ASDV 2540, Databases Design
Assignment 4

Problem 1: Use Visual Paradigm and create the superclass Employee with its 2 subclasses Secretary and Engineer. Underline the key SSN as you learned in the previous lab. To create the upside down U Create a textbox with no border and then rotate the U clockwise twice (Right click on U > Presentation Options > Rotate Clockwise).
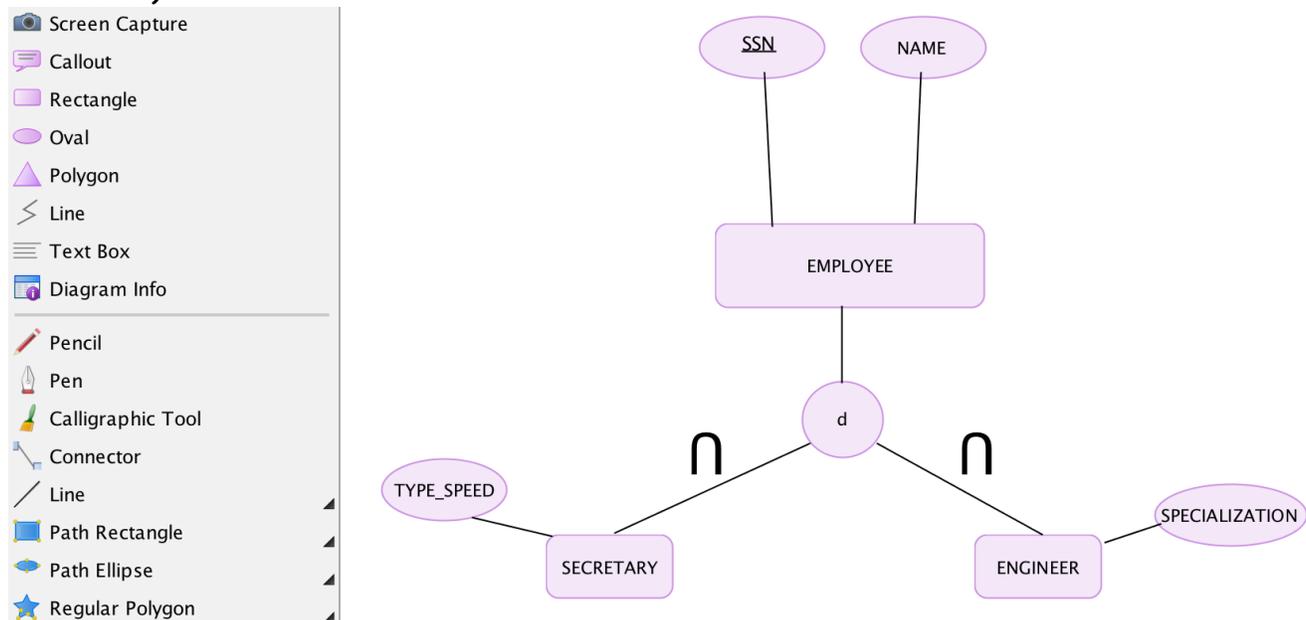
Problem 2: Use Visual Paradigm and generate the EER shown below
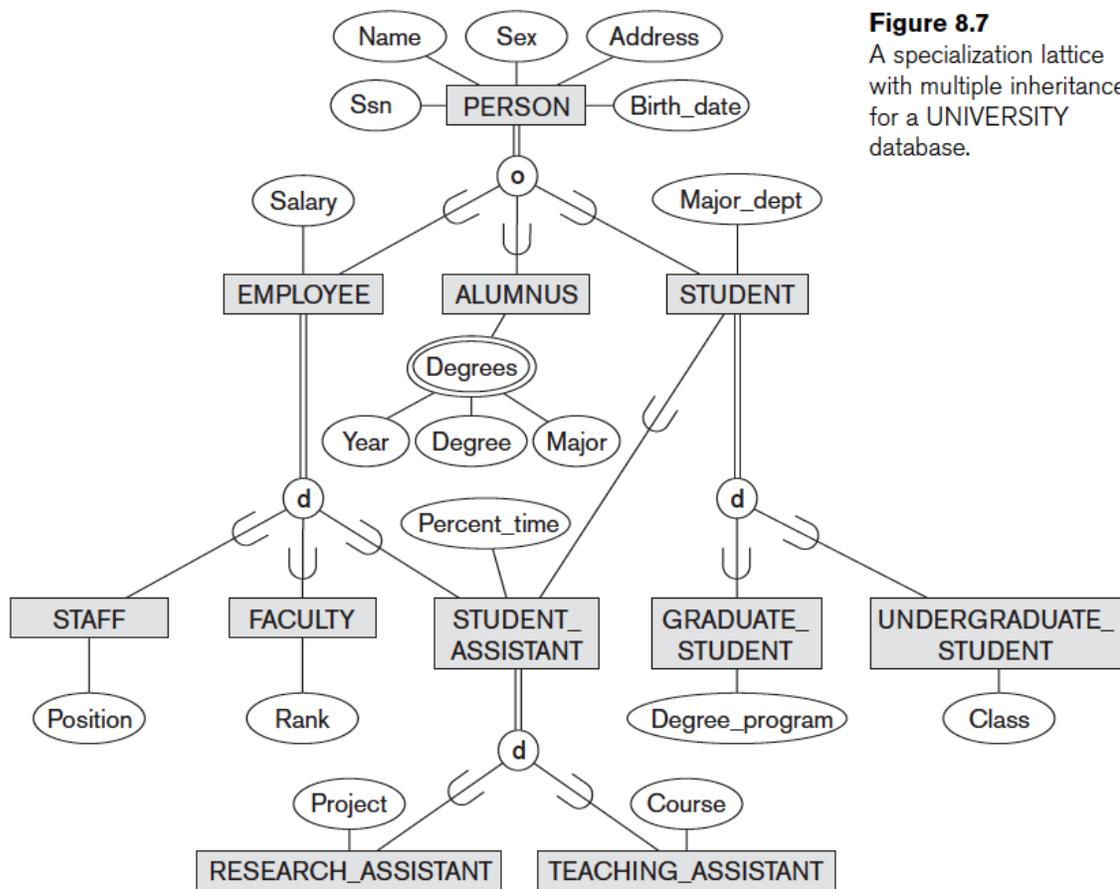
Figure 8.7
A specialization lattice with multiple inheritance for a UNIVERSITY database.

