Project for Database Design

Phase III. Implementation

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0. Pre-Illumination

For clearly describing the implementation of our database, we separate this report into four sections. In Section 1 we normalize the original relational schema into third normal form and changed part of our relational schema because of some requirement from Phase III. We then explained what are changed. (If you didn't change your relational schema, just ignore this section.) In Section 2 we drew a dependency diagram for each relation table one by one. In Section 3 we began our process of building a database in Oracle using SQL statements, which contains three parts. Part one is the creation of database, including tables, all other structures as well as data type and format, Part two is the creation of views corresponding to five distinct requirements from Question d, and Part three is the creation of Queries to satisfy 14 requirements from Question e. Finally, a short summary is given at the end of this report.

1. Modified Relational Schema

Firstly, according to the requirement of phase III and with purpose to simplify the relation model for this database, we changed three things respect to original relational models. We will list them as follows. (Please list every modification for your relational model. If you didn't modify your relational schema, just delete this

section.)

The modified relational schema is shown in Figure 1. (If you didn't modify your relational schema, please just put your figure here.)

2. Dependency Diagram

We now draw a dependency diagram for each table from Figure 1 as follows:

2.1 Hospital Personnel (This is an Example)

There is only one attribute in the left-hand side of the functional dependencies, which is the key of relational schema Hospital Personnel, Person_ID. Therefore, every other attribute of this relational schema is functionally dependent on Person_ID. The dependency diagram is shown as Figure 3.

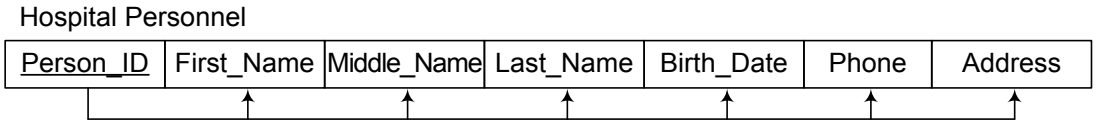

Figure 3. Dependency Diagram of Hospital Personnel

2.2 XXXXXX

Please list dependency diagram for every table using above forms.

2.XX Final Results

After drawing the dependency diagrams one after another, Figure XX shows the final results for the whole database including the ones who do not have any functional dependencies.

(Please insert your dependency diagram here)

Figure XX. Whole Dependency Diagram for XXX Database

3. Implementation of Database

3.1 Creation of Database with SQL Statements

After normalizing every relational schema into third normal form and modifying some details, it is the time to implement our database using SQL languages into Oracle.

3.1.1 Table Creation

Using SQL statement, we created XX tables as follows:

- **Hospital_Personnel: (This is an Example)**

```
CREATE TABLE Hospital_Personnel
 (  Person_ID        char(11),       not null,
    First_Name       varchar(20)     not null,
    Middle_Name      varchar(20)     not null,
    Last_Name        varchar(20)     not null,
    Birth_Date       date,
    Phone            char(12),
    Address          varchar(50),
PRIMARY KEY (Person_ID));
```

3.1.3 A Database State

We insert some values into the database in order to test our SQL create view and query statement. Here we just give one example of insertions as follows:

INSERTION OF TABLE HOSPITAL_PERSONNEL

---

insert into Hospital_Personnel

values ('000-00-0000', 'Emily', 'A', 'Navathe', date'1980-04-30',

---

Table 2 shows the states for Hospital Personnel database schemas. (Example)

Hospital_Personnel

Person_ID	FName	M	LName	Birth_Date	Phone	Address
000-00-0000	Emily	A	Navathe	1980-04-30	214-456-7626	2665 Main St., Denton, TX 75083
111-11-1111	Tom	B	Brown	1956-01-12	214-369-8759	263 Green St., Dallas, TX 75076
222-22-2222	Jimmy	C	Johnson	1980-02-03	469-765-9754	Apt.14, 3663 Beltline Blvd., Dallas, TX 75034'
333-33-3333	Sally	D	Smith	1976-03-26	214-436-6336	744 Walnut St., Dallas, TX 75074
444-44-4444	Jeniffer	E	Smack	1957-04-05	214-567-4767	467 Parker St., Plano, TX 75076
555-55-5555	Smuel	F	Sunder	1997-05-20	972-456-2552	18675 Chase Oak St., Frisco, TX 75034
666-66-6666	Raja	G	Farage	2000-06-03	972-832-9317	556 Spring St., Mosquite, TX 75087
777-77-7777	Kenneth	H	Chenault	1979-07-16	214-134-8643	2445 Wolf Creek St., Greenvill, TX 75056
888-88-8888	Brett	I	Cotton	1956-08-19	469-295-3694	24567 Walnut St., The Colony, TX 75032
999-99-9999	Adam	J	Daley	1935-09-24	469-478-3688	865 Park St., Garland, TX 75073'
101-01-0101	George	K	Cobb	1945-01-12	469-658-3978	263 Beltline Ave., Carleton, TX 75008
121-21-2121	Ivor	L	Page	1943-08-19	972-843-6823	1247 Floyd Rd., Richardson, TX 75075
131-31-3131	Joseph	M	Tomason	1969-11-17	972-987-9843	9454 RoyleLine Blvd., Irving, TX 75042
141-41-4141	Sara	N	Gaddis	1974-04-27	972-345-9734	345 King St., Fort Worth, TX 75023

(Please list all your table instance/data here.)

Till now we finished the process of creating tables and database states.

3.2 Creation of Views (Answer for Question d)

3.2.1 Employees-Hired (This is an Example)

This view returns the First Name, Last Name, and Date Hired of all Hospital Employees

```
CREAT VIEW    Employees-Hired
AS  SELECT    First_Name, Last_Name, Date_Hired
    FROM      Hospital_Personnel, Employees
    WHERE     Person_ID=Emp_ID
```

3.3 Creation of SQL Queries (Answer for Question f)

Now we give out the SQL Queries for each of 14 questions listed in Question e as follows:

3.3.1 For each Job Class list all the staff members belonging to this class. (This is an example)

```
SELECT    Job_Class, Emp_Type, First_Name, Last_Name
FROM      Employees, Hospital_Personnel
WHERE     Person_ID=Emp_ID AND Emp_type = 'S'
ORDER BY  Job_Class;
```

4. Conclusion

In this report we modified the EER diagram and relational schemas for XXX Database according to the requirement of Phase III. We also give dependency diagram for each relational schema in database. Then we created tables for each relational schema and write the SQL statements for the views and queries listed in Question d and Question e.