**Class: CS331**

**Class No: 50518**

**Section: 32**

**Name of Course: Database Systems**

**Project Name: Electronic Medical Records Database**

**Project #: 1**

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**Student ID: 2562**

**Date:**

**Due Date: 10/07/19**

**Cut-Off: 10/12/19**

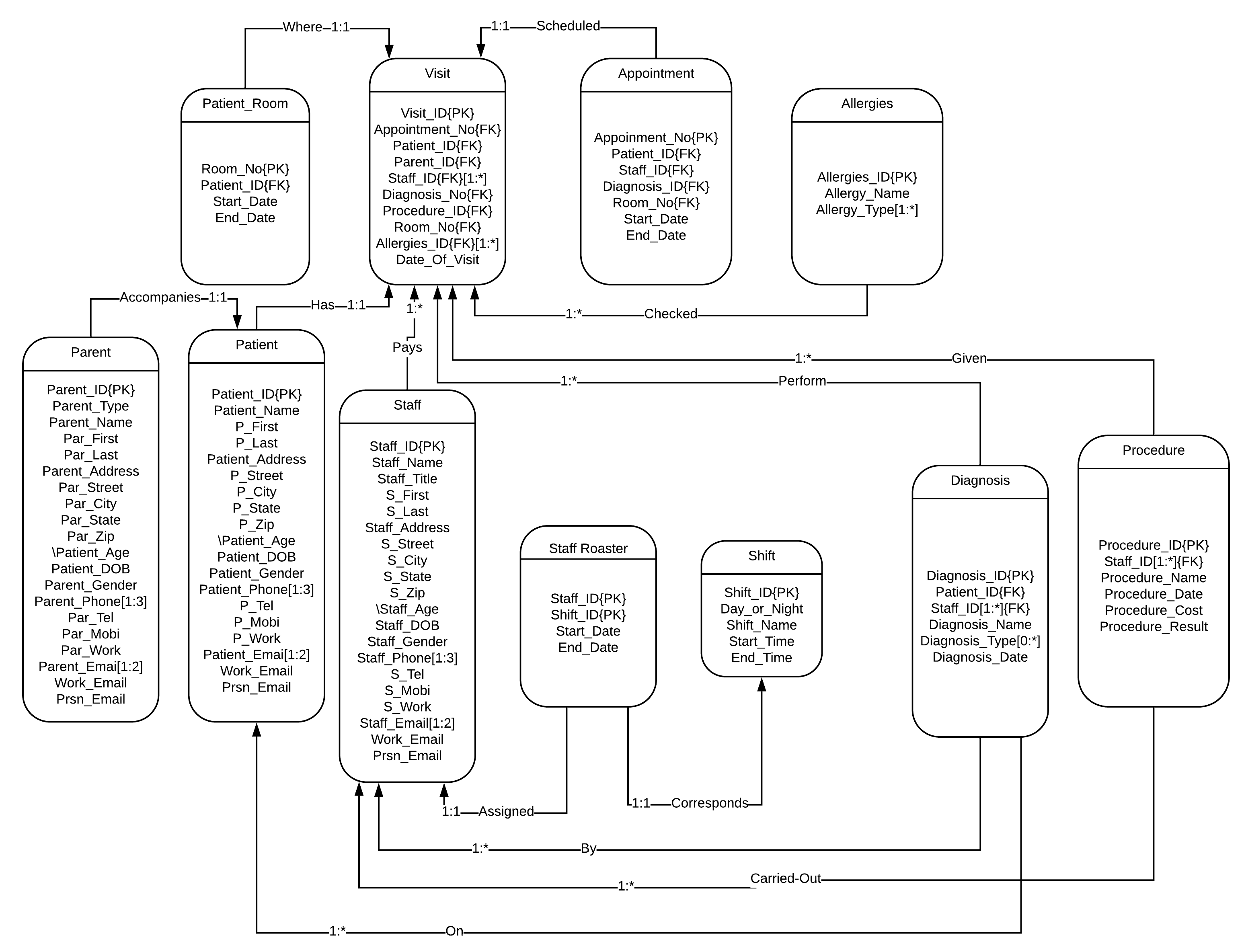
**Objective:**

**Objective 1:** Create a database to manage patient medical records

**Objective 2:** Create a UML diagram

**Objective 3:** Create searches and output using relational algebra

UML Design



Convert UML to Relations

Patient (PATIENT\_ID, P\_First, P\_Last, P\_Street, P\_City, P\_State, P\_Zip, Patient\_Age, Patient\_DOB, Patient\_Gender)

