**CS1270 Homework #1**

**Banner ID: B01532164**

**Warmup #1**

For dealership:

Super keys:

1. dealership\_name
2. dealership\_name + city
3. dealership\_name + country
4. dealership\_name + city + county

Candidates keys:

1. dealership\_name

Primary keys:

1. dealership\_name

For cars

Super keys:

1. car\_id + dealership\_name
2. car\_id + dealership\_name + car\_name
3. car\_id + dealership\_name + year\_made
4. car\_id + dealership\_name + car\_name + year\_made

Candidate keys:

1. car\_id + dealership\_name

Primary keys

1. car\_id + dealership\_name

**Warmup #2**

**Problem #3**

**1 Answer:**

*#natural join table department and course to get the information about which course is provided by which department*

*#find courses from departments in CIT building*

*#natural join table student and takes to get information about which student takes which courses and save column “s-ID”, “name” and “course-id” only*

*#natural join table Temp3 and Temp2 to find the students that take courses from departments in CIT building*

*#Find the students don’t take courses from departments in CIT building*

**2 Answer:**

*#get only course-id, sec-id and time-slot from table section*

*#cartesian product of Temp1 itself and get all combinations of courses*

*#rename the columns to make it more readable*

*#select the different courses that have the same time-slot*

*#get course-id and sec-id*

**3 Answer:**

*#* *natural join table instructor and teaches to find information which instructor teaches which courses and save column “i-id”, “name” and “course-id”*

*#find courses from “CS” or “Math” departments*

*#find courses with no prerequisites*

*#find courses* *in the “Computer Science” or “Math” department or with no prerequisites*

*# natural join table Temp1 and Temp4 to get the i-id and name of instructor that teaches courses in Temp4*

**Problem #4**

**1 Answer:**

*#natural join table takes and course to get information about which student takes which courses and the course’s department and save column “s-ID”, and “dept-name” only*

*#group Temp1 by dept-name and count the students that take courses from the department*

**2(a) Answer:**

**2(b) Answer:**

**2(c) Answer:**

**3 Answer:**

**Problem #5**

**1(a) Answer:**

**1(b) Answer:**

**1(c) Answer:**

**2(a) Answer:**

**2(b) Answer:**

**3 Answer:**

**Step1:**

*# Find all student IDs and the course IDs they take that are from “Math” department*

**Step2:**

*# Find the course IDs for all “Math” courses.*

**Step3:**

*#Find the IDs of all students who have taken all “Math” courses. This is a more complicated way to do “division”.*