

MASTER 1 IN ECONOMICS
MASTER 1 ECONOMIE ET STATISTIQUE

Databases / Decision support / code : M1S112

Lundi 24 Juin 2013 ~ amphi MB1

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↳ durée conseillée pour traiter ce sujet : 1 heure

↳ ATTENTION : le nom de la matière et son code doivent être IMPERATIVEMENT recopiés sur la copie d'examen
Documents unauthorised (closed books)

A network of hospitals has built the following relational data warehouse:

HOSPITAL(CodeH, NameH, CityH, CodeD#)

DEPARTMENT(CodeD, NameD, RegionD)

SERVICE(CodeS, NameS, CodeH#, CodeD#)

MEDPERSONNEL(CodeMP, NameMP, TelMP, AddressMP, CityMP)

DOCTOR(CodeD, NameD, TelD, AddressD, CityD, Speciality)

WORKMedP(CodeMP#, CodeS#, Date, Hours)

WORKDoc(CodeD#, CodeS#, Date, Hours)

In this schema, primary key are underlined and foreign keys are suffixed by the # sign.

Each hospital is located in a city, a department and a region. Departments are located within regions according to the French administrative divisions). Hospitals host services. Each service is managed by a doctor (that may also work in the same service). Medical personnel and doctors work within these services (relations WorkMedP and WorkDoc). The warehouse stores the date when a person works (whether medical personnel or doctor) as well as the number of hours the person did that day. Moreover, each doctor has a speciality (Casualty, Surgery, Paediatrics, etc.). A doctor with no speciality has the speciality « General » (general practitioner).

Work to be done (Question 1: 8 points; question 2: 8 points; question 3: 4 points)

1. Hospital managers wish obtaining information about the employment within the hospitals. Give the SQL queries that answer the following questions on the tables of the data warehouse:

1.1. Name of the medical personnel that work in services where no doctors work.

1.2. Name of the hospitals, services and sum of the hours done by medical personnel within each service, only for services than have more than 300 hours.

2. This data warehouse is used as a support for the construction of a **multidimensional data mart** for the administrator of the hospital network. This one wishes to analyse the duration of the work done weekly, monthly and yearly of the medical personnel according to the service. All non temporal dimensions must have **all** the aggregation levels that can be extracted from the data warehouse, as well as **all** the associated information. The work duration (Hours) is in hours.

2.1. Provide the measure dictionary of this data mart (columns of the dictionary are Code, Description, Type and Extraction formula);

2.2. Provide a graphical representation of the conceptual schema of this data mart (use the graphical formalism used during course exercises)

3. From this data warehouse, the service that manages the hours done by the personnel uses an Excel workbook. The first sheet named **Data**, contains the following universal table:

	A	B	C	D	E	F	G
1	Hospital Name	Hospital City	Service	Doctor	Date	Hours	
2	Clinique du Louvre	Paris	Surgery	Durand	2012-05-01	8	
3	Clinique Saint Joseph	Paris	Surgery	Durand	2012-05-02	6	
4	Clinique Saint Joseph	Paris	Casualty	Dupont	2012-05-02	4	
5	Clinique Saint Joseph	Paris	Casualty	Dupont	2012-05-03	8	
6	Clinique Saint Joseph	Paris	Surgery	Dupont	2012-05-06	4	
7	Clinique du Louvre	Paris	Ophthalmology	Gallois	2012-05-05	5	
8	Clinique Arago	Paris	Surgery	Gallois	2012-05-06	6	
9	Clinique Saint Joseph	Paris	Ophthalmology	Gallois	2012-05-07	2	
10	Clinique du Louvre	Paris	Cardiology	Martin	2012-05-07	4	
11	Clinique du Louvre	Paris	Cardiology	Martin	2012-05-08	8	
12	Clinique Arago	Paris	Surgery	Martin	2012-05-09	10	

Using the data in this universal table, write formulas:

3.1. Using SUMIF (SOMME.SI) to get the total count of hours of Dr. Dupont.

3.2. That gives the maximum amount of hours performed in one day by a doctor (in the example displayed it should be 10 hours).