

CSC 675-01

Course Project Phase 2

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/* create database hospital system database */

CREATE DATABASE hospitalsys;

/* Use hospital system database*/

USE hospitalsys;

/* Entity */

CREATE TABLE doctor(
docID int NOT NULL,
docName varchar(100),
specialization varchar(100),
salary int,
primary key (docID)
);

CREATE TABLE hospital(
hospID int NOT NULL,
hosName varchar(50),
hosCity varchar(100),
hosAddress varchar(50),
primary key (hospID)
);

CREATE TABLE patient(
patID int NOT NULL,
patName varchar(50),
patDiagnosis varchar(50),
patAddress varchar(50),
primary key (patID)
);

```
CREATE TABLE medicalRecord(  
  recordID int NOT NULL,  
  ExaminationDate Date,  
  problem varchar(50),  
  primary key (recordID)  
);
```

```
CREATE TABLE has_hos_doc(  
  docID int NOT NULL,  
  hospID int NOT NULL,  
  primary key (docID, hospID),  
  foreign key (docID) references doctor(docID),  
  foreign key (hospID) references hospital(hospID)  
);
```

```
CREATE TABLE has_patient_record (  
  patID int NOT NULL,  
  recordID int NOT NULL,  
  primary key (patID, recordID),  
  foreign key (patID) references patient(patID),  
  foreign key (recordID) references medicalrecord(recordID)  
);
```

```
CREATE TABLE admit_relation (  
  patID int NOT NULL,  
  hospID int NOT NULL,  
  primary key (patID, hospID),  
  foreign key (patID) references patient(patID),  
  foreign key (hospID) references hospital(hospID)  
);
```

/*insert data into doctor table*/

```
INSERT INTO `hospitalsys`.`doctor` (`docID`, `docName`, `specialization`, `salary`) VALUES ('12345', 'Kurt', 'Cardiology', '525311');
INSERT INTO `hospitalsys`.`doctor` (`docID`, `docName`, `specialization`, `salary`) VALUES ('12346', 'James', 'Orthopedic', '341231');
INSERT INTO `hospitalsys`.`doctor` (`docID`, `docName`, `specialization`, `salary`) VALUES ('12347', 'Bob', 'Gastroenterology', '131233');
INSERT INTO `hospitalsys`.`doctor` (`docID`, `docName`, `specialization`, `salary`) VALUES ('12348', 'Billy', 'Urology', '123122');
INSERT INTO `hospitalsys`.`doctor` (`docID`, `docName`, `specialization`, `salary`) VALUES ('12349', 'Ben', 'Podiatry', '90000');
```

/*insert data into hospital table*/

```
INSERT INTO `hospitalsys`.`hospital` (`hosCity`, `hosplD`, `hosAddress`, `hosName`) VALUES ('San Francisco', '123', '1800 Sunset Street', 'Kaiser');
INSERT INTO `hospitalsys`.`hospital` (`hosCity`, `hosplD`, `hosAddress`, `hosName`) VALUES ('San Jose', '124', '1800 Dawn Street', 'Cross');
```

/*insert data into patient table*/

```
INSERT INTO `hospitalsys`.`patient` (`patID`, `patName`, `patDiagnosis`, `patAddress`) VALUES ('54321', 'James', 'Asthma', '18 Darwin Street');
INSERT INTO `hospitalsys`.`patient` (`patID`, `patName`, `patDiagnosis`, `patAddress`) VALUES ('54322', 'Karl', 'Asthma', '28 Darwin Street');
INSERT INTO `hospitalsys`.`patient` (`patID`, `patName`, `patDiagnosis`, `patAddress`) VALUES ('54323', 'Bob', 'Bronchitis', '12 Kame Street');
INSERT INTO `hospitalsys`.`patient` (`patID`, `patName`, `patDiagnosis`, `patAddress`) VALUES ('54324', 'Bill', 'Bronchitis', '32 Kame Street');
```

/*insert data into medicalrecord table*/

```
INSERT INTO `hospitalsys`.`medicalrecord` (`recordID`, `ExaminationDate`, `problem`) VALUES ('321', '2018-01-02 12:30:11', 'Asthma');
INSERT INTO `hospitalsys`.`medicalrecord` (`recordID`, `ExaminationDate`, `problem`) VALUES ('323', '2018-02-02 12:30:11', 'Fever');
INSERT INTO `hospitalsys`.`medicalrecord` (`recordID`, `ExaminationDate`, `problem`) VALUES ('322', '2018-01-03 12:30:11', 'Asthma');
INSERT INTO `hospitalsys`.`medicalrecord` (`recordID`, `ExaminationDate`, `problem`) VALUES ('3211', '2018-01-05 12:30:11', 'Asthma');
INSERT INTO `hospitalsys`.`medicalrecord` (`recordID`, `ExaminationDate`, `problem`) VALUES ('3212', '2018-01-08 5:30:11', 'Asthma');
INSERT INTO `hospitalsys`.`medicalrecord` (`recordID`, `ExaminationDate`, `problem`) VALUES ('3213', '2018-01-11 1:30:11', 'Fever');
```

