PED 267/317 Midterm #2 Study Guide

Section A: Essay Questions | 30 minutes | 6.25 points | 2 questions from list below
Please articulate answers in at least 500 words

1. Explain what the instructor means by the phrase 'Organize or Die'. Specifically address the author and publication the instructor cites as the inspiration for 'Organize or Die'. When answering this question, be sure to place into context the historical range of how long 'Organize or Die' refers to as well as the cultures affected by this philosophy. Explain how and why this philosophy relates to the use of systems. Finally, address how and why this phrase has been introduced in an introductory database design class.

2. Explain the benefits of the Relational database design when compared to Hierarchical design by using UNIVERSITY database as an example. When explaining how specifically the relational model out-performs the hierarchical model, reference the following objects contained in both a relational and hierarchical diagram that you create (minimum two diagrams required):
    a. DEPARTMENT
    b. COURSE
    c. CLASS
    d. CLASS_STUDENT
    e. STUDENT

3. Explain the SDLC as a design framework by including the distinct phases in a diagram. As part of the diagram, provide the key characteristics of each phase in addition to how the framework is a relic of Organize or Die.

4. Discuss the purpose and benefits of following the normalization process during database design by providing an example of a design in UNF and then 3NF. In your diagram, make sure to include column names and proper markings of PK and FKs.

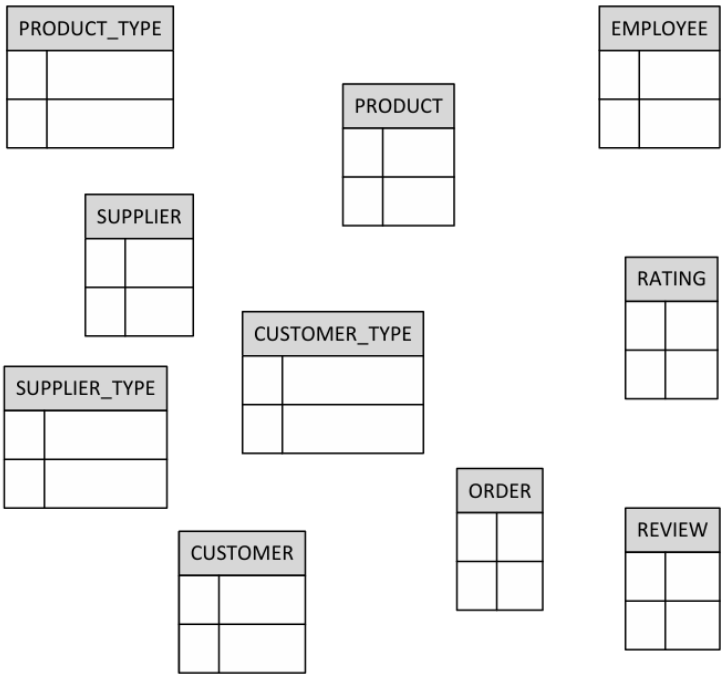
5. Explain the concept of modularity and the benefits it provides before, during, and after runtime. Be sure to include how the artifacts of output parameters, variables, nested stored procedures, Control of Flow language, and error-handling facilitate the benefits.

Section B: Data Model and Data Definition | 30 minutes | 6.25 points | 1 Design Challenge
Each student will be tasked with designing and coding a data model from the following:

