

CSCI 2141**W2013****Assignment 5, Due 9:35 am, March 27, 2013****Groups of up to 3 students permitted.**

Submission instructions: Submit an electronic copy of your assignment (SCAN your work as a PDF if needs be, scanner located by tech support on 1st floor). Email your assignment to the TA, Savneet Arora (sarora@cs.dal.ca). In the subject line, use the following template: 2141 Assignment-3 (Banner ID(s))

- 1. Given the following schema, write SQL statements that would achieve the following goals (either do on paper, or test on in mysql and submit output clearly showing the statements and results for each question asked):**

Manufacturer (name, country, phone)

Product (*manu_Name, *model, style)

Desktop (model, speed, RAM, HD, list_price)

Laptop (model, speed, RAM, HD, screen, list_price)

- a) Create the tables using appropriate data types.
- b) Statements that would insert appropriate data for at least 3 tuples in the product and desktop tables (can do more if you want to build a db to your statements on)
- c) Find the average HD size of the Desktop PCs
- d) Find the average price of laptops with a speed of at least 3.0
- e) Find the average price of desktop and laptops made by Dell
- f) Find, for each different price, the average speed of a PC
- g) Find the manufacturers that make at least 3 different models of desktop PCs
- h) Find for each manufacturer that makes desktop the maximum speed of a desktop
- i) Find the for each speed of desktop PC above 2.5, the average hard-disk size
- j) Find for each manufacturer, the average speed of its laptops
- k) Find the average hard-disk size of a desktop PC for all those manufacturers that make laptops
- l) Delete all desktop PCs with less than 400GB of HD
- m) Using 2 insert statements, insert the following data in the DB: desktop PC model 1500 is made by Acer, has speed 3.1, RAM 2048, HD 300, and sells for \$799.
- n) Delete all laptops made by a manufacturer that doesn't make PCs
- o) For each PC, double the amount of HD and add 2048 to the amount of RAM
For each laptop made by Dell, add one inch to the screen size and subtract \$200 from the price

Write the following as triggers. In each case, disallow or undo the modification if it does not satisfy the stated constraint.

- p) When inserting a new laptop, check that the model number exists in Product
- q) When updating the price of a laptop, check that there is no lower priced laptop of the same screen size.

2. Consider the following schema:**Movies** (title, year, length, genre, *studioName, *producerID)**StarsIn**(*movieTitle, *movieYear, *starName)**MovieStar**(name, birthdate, address, gender)**MovieMaker**(ID, name, address)**Studio** (name, address, *presidentID)**Write constraints for the relation Movies:**

- a. The length cannot be less than 30 minutes or more than 480 minutes
- b. The year must be 1909 or later
- c. The only allowable genres are drama, comedy, teen, romance, and vampire

Write the following constraints as a tuple-based CHECK constraint:

- a) A star may not appear in a movie made before they were born
- b) A studio name that appears in Studio must also appear in at least one Movies tuple
- c) No studios can have the same address
- d) If the producer of a movie is also the president of a studio, then they must be the president of the studio that made the movie