Problem 3

Create New ER model. SELECT CONCEPTUAL model not PHYSICAL. Drag in 3 Entities. Name them as shown below.

  – - To Add attributes - right click on the entity > New Column
  – - To set a KEY –right click on the attribute (i.e. SSN) > Include in Primary Key
  – - To add IS-A – double click on generalization arrow
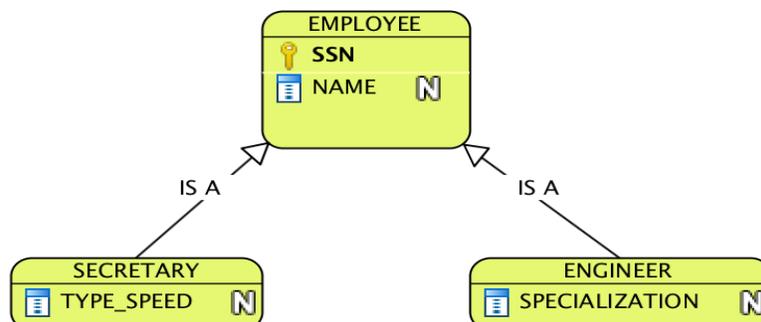
Problem 4
Add to your existing ER model

Drag in Entities STUDENT, COURSE. Name them as shown below. Put a many to many relationship in between called TAKE. Name the attributes and set the keys as shown below

```
                        EMPLOYEE
                     🔑 SSN
                     📋 NAME    N


         IS A                        IS A


    SECRETARY                            ENGINEER
 📋 TYPE_SPEED  N                   📋 SPECIALIZATION  N


    STUDENT                              COURSE
 🔑 SID          o- - -  TAKE  - - -o< 🔑 CID
 📋 NAME   N                        📋 TITLE   N
```
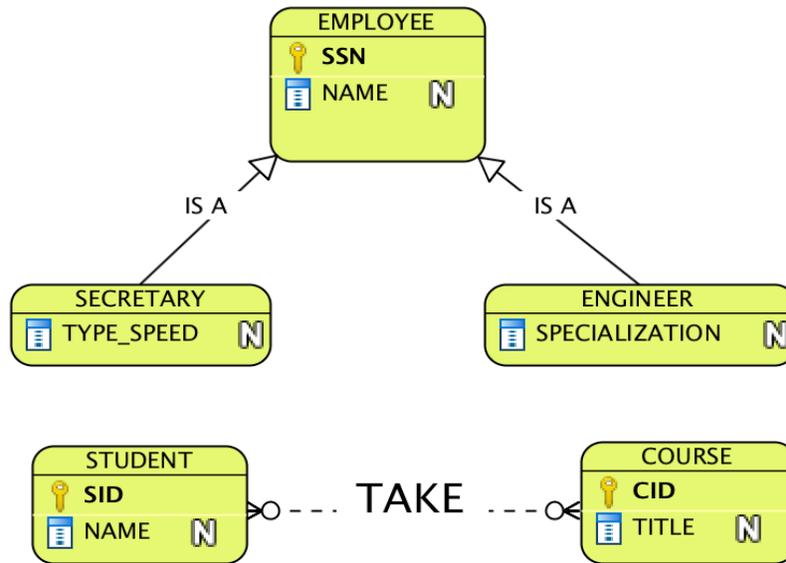
Problem 5
Delete the many to many relationship TAKE of STUDENT COURSE .
1. Create a new entity TAKE.
2. Put in entity TAKE the new column SID

```
    STUDENT                              COURSE
 🔑 SID                             🔑 CID
 📋 NAME   N                        📋 TITLE   N


              TAKE
```
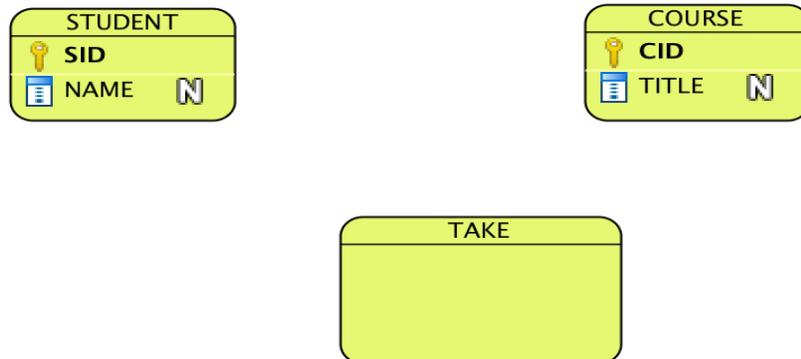
3. Drag a 1-to-many relationship from STUDENT to TAKE. The default column is a SIDSTUDENT which is a foreign key. Rename it to SID.
4. Similar, drag a 1-to-many relationship from COURSE to TAKE. When the following dialog pops up, SELECT CID, click Apply, OK.
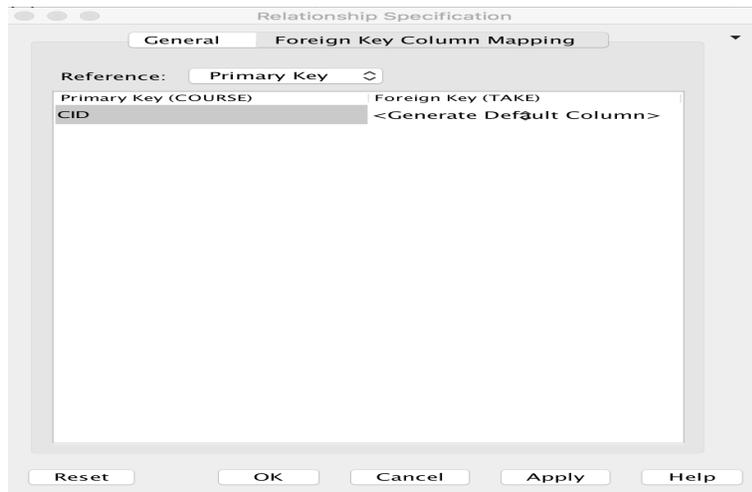
5. The final diagram is shown below of breaking the m-to-m into 1-to-m is shown Below.

YOU CAN SEE STUDENT_SID is an FK in ENTITY TAKE from the GREEN arrow that flows outside the key diagram.