Patient\_Phone (PATIENT\_ID, PHONE)

Patient\_Email (PATIENT\_ID, EMAIL)

Parent (PARENT\_ID, Parent\_Type, Par\_First, Par\_Last, Par\_Street, Par\_City, Par\_State, Par\_Zip, Parent\_Age, Parent\_DOB, Parent\_Gender)

Parent\_Phone (PARENT\_ID, PHONE)

Parent\_Email (PARENT\_ID, EMAIL)

Patient\_Room (ROOM\_NO, Patient\_ID, Start\_Date, End\_Date)

Staff (STAFF\_ID, Staff\_Title, S\_First, S\_Last, S\_Street, S\_City, S\_State, S\_Zip, Staff\_Age, Staff\_Gender)

Staff\_Phone (STAFF\_ID, PHONE)

Staff\_Email (STAFF\_ID, EMAIL)

Shift (SHIFT\_ID, Day\_or\_Night, Shift\_Name, Start\_Time, End\_Time)

Staff\_Roaster (STAFF\_ID, SHIFT\_ID, Start\_Date, End\_Date)

Diagnosis (DIAGNOSIS\_ID, Patient\_ID, Diagnosis\_Date)

Diagnose\_By\_Staff (DIAGNOSIS\_ID, STAFF\_ID)

Diagnosis\_Type (DIAGNOSIS\_ID, Type\_ID)

Procedure (PROCEDURE\_ID, Procedure\_Name, Prcedure\_Date, Procedure\_Cost, Procedure\_Result)

Procedure\_Staff (PROCEDURE\_ID, STAFF\_ID)

Convert UML to Relations(Cont’d)

Appointment (APPOINTMENT\_ID, Patient\_ID, Staff\_ID, Diagnosis\_ID, Room\_No, Start\_Date, End\_Date)

Allergies (ALLERGIES\_ID, Allergy\_Name)

Allergies\_Type (ALLERGIES\_ID, TYPE\_ID)

Visit (VISIT\_ID, Appoinment\_No, Patient\_ID, Parent\_ID, Diagnosis\_ID, Procedure\_ID, Room\_No, Date\_Of\_Visit)

Staff\_Visit (VISIT\_ID, STAFF\_ID)

Allergies\_On\_Visit (VISIT, ALLERGIES\_ID)

Q&A

Q1: Identify procedures performed for patient John Carter visit this month. Display the patient name, procedure name, date of procedure and procedure cost.

A:

FindName

FindMonth

Result

Q2: Identify patients that have never received the Smallpox Vaccine. Display the patient age, date of birth, and address.

A:

UnvaccinatedPatient

Q3: Identify the procedures performed by a Cardiologist last year. Display the procedure name, procedure date, and patient name.

A:

Result

Q4: Identify patients with an abnormal Red Cell Count yesterday. Display the patient name, procedure name, and procedure result.

A:

Q5: Identify patients who were diagnosed with cancer last month and are being treated with chemotherapy. Display the patient name and treatment.

A: CancerLastMonth

ChemotherapyTreated

PatientsToTreatment

Result

Q6: Identify staffs who have not performed any procedures in the last 2-year. Display the staff name.

A: ProceduresInLast2Years

PerformingStaffs

UnderperformingStaffs

Result

Q7: Identify patients who have not visited with medical staff in the last 10-years. Display the patient name and the patient email.

A: FrequentPatients

InfrequentPatients

Result

Q8: Identify the number of procedures performed in the last week. Display two columns: Procedure name and number of procedures. Display one row for each distinct procedure name. Use an aggregate function and grouping operation to answer this question.

A: LastWeek

LastWeekProcedures

Procedure\_Name

Q9: Identify the number of patients who had performed procedures in the last 3-Years. Display three columns: patient name, number of procedures, and total cost. Display one row for each distinct patient name. Use an Aggregate Function or Grouping Operation to answer this question

A: Last3Years

Last3YearsProcedures

PatientsToProcedures

P\_First, P\_Last

Q10: Identify the revenue generated by each procedure in the last 2-weeks. Display three columns: procedure name, number of procedures, and total cost. Display one row for each distinct procedure name. Use an Aggregate Function or Grouping Operation to answer this question.

A: Last2Weeks

Procedure\_Name