

Computer Science 455

First Hour Exam

Name _____

Friday, Feb. 20
100 pts.

c. (20 pts.) Give brief definitions for the following:

key

foreign key

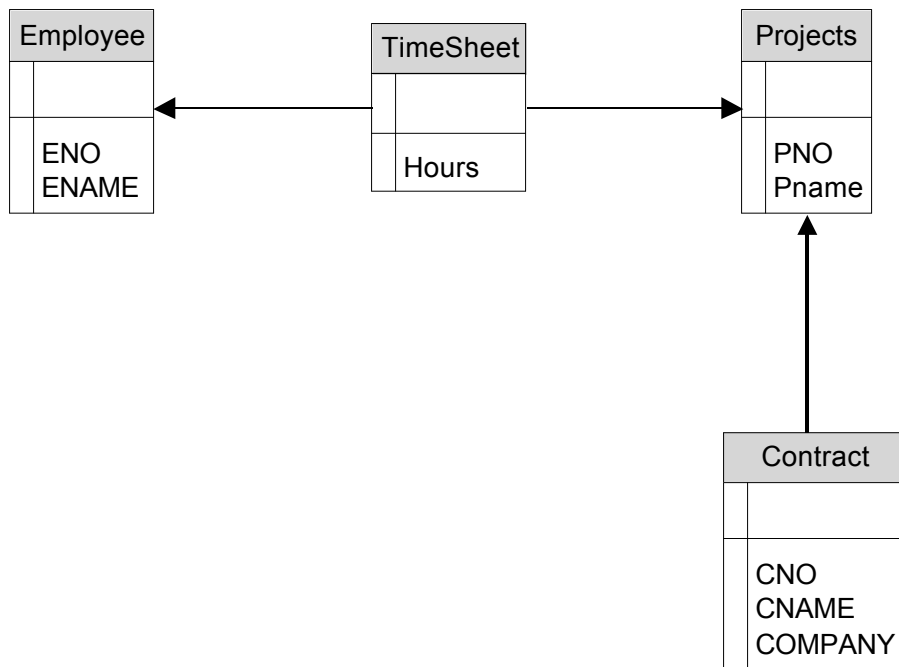
entity integrity

referential integrity

data independence

- d. (10 pts) What is a data model? Using your definition, give brief (one sentence) descriptions of each of the three data models (hierarchical, network/CODASYL, and relational) we have studied so far.

e. (15 pts.) Consider the following entity-relationship diagram:



From this diagram, construct a relational schema, clearly identifying keys and any foreign keys in each table (write them down separately – don't simply circle them).

Questions following are with respect to the SPJ database:

S(SNO, SNAME, STATUS, CITY)

P(PNO, PNAME, COLOR, WEIGHT, CITY)

J(JNO, JNAME, CITY)

SPJ(SNO, PNO, JNO, QTY)

- a. (10 pts.) Using both EASYALG and SQL, write queries to find the names (only) of RED parts.

EASYALG

SQL

- b. (10 pts.) Using both EASYALG and SQL, write queries to find the names of projects (j.jname) using part number P2.

EASYALG

SQL

c. (10 pts.) (SQL only) Write a query to find the names of projects (j.jname) using a RED part.

d. (10 pts.) Briefly describe the three basic file organizations.