day -> Month -> Year
   h. Service Type: No hierarchy

4) Descriptions(attributes) of all entity types:

a. Address: Street, City, State, Zip
b. Person: Name, Address
c. Patient: ID Number, Phone Number, Company Healthcare benefits
d. Medical Worker: Staff Number, Phone Number, Specialization, Credentials, Type
e. Administration Worker: Specialization, Assignment
f. Medical Facility: Staff Number, Address
g. Time: Day, Month, Year
h. Service Type: Diagnosis, Treatment, Checkup

5) Conceptual Schema: