Data Warehousing

Practical Task # 02 **Basics of MDB**

Instructions:

This task is designed to understand all the basic concepts of Multidimensional database (MDB). Task 2 is divided into three subtasks respectively. You will learn from basic to advance techniques to create Multidimensional database in this course. Therefore, to implement these tasks you have to understand class lectures well.

Task 2A

a. Implement the case study:

The E/R schema shown in Fig 1 is a part of health-care information system, it describes the admissions and their outcomes. Admission (entity ADMISSION) of a patient (entity PATIENT) and TOWN to a hospital is described by diagnosis (DIAGNOSIS, ADMISSIONSECONDARY-DIAGNOSIS), a ward in the hospital (WARD) where a patient is transferred, operation (OPERATION, OP-THEATRE) that was performed on a patient and doctors (DOCTOR) who diagnose, cure and operate on a patient. Primary keys are underlined and foreign keys are italicized. In such a diagram foreign keys are not entity attributes. They are the relational implementation of entity relationships and they are here only for the sake of clarity of the problem.

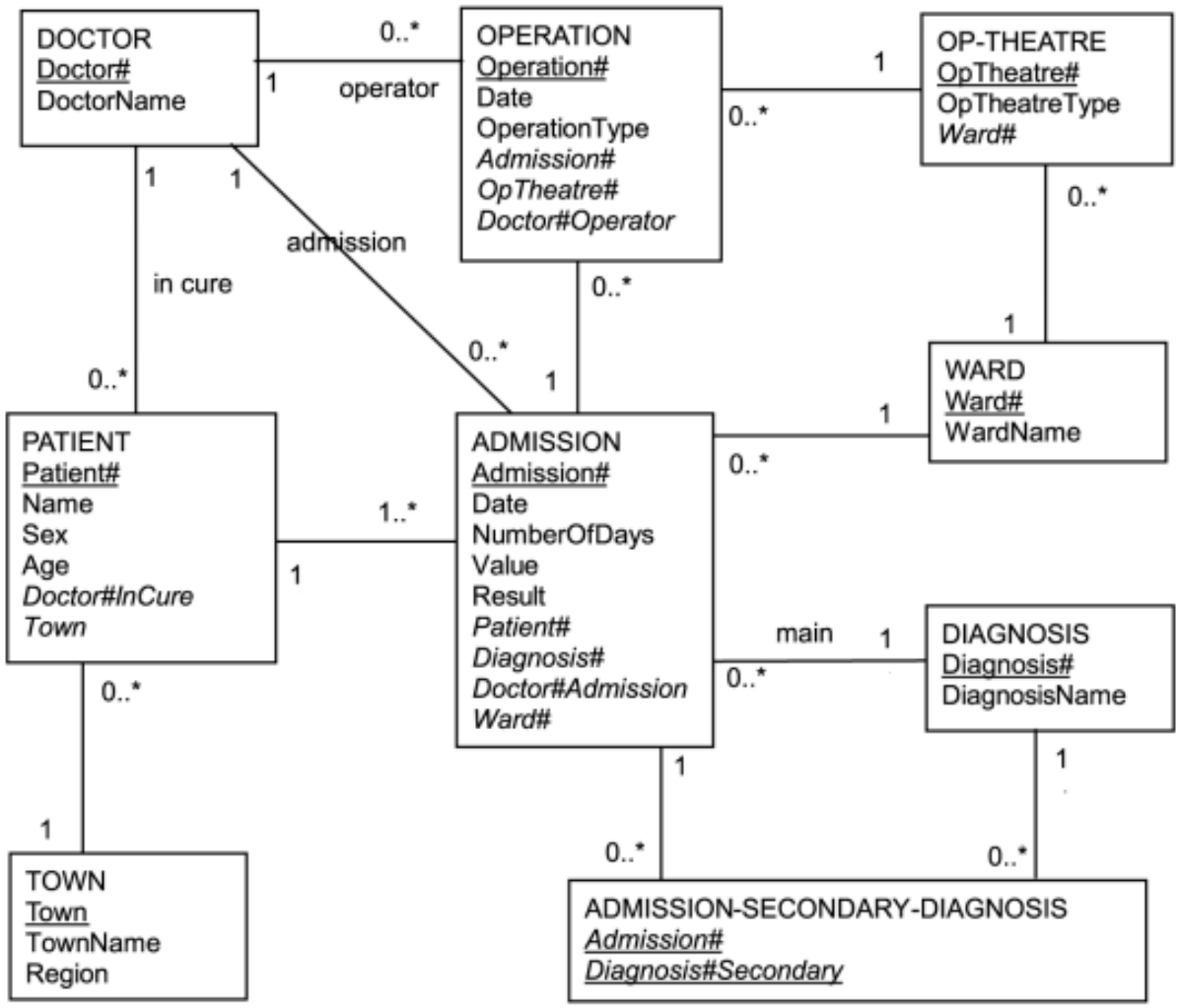

Figure 1- E/R Schema of Health Care Information system

Create a Relational database Schema in MySQL using the information given in Fig 1 and discover the followings for multidimensional database.

1. Discover and create fact tables with attributes you think are appropriate.
2. Discover and create dimension tables with attributes you think are appropriate.

b. Consider the sales table from a sales.sql file. And create a multidimensional cube based upon the source table. The MDB cube must be answering following queries:

a. The sales of each client for each quarter.
b. The summary of each client for each given year.
c. Sum of all money spend by each client in each quarter.
d. Summary of all money spend in each year.

Note: To implement this task you have to look into OLAP operations. And you can use any system software to implement it.