Fitchburg State University
CSC7500 – Database Design
Fall 2017
Final Exam

Please submit this using Blackboard.

Section I: Database Design (50 points)

Fitchburg ABA Clinic wants to create a database with the following entities:

- Employee
    - EmpID
    - Name
    - Position
    - Salary
    - DateofHire
    - DateofBirth
    - Age
    - Skills
    - Degrees (i.e. M.S., Ph.D)
    - Certifications (i.e. BCBA, SLP)

- Client
    - ClientID
    - FirstName
    - LastName
    - DateofBirth
    - Age
    - Allergies

- Diagnosis
    - DiagnosisCode
    - Description

- Parent
    - ParentID
    - FirstName
    - LastName
    - Address
        - Street
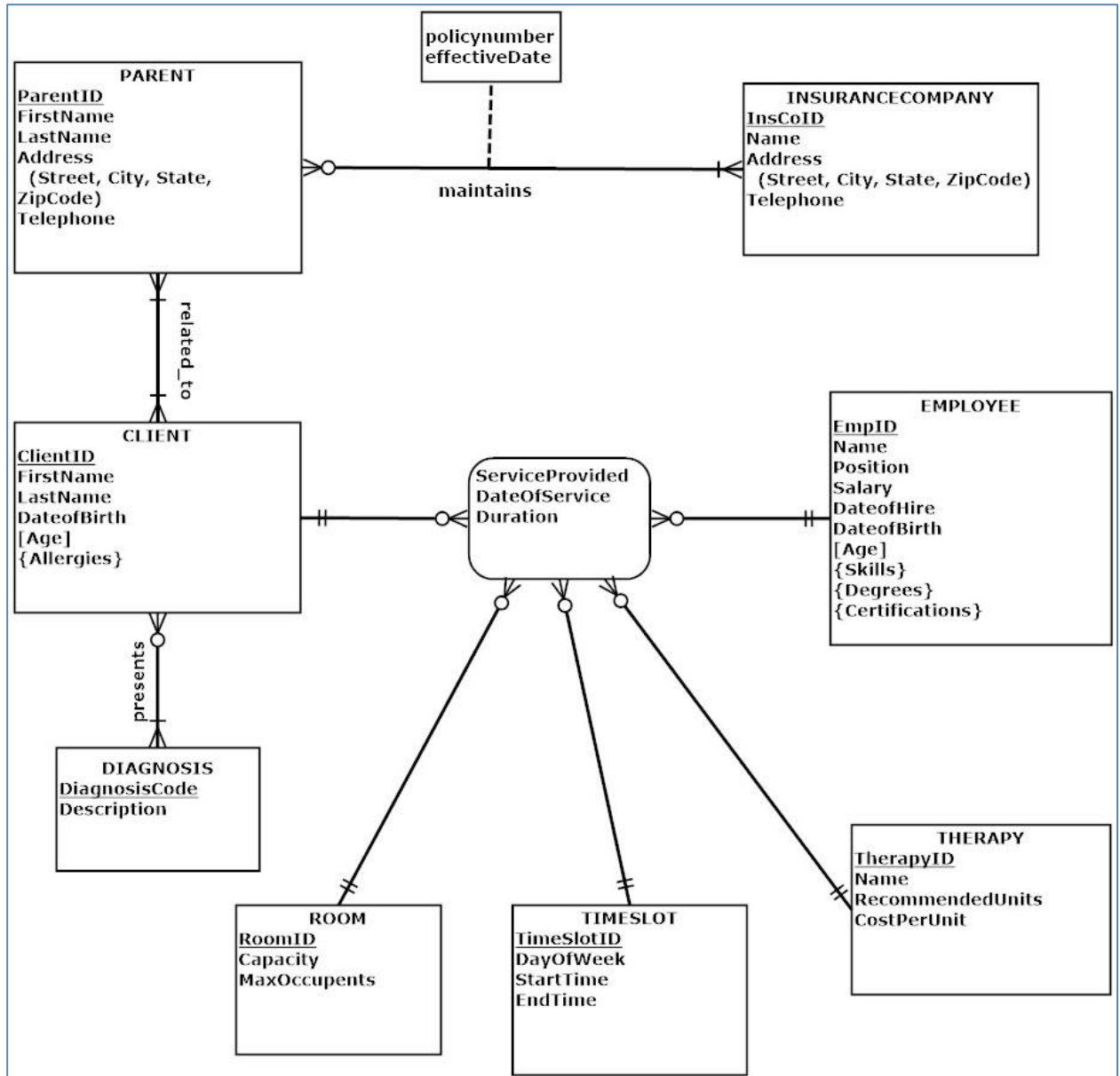   - City
        - State
        - ZipCode
    - Telephone

- InsuranceCompany
  - InsCoID
  - Name
  - Address
    - Street
    - City
    - State
    - ZipCode
  - Telephone

- Therapy
  - TherapyID
  - Name
  - RecommendedUnits
  - CostperUnit

- TimeSlot
  - TimeslotID
  - DayofWeek
  - StartTime
  - EndTime

- Room
  - RoomID
  - Capacity
  - MaxOccupants

There are also some additional business rules:

1. A parent can have many children (clients.) Also, information can be kept on multiple parents for one child
2. A parent can have more than one insurance policy used for billing. We also want to store the policy number and effective date
3. A client is scheduled for a particular therapy in a particular room during a given timeslot
4. A client can have 1 or more diagnosis codes
5. Keeping track of billing is not included in this application. This is merely a scheduling application.
6. We want to keep track of the date of service for a scheduled therapy as well as the duration

From the ERD shown below design the following:

1. a set of normalized relations
2. the scripts to create the tables defined by step 1

PARENT
ParentID
FirstName
LastName
Address
  (Street, City, State,
ZipCode)
Telephone

policynumber
effectiveDate

INSURANCECOMPANY
InsCoID
Name
Address
  (Street, City, State, ZipCode)
Telephone

maintains

related_to

CLIENT
ClientID
FirstName
LastName
DateofBirth
[Age]
{Allergies}

ServiceProvided
DateOfService
Duration

EMPLOYEE
EmpID
Name
Position
Salary
DateofHire
DateofBirth
[Age]
{Skills}
{Degrees}
{Certifications}

presents

DIAGNOSIS
DiagnosisCode
Description

THERAPY
TherapyID
Name
RecommendedUnits
CostPerUnit

ROOM
RoomID
Capacity
MaxOccupents

TIMESLOT
TimeSlotID
DayOfWeek
StartTime
EndTime

Part II SQL – 50 points

Use the Richard's Catering Case Study for the following queries:

1. For each staff member, list the number of events that he or she has worked. Your output should include the last name, first name and the number of events.

2. For each staff member, list the number of each type of event that he or she has worked. Your output should include the last name, first name, event_type and the number of events.

3. Find all maincourses that have not been served at wedding receptions. List out the description.

4. List all dishes that have only been served at night (i.e. start hour >= 6) This the dish description.

5. Extra Credit: Calculate the total cost for each event.

Please submit your queries along with the results