Assignment 1

SCS 2109 -Database II

Total = 30 Marks

Deadline: 20th October 2016

Upload your answers to the LMS Assignment Box

Please include your index no and registration no in your answer script.

1. **What does the following statement do? (5 Marks)**

GRANT REFERENCES (col1, col2) ON TABLE1 TO user1 WITH GRANT OPTION

A. Gives user USER1 the ability to refer to COL1 and COL2 of table TABLE1 in queries, along with the ability to give this authority to other users and groups.
B. Gives user USER1 the ability to refer to COL1 and COL2 of table TABLE1 in views, along with the ability to give this authority to other users and groups.
C. Gives user USER1 the ability to define a referential constraint on table TABLE1 using columns COL1 and COL2 as the parent key of the constraint.
D. Gives user USER1 the ability to define a referential constraint on table TABLE1 using columns COL1 and COL2 as the foreign key of the constraint.

2. **A view named VIEW1 is based on a table named TABLE1. A user with DBADM authority issues the following statement: (5 Marks)**

GRANT INSERT ON view1 TO user1 WITH GRANT OPTION

Which of the following statements is USER1 authorized to execute?

A. GRANT INSERT ON table1 TO user2
B. GRANT CONTROL ON view1 TO user2
C. GRANT ALL PRIVILEGES ON view1 TO user2
D. GRANT INSERT ON view1 TO user2

3. Given the following employee table, Describe what are the constraints that will be violated by the given SQL statements? (5 Marks)

EMPLOYEE

Fname	Minit	Lname	Ssn	Bdate	Address	Sex	Salary	Super_ssn	Dno
John	B	Smith	123456789	1965-01-09	731 Fondren, Houston, TX	M	30000	333445555	5
Franklin	T	Wong	333445555	1955-12-08	638 Voss, Houston, TX	M	40000	888665555	5
Alicia	J	Zelaya	999887777	1968-01-19	3321 Castle, Spring, TX	F	25000	987654321	4
Jennifer	S	Wallace	987654321	1941-06-20	291 Berry, Bellaire, TX	F	43000	888665555	4
Ramesh	K	Narayan	666884444	1962-09-15	975 Fire Oak, Humble, TX	M	38000	333445555	5
Joyce	A	English	453453453	1972-07-31	5631 Rice, Houston, TX	F	25000	333445555	5
Ahmad	V	Jabbar	987987987	1969-03-29	980 Dallas, Houston, TX	M	25000	987654321	4
James	E	Borg	888665555	1937-11-10	450 Stone, Houston, TX	M	55000	NULL	1

a) Insert <'John', 'M', 'Doe', NULL, '1977-01-01', '123 Main, TX', 'M', 45000, NULL, 4> into EMPLOYEE
b) Insert <'Mary', 'M', 'Doe', 123456789, '1977-01-01', '123 Main, TX', 'M', 45000, NULL, 4> into EMPLOYEE
c) Insert <'Tom', NULL, 'Doe', '444444444', 1957-01-12, NULL, 'M', 10000, NULL, 4> into EMPLOYEE
d) Insert <'Tom', NULL, 'Doe', 333333333, 1957-03-23, NULL, 'M', '100K', NULL, 4> into EMPLOYEE
e) Insert <'Tom', NULL, 'Doe', 233333333, 1957, NULL, 'M', 50000, NULL, 4> into EMPLOYEE

4. Create a trigger to update the total salary of a department when a new employee is hired. (5 Marks)

```
mysql> select * from employee;
+----+------+---------+--------+------------+------+
| id | name | superid | salary | bdate      | dno  |
+----+------+---------+--------+------------+------+
|  1 | john |       3 | 100000 | 1960-01-01 |    1 |
|  2 | mary |       3 |  50000 | 1964-12-01 |    3 |
|  3 | bob  |    NULL |  80000 | 1974-02-07 |    3 |
|  4 | tom  |       1 |  50000 | 1970-01-17 |    2 |
|  5 | bill |    NULL |   NULL | 1985-01-20 |    1 |
+----+------+---------+--------+------------+------+
5 rows in set (0.00 sec)

mysql> select * from deptsal;
+---------+-------------+
| dnumber | totalsalary |
+---------+-------------+
|       1 |      100000 |
|       2 |       50000 |
|       3 |      130000 |
+---------+-------------+
3 rows in set (0.00 sec)
```

5. **The following triggers were defined for a table named SALES in the order shown:**

```
CREATE TRIGGER trigger_a
NO CASCADE BEFORE UPDATE ON sales
REFERENCING NEW AS new
FOR EACH ROW
SET new.commission = sale_amt * .05
  WHERE invoice = n.invoice;

CREATE TRIGGER trigger_b
AFTER INSERT ON sales
REFERENCING NEW AS new
FOR EACH ROW
UPDATE sales SET bill_date = CURRENT DATE + 30 DAYS
  WHERE invoice = n.invoice;

CREATE TRIGGER trigger_c
NO CASCADE BEFORE DELETE ON sales
FOR EACH ROW
SIGNAL SQLSTATE '75005'
  SET MESSAGE_TEXT = 'Deletes not allowed!';
```

Explain the above three triggers in your own words? (5 Marks)

6. **Given the following statements:**

```
CREATE TABLE t1 (c1 INTEGER, c2 CHAR(5));
CREATE TABLE t1audit (user VARCHAR(20), date DATE, action VARCHAR(20));

CREATE TRIGGER trig1 AFTER INSERT ON t1
 FOR EACH ROW
 MODE DB2SQL
 INSERT INTO t1audit VALUES (CURRENT USER, CURRENT DATE, 'Insert');
```

If user USER1 executes the following statements:

```
INSERT INTO t1 VALUES (1, 'abc');
INSERT INTO t1 (c1) VALUES (2);
UPDATE t1 SET c2 = 'ghi' WHERE c1 = 1;
```

How many new records will be written to the database? Justify your answer (5 Marks)