**CPSC 304**

**2014 Summer Term 1**

**Project Part \_\_Final Report\_\_**

**Group Name:  A Group**

**Group Members:**

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**Project Description**

Our project uses a blend of PHP and MySQL to deliver a database system for hospitals and their members through a clean front-end. The system utilizes efficient querying to display database content and, it allows users to search for specific information - a useful attribute for a database that we predict could become massive.

The goal of our project was to provide an organized interface for important information and our database system accomplishes this. Different tabs segregate different categories of information and display them in modifiable tables. Patient and staff members are able to register into the system and the server checks input information to retain consistency. In addition, appointment information for each user is stored and users can view them on demand. Users are also able to find hospital members, the number of rooms in a hospital, and the names of patients requiring specific procedures. The project uses different types of queries to accomplish its tasks and the entire backend is created through MySQL.

All in all, the project was a great learning experience for all of the members and it clears all the required checkpoints. With more time, we could have implemented additional feautures but we also like it as is.

Below is our final ER-model. We removed some constraints on hospital-staff and physician-office since we figured they can exist without each other. We also reduced the Procedures with relationships to Room instead of both Office and SurgeryRoom to reduce redundancy.

**List of Queries Used**

Home

mysql\_query("SELECT DISTINCT \* FROM staff where staff.name LIKE '%$psin%'");

mysql\_query("SELECT DISTINCT \* FROM patient where patient.name LIKE '%$psin%'");

mysql\_query("SELECT P.healthid, P.name, PR.proid, PR.description FROM patient P, procedures PR where PR.proid = $hid AND P.healthid = PR.healthid");

mysql\_query("SELECT R.name,count(\*),R.city FROM room R where R.city LIKE '%$cityid%' GROUP BY R.name");

Staff

$query\_staff = "SELECT s.sin, s.name, s.phonenum, s.address, s.city, s.postal\_code, s.province FROM staff s, nurse n WHERE s.sin = n.sin;";

$query\_staff = " SELECT s.sin, s.name, s.phonenum, s.address, s.city, s.postal\_code, s.province FROM staff s, physician p WHERE s.sin = p.sin;";

$query\_staff = "SELECT s.sin, s.name, s.phonenum, s.address, s.city, s.postal\_code, s.province FROM staff s, janitor j WHERE s.sin = j.sin;";

$query\_staff = "SELECT s.sin, s.name, s.phonenum, s.address, s.city, s.postal\_code, s.province FROM staff s, receptionist r WHERE s.sin = r.sin;";

$query\_staff = "SELECT s.sin, s.name, s.phonenum, s.address, s.city, s.postal\_code, s.province FROM staff s ";

Room

$query = "SELECT r.name as hname, r.roomnum as roomnum, r.level as level FROM Room r WHERE r.city = '$hcity' and r.name = '$hname';";

Register

$query="INSERT INTO Patient(healthid, healthinfo, name, phonenum ,address, city, postal\_code, province) VALUES ($healthid,'$healthinfo','$name', '$phonenum', '$address', '$city', '$postal\_code', '$province');";

$query = "INSERT INTO Staff(sin,name,phonenum,address,city,postal\_code,province) VALUES ($sin, '$name', '$phonenum', '$address', '$city', '$postal\_code', '$province');";

$query="INSERT INTO Procedures(proid,healthid,sin,description,date,time) VALUES ($proid, $healthid, $sin, '$description', '$date', '$time');";

$query = "INSERT INTO procedureInRoom(proid,level,roomnum,name,city) VALUES ($proid,$level,'$roomnum','$name','$city');";

Physician

mysql\_query("SELECT DISTINCT \* FROM physician inner join staff where physician.sin = staff.sin;");

pedit

$query = "UPDATE patient SET name = '$newname', address = '$address', city = '$city', province = '$province', postal\_code = '$postal\_code', phonenum = '$pn' WHERE healthid = $hid;";

$query = "UPDATE staff SET name = '$newname', address = '$address', city = '$city', province = '$province', postal\_code = '$postal\_code', phonenum = '$pn' WHERE sin = $sin;";

$query1 = "UPDATE staff SET name = '$newname', address = '$address', city = '$city', province = '$province', postal\_code = '$postal\_code', phonenum = '$pn' WHERE sin = $sin;";

$query2 = "UPDATE physician SET specialty = '$specialty', office\_room = $office\_room, office\_name = '$office\_name', office\_level = $office\_level, office\_city = '$office\_city' WHERE sin = $sin;";

Patient

mysql\_query("SELECT \* FROM patient;");

Appointment

$query\_appoint = "SELECT pr.date, pr.time, pr.description, pir.level, pir.roomnum, pir.name, pir.city, s.name as pname from procedures pr, ProcedureInRoom pir, staff s where pr.healthid = $sin and pir.proid = pr.proid and s.sin = pr.sin";

Hospital

mysql\_query("SELECT h.name, h.address, h.city, h.postal\_code, h.province, count(\*) as cnt FROM hospital h, WorksAt w WHERE h.city = w.city and h.name = w.name GROUP BY h.name, h.city");

$query = "select t.wcity as tCity, t.wProvince as tProvince, t.cnt as tcnt from (select w.city as wCity, h.province as wProvince, count(\*) as cnt from worksat w, hospital h where h.city = w.city and h.name = w.name group by w.city, h.province) as t where t.cnt ";

$query = "select t.wcity as tCity, t.wProvince as tProvince, t.cnt as tcnt from (select w.city as wCity, h.province as wProvince, count(\*) as cnt

from worksat w, hospital h

where h.city = w.city and h.name = w.name

group by w.city, h.province) as t

where t.cnt ";

if($\_POST["amount"] == "max"){

$query .= ">= ";

} else {

$query .= "<= ";

}

$query .= "ALL(select c.cnt from (select w.city as wCity, h.province as wProvince, count(\*) as cnt from worksat w, hospital h where h.city = w.city and h.name = w.name group by w.city, h.province) as c);";

**Functional Dependency**

Patients(heathid, healthinfo, name, address, phone #, city, postal code, province)

healthid -> healthinfo, name, address, phone #, city, postal code, province

postal code -> province

Not in BCNF

Staff(SIN, name, phone #, address, city, postal code, province)

SIN -> name, phone #, city, postal code, province

postal code -> province

Not in BCNF

Hospital(name, city, address, postal code, province)

name, city -> address, postal code, province

postal code -> province

Not in BCNF

Physicians(SIN, specialty, level, room #, name, city)

SIN -> specialty, level, room#, name, city

In BCNF

PatientStaysIn(healthid, room #, level, name, city)

healthid -> room#, level, name, city

In BCNF

WorksAt(SIN, name, city)

SIN -> name, city

In BCNF

Procedure (proid, healthid, SIN, description, time, date)

proid -> heatlhid, SIN, description, time, date

In BCNF

Rooms(level, room #, name, city)

No FDs

Office(level, room #, name, city)

No FDs

SurgeryRoom(level, room #, name, city)

No FDs

All these are in BCNF

Nurses(SIN)

Janitor(SIN)

Receptionist(SIN)

Security(SIN)

