

DBS Assignment – 8

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Batch:- A2

AIM:- To apply the concept of transaction on the given queries.

Experiments:

1. Creating Database and Tables:

```
mysql> create database Employment;
Query OK, 1 row affected (0.01 sec)

mysql> use Employment;
Database changed
mysql> create table employees(
  -> employee_id int(10) primary key not null,
  -> first_name char(30) not null,
  -> last_name char(30) not null,
  -> dept_code int(10),
  -> salary int(10) not null);
Query OK, 0 rows affected, 3 warnings (0.05 sec)

mysql> create table projects(
  -> project
  -> ^C
mysql> create table projects(
  -> project_id int(10) primary key not null,
  -> dept_code int(10) not null,
  -> description char(30),
  -> start_date date,
  -> end_date date,
  -> revenue int(10));
Query OK, 0 rows affected, 3 warnings (0.02 sec)

mysql> create table workson(
  -> project_id int(10) not null,
  -> employee_id int(10) not null,
  -> assigned time int(10));
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corre
ne 4
mysql> create table workson(
  -> project_id int(10) not null,
  -> employee_id int(10) not null,
  -> assigned_time int(10));
Query OK, 0 rows affected, 3 warnings (0.01 sec)

mysql> create table department(
  -> dept_code int(10) primary key not null,
  -> name char(10) not null,
  -> manager_id int(10) not null,
  -> sub_dept_of int(10));
Query OK, 0 rows affected, 3 warnings (0.02 sec)

mysql> |
```

2. Adding Data/ Records into the given tables:

```
mysql> insert into employees
-> values
-> (1001, 'Neeraj', 'Chormale', 2005, 1200000),
-> (1002, 'Onkar', 'Yaglewad', 2004, 800000),
-> (1003, 'Atharva', 'Phadatare', 2003, 700000),
-> (1004, 'Manas', 'Shetty', 2004, 600000),
-> (1005, 'Niraj', 'There', 2005, 900000),
-> (1006, 'Kiran', 'Biradar', 2004, 1000000),
-> (1007, 'Rohit', 'Kumbhar', 2005, 800000),
-> (1008, 'Shobhit', 'Dhami', 2004, 900000),
-> (1009, 'Sarwajeet', 'Singh', 2003, 1100000);
```

Query OK, 9 rows affected (0.03 sec)

Records: 9 Duplicates: 0 Warnings: 0

```
mysql> INSERT INTO Department
-> VALUES
-> (2001, 'Managemen', 1001, 2003),
-> (2002, 'SCSEA', 1003, 2001),
-> (2003, 'SBA', 1004, 2001),
-> (2004, 'SJMM', 1005, 2001),
-> (2005, 'CompScien', 1007, 2002),
-> (2006, 'CompAppli', 1008, 2002),
-> (2007, 'BusiAdm', 1009, 2003),
-> (2008, 'Journalis', 1010, 2004),
-> (2010, 'MassMedia', 1011, 2004);
```

Query OK, 9 rows affected (0.01 sec)

Records: 9 Duplicates: 0 Warnings: 0

```
mysql> INSERT INTO Projects
-> VALUES
-> (5001, 2005, 'Home Automation', '2023-12-10', '2023-12-15', 3000),
-> (5002, 2005, 'ECommerce Website', '2022-12-29', '2023-01-11', 10000),
-> (5003, 2005, 'Portfolio Website', '2022-11-10', '2023-02-09', 2000),
-> (5004, 2006, 'Drone Build', '2021-01-20', '2023-10-11', 129000),
-> (5005, 2008, 'Interviews', '2020-08-12', '2021-01-12', 12000),
-> (5006, 2007, 'Company Management', '2021-12-14', '2021-12-19', 1000),
-> (5007, 2010, 'Mass Communication', '2022-11-08', '2022-12-01', 2000),
-> (5008, 2007, 'Event Management', '2020-01-12', '2024-08-10', 12000),
-> (5009, 2005, 'ChatBot Build', '2022-07-02', '2024-10-28', 9000),
-> (5010, 2008, 'News Journalism', '2021-12-06', '2024-10-15', 19000);
```

Query OK, 10 rows affected (0.01 sec)

Records: 10 Duplicates: 0 Warnings: 0

```
mysql> INSERT INTO Workson
-> VALUES
-> (5001, 1005, 3),
-> (5002, 1003, 18),
-> (5003, 1001, 2),
-> (5004, 1001, 24),
-> (5005, 1008, 4),
-> (5006, 1010, 12),
-> (5007, 1007, 7),
-> (5008, 1006, 10),
-> (5010, 1009, 21);
Query OK, 9 rows affected (0.01 sec)
Records: 9 Duplicates: 0 Warnings: 0
```