/*insert data into has_hos_doc table*/

```
INSERT INTO `hospitalsys`.`has_hos_doc` (`docID`, `hosplD`) VALUES ('12345', '123');
INSERT INTO `hospitalsys`.`has_hos_doc` (`docID`, `hosplD`) VALUES ('12346', '123');
INSERT INTO `hospitalsys`.`has_hos_doc` (`docID`, `hosplD`) VALUES ('12347', '123');
INSERT INTO `hospitalsys`.`has_hos_doc` (`docID`, `hosplD`) VALUES ('12348', '123');
INSERT INTO `hospitalsys`.`has_hos_doc` (`docID`, `hosplD`) VALUES ('12349', '123');
```

/*insert data into has_patient_record table*/

```
INSERT INTO `hospitalsys`.`has_patient_record` (`patID`, `recordID`) VALUES ('54321', '321');
INSERT INTO `hospitalsys`.`has_patient_record` (`patID`, `recordID`) VALUES ('54323', '323');
INSERT INTO `hospitalsys`.`has_patient_record` (`patID`, `recordID`) VALUES ('54322', '322');
INSERT INTO `hospitalsys`.`has_patient_record` (`patID`, `recordID`) VALUES ('54321', '3211');
INSERT INTO `hospitalsys`.`has_patient_record` (`patID`, `recordID`) VALUES ('54321', '3212');
INSERT INTO `hospitalsys`.`has_patient_record` (`patID`, `recordID`) VALUES ('54321', '3213');
```

/*insert data into admit_relation table*/

```
INSERT INTO `hospitalsys`.`admit_relation`(`patID`, `hosplD`) VALUES ('54321', '123');
INSERT INTO `hospitalsys`.`admit_relation`(`patID`, `hosplD`) VALUES ('54322', '123');
INSERT INTO `hospitalsys`.`admit_relation`(`patID`, `hosplD`) VALUES ('54323', '123');
INSERT INTO `hospitalsys`.`admit_relation`(`patID`, `hosplD`) VALUES ('54324', '123');
```

/*Create index*/

```
CREATE INDEX pat_id ON patient (patID);
CREATE INDEX medrec_id ON medicalrecord (recordID);
```

/*Create views*/

```
USE hospitalsys;
CREATE VIEW doctor_view
AS SELECT docName, salary
FROM doctor
```

/* Create patient view*/

```
USE hospitalsys;
CREATE VIEW patient_view
AS SELECT patName, patAddress
FROM patient
```

/* list the patients name and address on view*/

```
SELECT * FROM hospitalsys.patient_view;
```

patient_view

- patName
- patAddress

	patName	patAddress
	James	18 Darwin Stree
	Karl	28 Darwin Stree
	Bob	12 Kame Street
	Bill	32 Kame Street

At least 2 queries involving GROUP BY, HAVING, and aggregate

/*find how many patients have diagnosis of asthma*/

```
SELECT P.patDiagnosis, count(*)  
FROM patient P  
GROUP BY P.patDiagnosis  
HAVING P.patDiagnosis = 'Asthma' ;
```

	patDiagnosis	count(*)
	Asthma	2

/*find the doctors with over 100000 salary*/

```
SELECT D.docName, D.salary  
FROM doctor D  
GROUP BY D.docName  
HAVING D.salary > 100000;
```

	docName	salary
	Billv	123122
	Bob	131233
	James	341231
	Kurt	525311

At least 2 nested queries involving IN, EXIST, op ANY, op ALL...

/* Find the doctor whose salary is greater than that of some doctor name "Bob" */

```
SELECT *
FROM doctor D
WHERE D.salary > ANY (SELECT DW.salary
                      FROM doctor DW
                      WHERE DW.docName= 'Bob');
```

docID	docName	specialization	salary	Hospital_hospID
12345	Kurt	Cardiologv	525311	123
12346	James	Orthopedic	341231	123
NULL	NULL	NULL	NULL	NULL

/* Find names of patient whose had Fever*/

```
SELECT P.patName
FROM patient P
WHERE P.patID IN ( SELECT M.Patient_patID
                  FROM medicalrecord M
                  WHERE M.problem = "Fever");
```

patName
James
Bob

/* Find names of patient who have more than two medical record*/

```
SELECT P.patName
FROM patient P
WHERE Exists (( SELECT M.patID
                FROM has_patient_record M
                WHERE M.patID = P.patID
                Group By patID
                Having count(*) > 2));
```

patName
James