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CS374 – Database Management

HW1

**EX01\_01**

Queries:

1. Select all students who are CS majors.
2. List the course number for all courses.
3. Select all of the course numbers where the semester is fall.
4. List the grades for all of the students.
5. List all of the information in prerequisites.

Updates:

1. Add new students to the Students table that are CS majors.
2. Change the data structures course in Course table to a 3 credit.
3. Remove the Instructor Anderson from all sections in the Section table.
4. Change the grade for section 92 for student 8 to a B in Grade-Report table.
5. Add a new prerequisite to the Prerequisite table.

**EX01\_02**

* Student is related to Grade\_Report through the Student\_Number attribute.
* Course is related to Section and is related to Prerequisite through the Course\_number attribute.
* Section is related to Grade\_Report through the Section\_identifier attribute.

**EX01\_03**

For an airline reservation and ticket sales web system, I would use a three-tier architecture. Three-tier has a middle layer that is a checker for security and is able to process data before accessing the database. It is the best architecture because it provides security for the client when they are inputting their personal financial information and it adds protection for the system against a client whom is trying to misuse the software. Because of its advanced encryption, there is a lot safer transfer of sensitive data.

**EX01\_04 –** Design a relation that stores information about restaurants. Give the schema for that relation, including attribute names, the domain for each attribute, and key(s). What is the arity of the relation?

RESTRAUNT

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Branch\_Location | Star\_Year | Branch\_ID | Phone | Employee\_Name | Employee\_Position |
| Text | Text | 4 digit num | 9 digit num | 10 digit num | Text | text |

The arity of relation is 7.

Schema: RESTURAUNT(Name, Branch\_location, Start\_Year, Branch\_ID, Phone, Employee\_Name, Employee\_Position)

Key: Branch\_ID Domain: See second row

**EX01\_05 –** Give an instance for your restaurant table. The cardinality of your table should be greater than seven.

<”Red Robin”, “Seattle, WA”, 2004, 123456789, 2065555555, “Daniel Bob”, “Manager”>

**EX01\_06** – Suppose you are designing a database for a restaurant supply company. You have a table for the different restaurants you supply ingredients to. Give schemas for two separate tables that a restaurant supply company might also need in their business.

Schema 1: CUSTOMER(Cust\_CompanyName, Cust\_ID, Cust\_Location, Product\_Catagory, Product, Quantity, Price)

Schema 2: PRODUCT(Product\_Catagory, Product\_Name, Location, Stock, Cost\_of\_production)

**EX01\_07** – Using your DBMS of choice (MySQL, SQL Server, Access, …), create your tables using the system’s user interface.

\*Also found in access in my folder: Z:\CS374-1\GitHub DM\HW1



