Database Systems Assignment 4
U00839259 (syrrmlla)

1. **Write SQL update statements to do the following on the database schema shown in Figure 1.2.**

   (a) [5 pts] Insert a new student <'Johnson', 25, 1, 'MATH'> in the database.

   ```
   INSERT into STUDENT(`Name`,`Student_number`,`Class`,`Major`) values
   ('Johnson', 25, 1, 'MATH');
   ```

   (b) [5 pts] Change the class of student 'Smith' to 2.

   ```
   UPDATE STUDENT set Class = 2 where Name= 'Smith';
   ```

   (c) [5 pts] Insert a new course <'Knowledge Engineering','COSC4390', 3,'COSC'>.

   ```
   INSERT into COURSE
   (`Course_name`,`Course_number`,`Credit_hours`,`Department`) values('Knowledge
   Engineering','COSC4390',3,'COSC');
   ```

   (d) [5 pts] Delete the record for the student whose name is 'Smith' and student number is 17.

   ```
   DELETE from STUDENT where Name = 'Smith' and Student_number = 17;
   ```

2. **For each update below, write SQL queries for the COMPANY database in Figure 5.6. Notice that some of these updates may violate integrity constraints as discussed before.**

   (a) [5 pts] Insert < 'Robert', 'F', 'Scott', '943775543', '21-JUN-42', '2365 Newcastle Rd, Bellaire, TX', M, 58000, '888665555', 1 > into EMPLOYEE.

   ```
   INSERT into EMPLOYEE values ('Robert', 'F', 'Scott', '943775543', '1942-06-21',
   '2365 Newcastle Rd, Bellaire, TX', 'M', 58000, '888665555', 1);
   ```

   Constraints: No Errors

(b) [5 pts] Insert < 'ProductA', 4, 'Bellaire', 2 > into PROJECT.

INSERT into PROJECT values('ProductA', 4, 'Bellaire', 2);

Constraints: Cannot add or update a child row. dnum is foreign key from Department table and there is no record in department table with dnum = 2.

(c) [5 pts] Insert < 'Production', 4, '943775543', '01-OCT-88' > into DEPARTMENT.

INSERT into DEPARTMENT values('Production', 4, 943775543, '1988-10-01')

Constraints: Duplicate entry. dnumber is primary key that means it should be unique. Since there is already a record with dnumber = 4 system throws a duplicate entry error.

(d) [5 pts] Insert < '677678989', null, '40.0' > into WORKS_ON.

INSERT into WORKS_ON values(677678989, null, '40.0')

Constraints: Primary key should always be not null. We cannot set the primary key value to null. Since we are trying to set pno = null system throws an error saying primary key should not be null.

(e) [5 pts] Insert < '453453453', 'John', M, '12-DEC-60', 'SPOUSE' > into DEPENDENT.

INSERT into DEPENDENT values(453453453, 'John', 'M', '1960-12-12', 'Spouse');

Constraints: No Error.

(f) [5 pts] Delete the WORKS_ON tuples with ESSN= '333445555'.

DELETE from WORKS_ON where ESSN= 333445555

Constraints: No Error.

(g) [5 pts] Delete the EMPLOYEE tuple with SSN= '987654321'.

DELETE from EMPLOYEE where SSN= '987654321';

Constraints: Cannot delete or update a parent row. SSN is foreign key in dependent table and there are records with ssn = 987654321. we can delete the primary keys only when there are no records in the foreign key referenced table

(h) [5 pts] Delete the PROJECT tuple with PNAME= 'ProductX'.

DELETE from PROJECT where Pname = 'ProductX'

Constraints: Cannot delete or update a parent row. pname = 'ProductX' cannot be deleted. Pname is a primary key in the project table and a foreign key in the works on table. If there is no value inserted in the foreign key referenced table and there is a relationship, we can delete the primary key value. To delete, first delete the value from the foreign key table, then delete from the primary key table.

(i) [5 pts] Modify the MGRSSN and MGRSTARTDATE of the DEPARTMENT tuple with DNUMBER=5 to '123456789' and '01-OCT-88', respectively.

UPDATE DEPARTMENT set Mgrssn = '123456789', Mgrstartdate = '1988-10-01' where Dnumber = 5;

Constraints: No Error.

(j) [5 pts] Modify the SUPERSSN attribute of the EMPLOYEE tuple with SSN= '999887777' to '943775543'.

UPDATE EMPLOYEE set superssn = 943775543 where ssn = '999887777'

Constraints: No Error.

(k) 5 pts] Modify the HOURS attribute of the WORKS_ON tuple with ESSN= '999887777' and PNO= 10 to '5.0'.