3. Displaying all the tables:

```
mysql> table employees;
+-----+-----+-----+-----+-----+
| employee_id | first_name | last_name | dept_code | salary |
+-----+-----+-----+-----+-----+
|          1001 | Neeraj    | Chormale |         2005 | 1200000 |
|          1002 | Onkar     | Yaglewad |         2004 |  800000 |
|          1003 | Atharva   | Phadatare |         2003 |  700000 |
|          1004 | Manas     | Shetty   |         2004 |  600000 |
|          1005 | Niraj     | There    |         2005 |  900000 |
|          1006 | Kiran     | Biradar  |         2004 | 1000000 |
|          1007 | Rohit     | Kumbhar  |         2005 |  800000 |
|          1008 | Shobhit   | Dhami    |         2004 |  900000 |
|          1009 | Sarwajeet | Singh    |         2003 | 1100000 |
+-----+-----+-----+-----+-----+
9 rows in set (0.00 sec)
```

```
mysql> table department;
+-----+-----+-----+-----+
| dept_code | name       | manager_id | sub_dept_of |
+-----+-----+-----+-----+
|          2001 | Managemen |          1001 |          2003 |
|          2002 | SCSEA     |          1003 |          2001 |
|          2003 | SBA       |          1004 |          2001 |
|          2004 | SJMM      |          1005 |          2001 |
|          2005 | CompScien |          1007 |          2002 |
|          2006 | CompAppli |          1008 |          2002 |
|          2007 | BusiAdm   |          1009 |          2003 |
|          2008 | Journalis |          1010 |          2004 |
|          2010 | MassMedia |          1011 |          2004 |
+-----+-----+-----+-----+
9 rows in set (0.00 sec)
```

```
mysql> table projects;
```

project_id	dept_code	description	start_date	end_date	revenue
5001	2005	Home Automation	2023-12-10	2023-12-15	3000
5002	2005	ECommerce Website	2022-12-29	2023-01-11	10000
5003	2005	Portfolio Website	2022-11-10	2023-02-09	2000
5004	2006	Drone Build	2021-01-20	2023-10-11	129000
5005	2008	Interviews	2020-08-12	2021-01-12	12000
5006	2007	Company Management	2021-12-14	2021-12-19	1000
5007	2010	Mass Communication	2022-11-08	2022-12-01	2000
5008	2007	Event Management	2020-01-12	2024-08-10	12000
5009	2005	ChatBot Build	2022-07-02	2024-10-28	9000
5010	2008	News Journalism	2021-12-06	2024-10-15	19000

```
10 rows in set (0.00 sec)
```

```
mysql> table workson;
```

project_id	employee_id	assigned_time
5001	1005	3
5002	1003	18
5003	1001	2
5004	1001	24
5005	1008	4
5006	1010	12
5007	1007	7
5008	1006	10
5010	1009	21

```
9 rows in set (0.00 sec)
```

4. Adding all the Foreign Constraint in the given tables:

```
mysql> alter table Workson
-> add foreign key (project_id) references Projects(project_id),
-> add foreign key (employee_id) references employees(employee_id);
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> alter table employees
-> add foreign key (dept_code) references Department(dept_code);
Query OK, 0 rows affected (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> alter table Projects
-> add foreign key (dept_code) references Department(dept_code);
Query OK, 0 rows affected (0.06 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> alter table Department
-> add foreign key (manager_id) references employees(employee_id),
-> add foreign key (sub_dept_of) references Departmen(dept_code);
ERROR 1824 (HY000): Failed to open the referenced table 'departmen'
mysql> alter table Department
-> add foreign key (manager_id) references employees(employee_id),
-> add foreign key (sub_dept_of) references Department(dept_code);
Query OK, 0 rows affected (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

Question 1.

Begin the transaction using the START TRANSACTION statement. Then, select maximum income among the employee. Use the COMMIT statement to complete the transaction.

