

Assignment 4: Entity-Relationship Diagram

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/* THIS ASSIGNMENT IS MY OWN WORK, IT WAS WRITTEN WITHOUT CONSULTING  
WORK WRITTEN BY OTHER STUDENTS OR COPIED FROM ONLINE RESOURCES.  
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```

Q1. Car Insurance Database

```
Customer(cID, name, address)  
Car(licenseNo, model, year, cID)  
    // "Owns" relationship handled by including cID  
  
Accident(aID, date, place, damageAmt)  
Participates(licenseNo, aID)  
    // multiple cars be can involved in the same accident  
  
Participates[aID]  $\subseteq$  Accident[aID]  
Participates[licenseNo]  $\subseteq$  Car[licenseNo]  
Car[cID]  $\subseteq$  Customer[cID]
```

Q2. Emory College Database

```
Course(courseID, cname, descrip, dName)  
    // "Catalog" relationship handled by dName  
  
Department(dName, addr, phone)  
Faculty(SSN, name, office, phone, salary, dName)  
    // "Member relationship handled by dName  
Chair(dName, SSN, startDate)  
    // key as dName enforces one chair per department  
  
Section(sectionID, semID, courseID, SSN)  
    // key as sectionID enforces one teacher per section,
```

one course per section, one semester per section
Semester(semID, startDate, endDate)

Student(studID, name, addr)

Takes(studID, sectionID)

Course[dName] \subseteq Department[dName]

Faculty[dName] \subseteq Department[dName]

Chair[dName] \subseteq Department[dName]

Chair[SSN] \subseteq Faculty[SSN]

Section[semID] \subseteq Semester[semID]

Section[courseID] \subseteq Course[courseID]

Section[SSN] \subseteq Faculty[SSN]

Takes[studID] \subseteq Student[studID]

Takes[sectionID] \subseteq Section[sectionID]

Q3. Emory Hospital Database

Assuming:

- A specialty can take up multiple rooms
- A specialty does not need to have teams
- A doctor does not have to be a member of a team within their specialty
- A team must have at least one doctor
- A room does not need to be occupied by a team from that room's specialty
- A team must have a room to work in, and can have multiple rooms to work in from that team's specialty