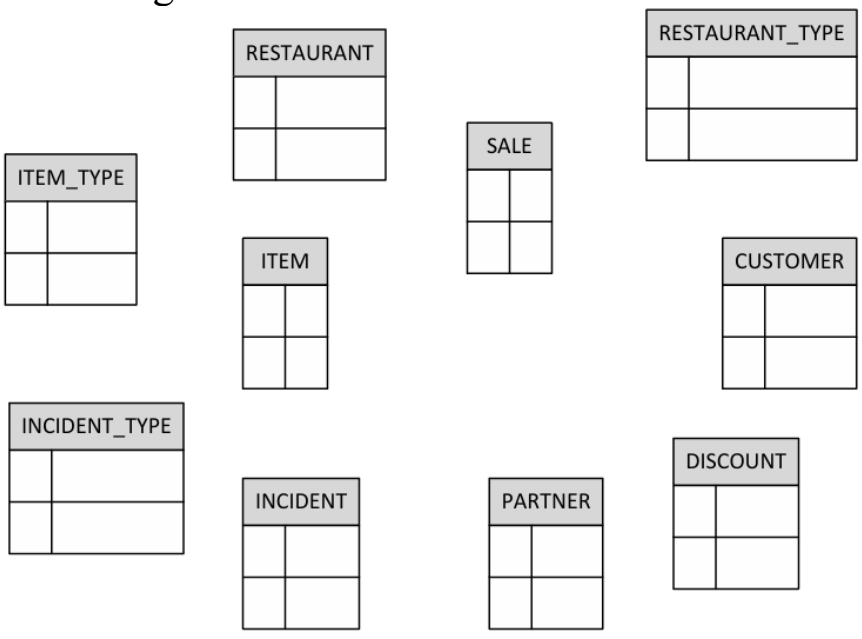
- Hay Nursery is a small business for homeowners who want to buy home-landscaping products
- Super Smash Burgers is a chain of diners located at malls across Central Asia.
- Smash-athon is a planning services organization that creates and markets events

    - Review the nearly complete ERD and add one associative entity that reflects a M:M relationship
    - Complete the data model with proper Crow's Foot notation and PK/FK for each relationship.
    - Write the CREATE TABLE statements to establish the tables from the ERD
    - Write the ALTER TABLE statements for each foreign key

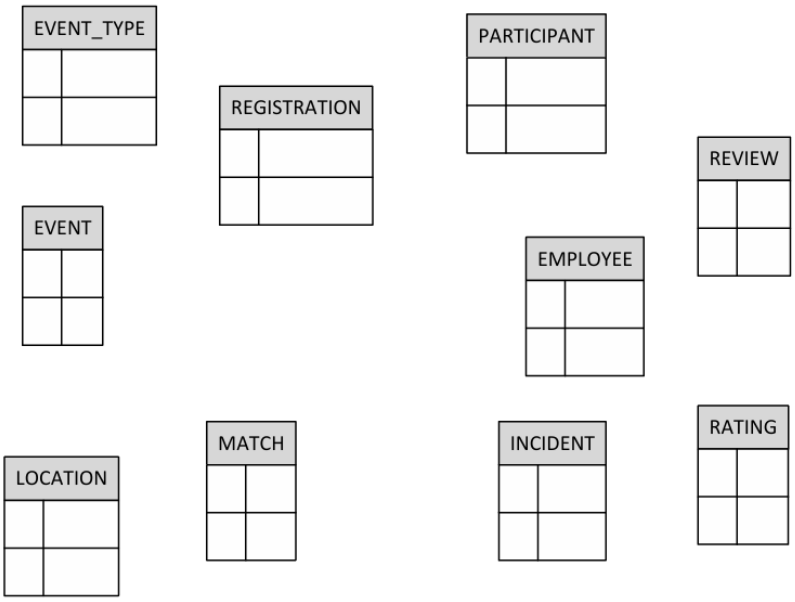
Hay Nursery



Smash Burgers



Smash-athon Events



Section C: Data Model and Data Definition | 60 minutes | 12.5 points | 3 SQL Challenges
Each student will be tasked with designing and coding a data model from the following:

- Create at least one stored procedure that takes in several parameters of friendly names and INSERTs into multiple tables in an explicit transaction with proper error-handling
- Create at least one business rule or computed column leveraging a function
- Create at least one stored procedure that calls a second stored procedure (‘nested’ stored procedure) leveraging an OUTPUT parameter