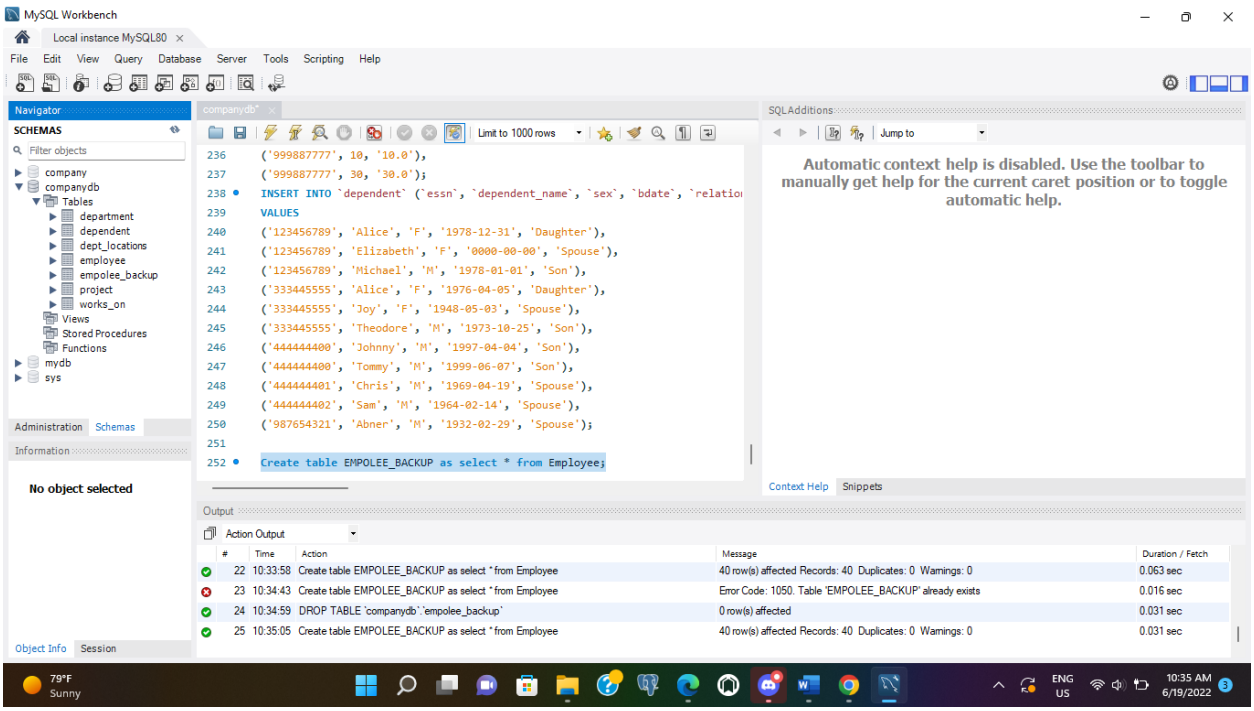
UPDATE WORKS_ON set Hours = 5.0 where ESSN = '999887777' and Pno = 10

Constraints: No Error.

3. Write SQL statements to create a table EMPOLEE_BACKUP to back up the EMPLOYEE table shown in Figure 5.6.

Create table EMPOLEE_BACKUP as select * from Employee;

Explanation: The above creates a Backup table for Employee with EMPOLEE_BACKUP We can check the schema in below screenshot where tables has another entity with EMPOLEE_BACKUP.


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
company
companydb
Tables
department
dependent
dept_locations
employee
empolee_backup
project
works_on
Views
Stored Procedures
Functions
mydb
sys
Administration Schemas
Information
No object selected
Object Info Session
companydb*
Limit to 1000 rows
('999887777', 10, '10.0'),
('999887777', 30, '30.0');
INSERT INTO `dependent` (`essn`, `dependent_name`, `sex`, `bdate`, `relatio
VALUES
('123456789', 'Alice', 'F', '1978-12-31', 'Daughter'),
('123456789', 'Elizabeth', 'F', '0000-00-00', 'Spouse'),
('123456789', 'Michael', 'M', '1978-01-01', 'Son'),
('333445555', 'Alice', 'F', '1976-04-05', 'Daughter'),
('333445555', 'Joy', 'F', '1948-05-03', 'Spouse'),
('333445555', 'Theodore', 'M', '1973-10-25', 'Son'),
('444444400', 'Johnny', 'M', '1997-04-04', 'Son'),
('444444400', 'Tommy', 'M', '1999-06-07', 'Son'),
('444444401', 'Chris', 'M', '1969-04-19', 'Spouse'),
('444444402', 'Sam', 'M', '1964-02-14', 'Spouse'),
('987654321', 'Abner', 'M', '1932-02-29', 'Spouse');
Create table EMPOLEE_BACKUP as select * from Employee;
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help Snippets
Output
Action Output
Time Action Message Duration / Fetch
22 10:33:58 Create table EMPOLEE_BACKUP as select * from Employee 40 row(s) affected Records: 40 Duplicates: 0 Warnings: 0 0.063 sec
23 10:34:43 Create table EMPOLEE_BACKUP as select * from Employee Error Code: 1050. Table 'EMPOLEE_BACKUP' already exists 0.016 sec
24 10:34:59 DROP TABLE `companydb`.`empolee_backup` 0 row(s) affected 0.031 sec
25 10:35:05 Create table EMPOLEE_BACKUP as select * from Employee 40 row(s) affected Records: 40 Duplicates: 0 Warnings: 0 0.031 sec
79°F
Sunny
ENG
US
10:35 AM
6/19/2022