```
mysql> start transaction;
Query OK, 0 rows affected (0.00 sec)

mysql> select max(salary) as Income from employees;
+-----+
| Income |
+-----+
| 1200000 |
+-----+
1 row in set (0.01 sec)

mysql> Commit;
Query OK, 0 rows affected (0.00 sec)
```

Question 2.

Delete those records of employees whose first_name starts from 'Y' from the employee table and then COMMIT the changes in the database.

- i. Start Transaction and Deleting all the values where first name starts from 'Y':

```
mysql> start transaction;
Query OK, 0 rows affected (0.00 sec)

mysql> delete from employees where SUBSTR(first_name, 1, 1) = "Y";
Query OK, 0 rows affected (0.01 sec)

mysql> commit;
Query OK, 0 rows affected (0.00 sec)

mysql> table employees;
+-----+-----+-----+-----+-----+
| employee_id | first_name | last_name | dept_code | salary |
+-----+-----+-----+-----+-----+
| 1001 | Neeraj | Chormale | 2005 | 1200000 |
| 1002 | Onkar | Yaglewad | 2004 | 800000 |
| 1003 | Atharva | Phadatare | 2003 | 700000 |
| 1004 | Manas | Shetty | 2004 | 600000 |
| 1005 | Niraj | There | 2005 | 900000 |
| 1006 | Kiran | Biradar | 2004 | 1000000 |
| 1007 | Rohit | Kumbhar | 2005 | 800000 |
| 1008 | Shobhit | Dhami | 2004 | 900000 |
| 1009 | Sarwajeet | Singh | 2003 | 1100000 |
+-----+-----+-----+-----+-----+
9 rows in set (0.00 sec)

mysql> |
```

Question – 3:

Delete those records of employees whose last_name starts from 'B' from the employee table and then ROLLBACK the changes in the database by keeping Savepoints.

- i. Start Transaction and Deletion of the records where last name starts with 'B': ii. Defining the Save Point named 'point_1':

```
mysql> start transaction;
Query OK, 0 rows affected (0.01 sec)

mysql> savepoint point_1;\
Query OK, 0 rows affected (0.00 sec)

mysql> delete from employees where SUBSTR(last_name, 1, 1) = "B";
Query OK, 1 row affected (0.00 sec)

mysql> table employees;
+-----+-----+-----+-----+-----+
| employee_id | first_name | last_name | dept_code | salary |
+-----+-----+-----+-----+-----+
| 1001 | Neeraj | Chormale | 2005 | 1200000 |
| 1002 | Onkar | Yaglewad | 2004 | 800000 |
| 1003 | Atharva | Phadatare | 2003 | 700000 |
| 1004 | Manas | Shetty | 2004 | 600000 |
| 1005 | Niraj | There | 2005 | 900000 |
| 1007 | Rohit | Kumbhar | 2005 | 800000 |
| 1008 | Shobhit | Dhami | 2004 | 900000 |
| 1009 | Sarwajeet | Singh | 2003 | 1100000 |
+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

mysql> |
```

iii. Rolling back to the Savepoint & Commit :

```
mysql> ROLLBACK TO SAVEPOINT point_1;  
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> table employees;
```

employee_id	first_name	last_name	dept_code	salary
1001	Neeraj	Chormale	2005	1200000
1002	Onkar	Yaglewad	2004	800000
1003	Atharva	Phadatare	2003	700000
1004	Manas	Shetty	2004	600000
1005	Niraj	There	2005	900000
1006	Kiran	Biradar	2004	1000000
1007	Rohit	Kumbhar	2005	800000
1008	Shobhit	Dhami	2004	900000
1009	Sarwajeet	Singh	2003	1100000

```
9 rows in set (0.00 sec)
```

```
mysql> commit;  
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> |
```

Question – 4

Using a transaction, delete the Administration department and all of its sub departments.

```
mysql> start transaction;
Query OK, 0 rows affected (0.00 sec)

mysql> delete from department where name = "Managemen";
Query OK, 1 row affected (0.00 sec)

mysql> delete from department where sub_dept_of = 2001;
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key co
) REFERENCES `department` (`dept_code`))
mysql> delete from department where sub_dept_of = 2017;
Query OK, 0 rows affected (0.00 sec)

mysql> table departments;
ERROR 1146 (42S02): Table 'employment.departments' doesn't exist
mysql> table department;
+-----+-----+-----+-----+
| dept_code | name      | manager_id | sub_dept_of |
+-----+-----+-----+-----+
| 2002      | SCSEA     | 1003       | 2001        |
| 2003      | SBA       | 1004       | 2001        |
| 2004      | SJMM      | 1005       | 2001        |
| 2005      | CompScien | 1007       | 2002        |
| 2006      | CompAppli | 1008       | 2002        |
| 2007      | BusiAdm   | 1009       | 2003        |
| 2008      | Journalis | 1001       | 2004        |
| 2010      | MassMedia | 1001       | 2004        |
+-----+-----+-----+-----+
8 rows in set (0.00 sec)
```

Conclusion: Thus, we have successfully applied the concept of transaction on the given queries.