

CPSC 5021 Database Systems

Fall 2017

Homework 1

Due: 6:00 pm, Thursday, Oct 5 (start of class)

Written Problems (Total points: 30)

Make sure that your writing is legible, or else, please type your answers.

1. (4 points, 2 points each)

Use the database composed of the two tables below to answer the following questions.

Table name: DIRECTOR

DIR_NUM	DIR_LNAME	DIR_DOB
100	Broadway	12-Jan-65
101	Hollywoody	18-Nov-53
102	Goofy	21-Jun-62

Table name: PLAY

PLAY_CODE	PLAY_NAME	DIR_NUM
1001	Cat On a Cold, Bare Roof	102
1002	Hold the Mayo, Pass the Bread	101
1003	I Never Promised You Coffee	102
1004	Silly Putty	100
1005	See No Sound, Hear No Sight	101
1006	Starstruck in Biloxi	102
1007	Stranger in Parrot Ice	101

(1) For each table, identify the primary key.

(2) For each table, identify the foreign key(s). If a table does not have a foreign key, write None.

2. (6 points, 2 points each)

Given the following relational tables “BOOTH” and “MACHINE”.

Table name: BOOTH

BOOTH_PRODUCT	BOOTH_PRICE
Chips	1.5
Cola	1.25
Energy Drink	2

Table name: MACHINE

MACHINE_PRODUCT	MACHINE_PRICE
Chips	1.25
Chocolate Bar	1
Energy Drink	2

Please answer the following questions:

(1) Create the table that results from applying a UNION relational operator to the two tables “BOOTH” and “MACHINE”.

(2) Create the table that results from applying an INTERSECT relational operator to the tables “BOOTH” and “MACHINE”.

(3) Create the table that results from MACHINE DIFFERENCE BOOTH.

3. (5 points, 2.5 points each)

Given the following relational table “PERSON”.

Table name: PERSON

NAME	AGE	WEIGHT
Harry	34	80
Sally	28	64
George	29	70
Helena	54	54
Peter	34	80

Please answer the following questions:

(1) Create the table that results from applying PROJECT AGE and WEIGHT to the table PERSON.

(2) Create the table that results from applying SELECT only AGE \geq 34 to the table PERSON.

4. (15 points, 3 points each)

Given the following two tables “EMPLOYEE” and “DEPT”.

Table name: EMPLOYEE

NAME	EMPID	DEPTNAME
Harry	3415	Finance
Sally	2241	Sales
George	3401	Finance
Harriet	2202	Production

Table name: DEPT

DEPTNAME	MANAGER
Sales	Harriet
Production	Charles

Please answer the following questions:

(1) Create the table that results from EMPLOYEE PRODUCT DEPT.

(2) Create the table that results from EMPLOYEE NATURAL JOIN DEPT.

(3) Create the table that results from EMPLOYEE LEFT OUTER JOIN DEPT.

(4) Create the table that results from EMPLOYEE RIGHT OUTER JOIN DEPT.

(5) Create the table that results from EMPLOYEE OUTER JOIN DEPT.