WE WILL USE THIS AS OUR **RELATIONAL SCHEMA.**
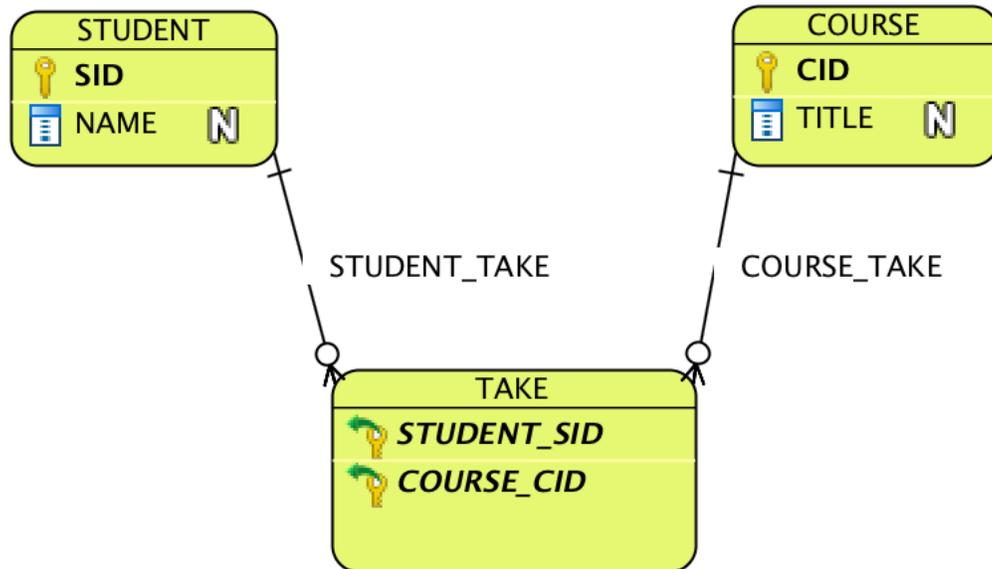
Problem 6
Use Visual Paradigm and map this schema into a **RELATIONAL SCHEMA as in problem 5.**
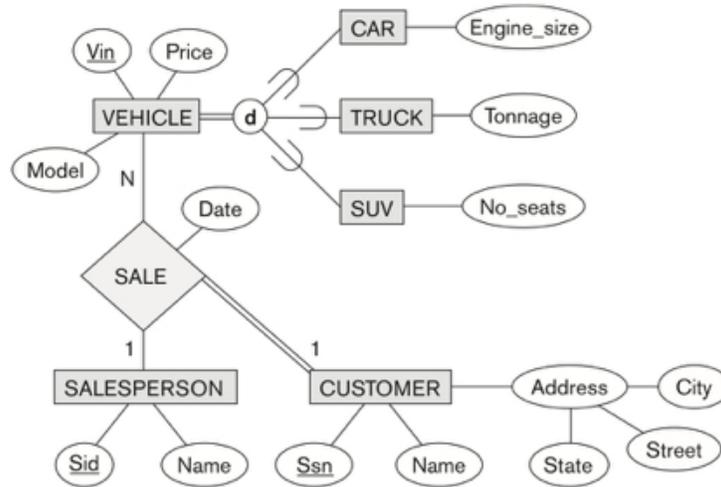
Problem 7
Use Visual Paradigm and map this schema into a **RELATIONAL SCHEMA as in problem 5.**
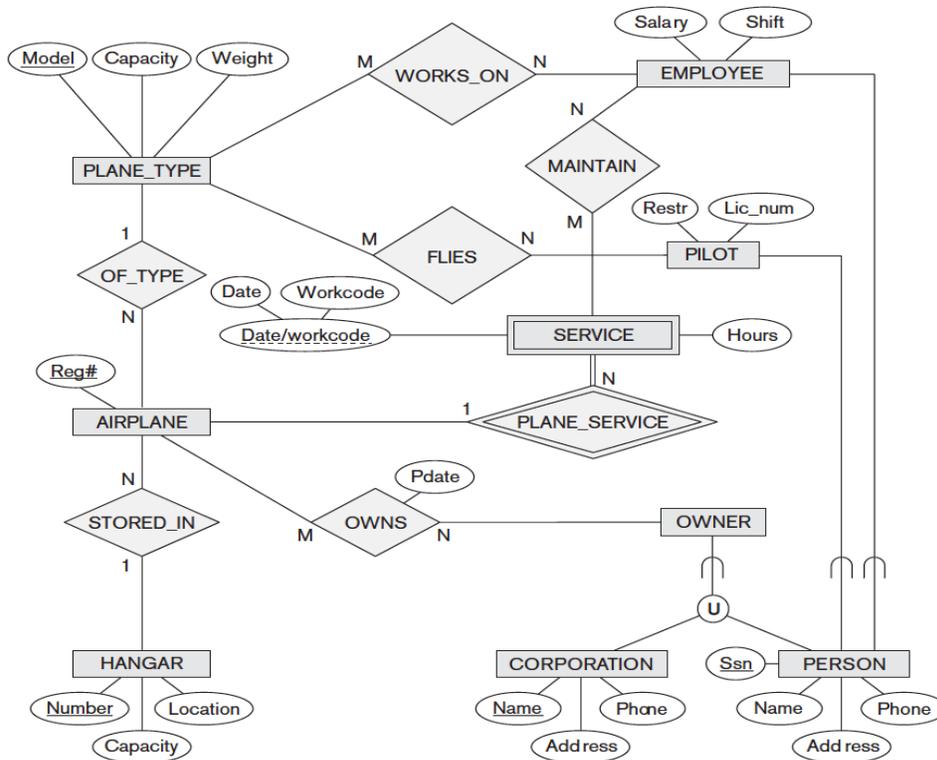
Figure 8.12
EER schema for a SMALL_AIRPORT database.