SAMPLE DATABASE

Schema of the university database

1. Classroom(building,room_number, capacity)
2. Department(dept_Name,building,budget)
3. Course(course_id,title,dept_name,credits)
4. Instructor(ID,name,dept_name,salary)
5. Student(ID,name,dept_name,tot_cred)
6. Section(course_id,sec_id, semester,year,building,room_number)
7. Teaches(ID,course_id,sec_id,semester,year)
8. Takes(ID,course_id,sec_id,semester,year,grade)

building	*room_number*	*capacity*
Packard	101	500
Painter	514	10
Taylor	3128	70
Watson	100	30
Watson	120	50

Figure A.3 The *classroom* relation.

dept_name	*building*	*budget*
Biology	Watson	90000
Comp. Sci.	Taylor	100000
Elec. Eng.	Taylor	85000
Finance	Painter	120000
History	Painter	50000
Music	Packard	80000
Physics	Watson	70000

Figure A.4 The *department* relation.

course_id	*title*	*dept_name*	*credits*
BIO-101	Intro. to Biology	Biology	4
BIO-301	Genetics	Biology	4
BIO-399	Computational Biology	Biology	3
CS-101	Intro. to Computer Science	Comp. Sci.	4
CS-190	Game Design	Comp. Sci.	4
CS-315	Robotics	Comp. Sci.	3
CS-319	Image Processing	Comp. Sci.	3
CS-347	Database System Concepts	Comp. Sci.	3
EE-181	Intro. to Digital Systems	Elec. Eng.	3
FIN-201	Investment Banking	Finance	3
HIS-351	World History	History	3
MU-199	Music Video Production	Music	3
PHY-101	Physical Principles	Physics	4

Figure A.5 The *course* relation.

ID	*name*	*dept_name*	*salary*
10101	Srinivasan	Comp. Sci.	65000
12121	Wu	Finance	90000
15151	Mozart	Music	40000
22222	Einstein	Physics	95000
32343	El Said	History	60000
33456	Gold	Physics	87000
45565	Katz	Comp. Sci.	75000
58583	Califieri	History	62000
76543	Singh	Finance	80000
76766	Crick	Biology	72000
83821	Brandt	Comp. Sci.	92000
98345	Kim	Elec. Eng.	80000

Figure A.6 The *instructor* relation.

ID	name	dept_name	tot_cred
00128	Zhang	Comp. Sci.	102
12345	Shankar	Comp. Sci.	32
19991	Brandt	History	80
23121	Chavez	Finance	110
44553	Peltier	Physics	56
45678	Levy	Physics	46
54321	Williams	Comp. Sci.	54
55739	Sanchez	Music	38
70557	Snow	Physics	0
76543	Brown	Comp. Sci.	58
76653	Aoi	Elec. Eng.	60
98765	Bourikas	Elec. Eng.	98
98988	Tanaka	Biology	120

Figure A.9 The *student* relation.

ID	course_id	sec_id	semester	year
10101	CS-101	1	Fall	2009
10101	CS-315	1	Spring	2010
10101	CS-347	1	Fall	2009
12121	FIN-201	1	Spring	2010
15151	MU-199	1	Spring	2010
22222	PHY-101	1	Fall	2009
32343	HIS-351	1	Spring	2010
45565	CS-101	1	Spring	2010
45565	CS-319	1	Spring	2010
76766	BIO-101	1	Summer	2009
76766	BIO-301	1	Summer	2010
83821	CS-190	1	Spring	2009
83821	CS-190	2	Spring	2009
83821	CS-319	2	Spring	2010
98345	EE-181	1	Spring	2009

Figure A.8 The *teaches* relation.

ID	course_id	sec_id	semester	year	grade
00128	CS-101	1	Fall	2009	A
00128	CS-347	1	Fall	2009	A-
12345	CS-101	1	Fall	2009	C
12345	CS-190	2	Spring	2009	A
12345	CS-315	1	Spring	2010	A
12345	CS-347	1	Fall	2009	A
19991	HIS-351	1	Spring	2010	B
23121	FIN-201	1	Spring	2010	C+
44553	PHY-101	1	Fall	2009	B-
45678	CS-101	1	Fall	2009	F
45678	CS-101	1	Spring	2010	B+
45678	CS-319	1	Spring	2010	B
54321	CS-101	1	Fall	2009	A-
54321	CS-190	2	Spring	2009	B+
55739	MU-199	1	Spring	2010	A-
76543	CS-101	1	Fall	2009	A
76543	CS-319	2	Spring	2010	A
76653	EE-181	1	Spring	2009	C
98765	CS-101	1	Fall	2009	C-
98765	CS-315	1	Spring	2010	B
98988	BIO-101	1	Summer	2009	A
98988	BIO-301	1	Summer	2010	*null*

Figure A.10 The *takes* relation.

Experiment No. 2

DDL COMMANDS

1. Create the tables described below:

   Classroom(building,room_number, capacity)

   Department(dept_Name,building,budget)

   Course(course_id,title,dept_name,credits)

   Instructor(ID,name,dept_name,salary)

   Student(ID,name,dept_name,tot_cred)

   Section(course_id,sec_id, semester,year,building,room_number)

   Teaches(ID,course_id,sec_id,semester,year)

   Takes(ID,course_id,sec_id,semester,year,grade)

2. Modify the table
   a. **Course** such that the data type of course_id to varchar(10)
   b. **Department** to add a new column **dept_no** of data type number
   c. **Student** such that the contents of the column **name** should not be NULL
   d. **Classroom** such that the default value for column **capacity** as 50
   e. **Department** such that the contents of column **dept_name** should be unique
   f. **Instructor** such that the values for the column salary should be greater than 50000
3. Remove all constraints and modifications that are given to the database
4. Change the name of table **takes** to **subject**

EXPERIMENT NO: 3
DML COMMANDS

1. Insert data into given tables

2. Modify the table

- **Student** such that change the name of student as ‘Mozart’ whose Id is 45678
- **Department** such that budget of history department is 100000 and building as Taylor
- **Instructor** such that the salary of each instructor increases by 10%

- **Course** such that the credits of all courses under computer science department is 4
- **Student** such that give additional 10 points to the total credits for students who have total credits in between 20 to 50
- **Instructor** such that 5% salary raise to instructors whose salary is less than the average salary.
- **Teaches** such that change the year of the course to 2010 with course id ‘CS-101’ which is under ‘Fall’ semester

3. Delete the student information who have total credits is zero.
4. Delete the record from instructor whose id starts with ‘765’
5. Delete all courses that have never been offered(that is do not occur in the section relation)

EXPERIMENT NO: 3
DQL COMMANDS

1. Retrieve the name of instructor along with department names of all instructors
2. Retrieve the semester names from teaches relation and avoid duplicates.
3. Retrieve the name of instructor along with 10% raise in their salary
4. Retrieve the id and name of instructor who have salary greater than 70000 and working under computer science department
5. Retrieve the names of all instructors along with their department names and department buliding names
6. Retrieve the instructor names and course identifiers for instructors in the computer science department
7. Retrieve the details of course which title starts with ‘Intro’
8. Retrieve the details of course which title have substring ‘Comp’
9. Retrieve the information of students who have exaclty 3 characters in their names
10. Retrieve the information of Instructors who have atleast 3 characters in their names