CIS/CSC384

HomeWork 2: Due Feb 4, 2010 before class

You will turn in the assignment via bb. Turn in the following: a single word/pdf document (where the ER schemas are shown as figures). If you have designed ER Diagrams using ER Assistant, submit the ER Diagrams as well.

1. Design an ER Diagram for showing the precedence relationship between tasks. For the *Task* entity type, add attributes *TaskNo* (primary key), *TaskDesc*, *TaskEstDuration*, *TaskStatus*, *TaskStartTime*, and *TaskEndTime*. Show the precedence relationship (which task precedes which task) as a self-referencing relationship. Choose an appropriate name for the relationship, and indicate appropriate cardinality constraints. [2]

2. Draw an ER Diagram depicting patients visiting hospitals. Your ER diagram contains the *Patient*, the *Physician*, and the *Visit* entity types connected by 1-M relationships from *Patient* to *Visit*, and from *Physician* to *Visit*. Choose appropriate names for the relationships. Define minimum cardinalities so that *Patients* and *Physicians* are mandatory for a *Visit*. For the *Patient* entity type, add attributes *PatNo* (primary key), *PatFirstName*, *PatLastName*, *PatCity*, *PatState*, *PatZip*, and *PatHealthPlan*. For the *Physician* entity type, add attributes *PhyNo* (primary key), *PhyFirstName*, *PhyLastName*, *PhySpecialty*, *PhyPhone*, *PhyEmail*, *PhyHospital*, and *PhyCertification*. For the *Visit* entity type, add attributes *VisitNo* (primary key), *VisitDate*, *VisitPayMethod* (cash/check/credit), and *VisitCharge*. [3]

3. To the ER Diagram from 2, add *Nurse*, *Item*, and the *VisitDetail* entity types. *VisitDetail* is a weak entity, where a 1-M relationship from *Visit* to *VisitDetail* is the identifying relationship. Also define 1-M relationships from *Nurse* to *VisitDetail*, and *Item* to *VisitDetail*. Choose appropriate names for the relationships. Define cardinality constraints such that a *Nurse* is optional for a *VisitDetail*, an *Item* is mandatory for a *VisitDetail*, and *VisitDetail* is optional for *Nurses* and *Items*. For the *Item* entity type, add attributes *ItemNo* (primary key), *ItemDesc*, *ItemPrice*, and *ItemType*. For the *Nurse* entity type, add attributes *NurseNo* (primary key), *NurseFirstName*, *NurseLastName*, *NurseTitle*, *NursePhone*, *NurseSpecialty*, and *NursePayGrade*. For the *VisitDetail* entity type, add attributes *DetailNo* (part of the primary key), and *DetailCharge*. [3]

4. To the ER diagram from 3, add a generalization hierarchy consisting of *Provider*, *Physician*, *and Nurse*. The root of the generalization hierarchy is the *Provider* entity type. The primary key of *Provider* is *ProvNo* replacing the attributes *PhyNo* and *NurseNo*. The other attributes in the *Provider* entity type should be the attributes common to *Nurse* and *Physician*. You should rename the attributes to be consistent with the inclusion in the *Provider* entity type. The generalization hierarchy should be disjoint and complete. [2]