

QUẢN TRỊ DỮ LIỆU - CT467
BÀI THỰC HÀNH 3 - MYSQL NÂNG CAO (TT)
&-&

Bài 1: Tạo Trigger

1.

```
19  -- Câu 1
20  delimiter $$
21
22  • create trigger kiemtrahopleMaSV
23  before insert
24  on sinhvien
25  for each row
26  begin
27      if new.masv is null or new.masv = '' then
28          signal sqlstate '45000'
29          set message_text = "Mã SV không được trống";
30      end if;
31  end $$
32
33  • insert into sinhvien values ('', 'Lê Tuấn Đạt', 'CT12', '2021-10-01');
```

Output :

#	Time	Action	Message
✓ 1	14:02:06	create trigger kiemtrahopleMaSV before insert on sinhvien for each row begin if new.masv is null or new.masv = ...	0 row(s) affected
✗ 2	14:02:10	insert into sinhvien values ('', 'Lê Tuấn Đạt', 'CT12', '2021-10-01')	Error Code: 1644. Mã SV không được trống

2.

```
19  -- Câu 2
20  delimiter $$
21
22  • drop trigger if exists kiemtraxoaSV;
23  create trigger kiemtraxoaSV
24  before delete
25  on sinhvien
26  for each row
27  begin
28      if old.lopsv = 'CT12' then
29          signal sqlstate '45000'
30          set message_text = 'Không thể xóa sinh viên của lớp CT12';
31      end if;
32  end $$
33
34  delete from sinhvien where masv = 'B0003';
35
36  -- Câu 1
37  delimiter $$
38
```

Output :

#	Time	Action	Message
✓ 1	14:08:03	drop trigger if exists kiemtraxoaSV; create trigger kiemtraxoaSV before delete on sinhvien for each row begin if o...	0 row(s) affected
✗ 2	14:08:06	delete from sinhvien where masv = 'B0003'	Error Code: 1644. Không thể xóa sinh viên của lớp CT12

3.

```
19  -- Câu 3
20  delimiter $$
21
22  • drop trigger if exists TuDongCapNhatNgayNhapHoc;
23  create trigger TuDongCapNhatNgayNhapHoc
24  before insert
25  on sinhvien
26  for each row
27  begin
28      if new.ngaynhaphoc is null then
29          set new.ngaynhaphoc = curdate();
30      end if;
31  end $$
32
33  insert into sinhvien(masv, tensv, lopsv) value ('B0006', 'Lê Tuấn Đạt', 'CT13');
34  select * from sinhvien;
```

Result Grid

	masv	tensv	lopsz	ngaynhaphoc
	B0003	Trương Hải Hà	CT12	2022-10-02
	B0004	Lê Văn Cường	CT14	2023-09-01
	B0005	Dương Thanh	CT14	2023-09-09
	B0006	Lê Tuấn Đạt	CT13	2025-03-04
*	NULL	NULL	NULL	NULL

sinhvien 4 x

Output

Action Output

#	Time	Action	Message
✓ 1	14:21:33	drop trigger if exists TuDongCapNhatNgayNhapHoc; create trigger TuDongCapNhatNgayNhapHoc before ins...	0 row(s) affected
✓ 2	14:21:35	insert into sinhvien(masv, tensv, lopsv) value ('B0006', 'Lê Tuấn Đạt', 'CT13')	1 row(s) affected
✓ 3	14:21:37	select * from sinhvien LIMIT 0, 1000	6 row(s) returned

4.

```

19  -- Câu 4
20  delimiter $$
21  drop trigger if exists TuDongThemMaSV;
22  create trigger TuDongThemMaSV
23  before insert
24  on sinhvien
25  for each row
26  begin
27      if substring(new.masv, 1, 1) != 'B' then
28          set new.masv = concat('B', new.masv);
29      end if;
30  end;
31
32  insert into sinhvien value ('B0007', 'Nguyễn Văn A', 'CT15', curdate());
33  select * from sinhvien;

```

masv	tensv	lopsz	ngaynhaphoc
B0004	Lê Văn Cường	CT14	2023-09-01
B0005	Dương Thanh	CT14	2023-09-09
B0006	Lê Tuấn Đạt	CT13	2025-03-04
B0007	Nguyễn Văn A	CT15	2025-03-04
NULL	NULL	NULL	NULL

sinhvien 5

#	Time	Action	Message
4	14:24:49	drop trigger if exists TuDongThemMaSV; create trigger TuDongThemMaSV before insert on sinhvien for each ...	Running...
2	14:24:49	drop trigger if exists TuDongThemMaSV; create trigger TuDongThemMaSV before insert on sinhvien for each ...	Error Code: 2014 Commands out of sync; you can't run this command now
3	14:25:03	insert into sinhvien value ('B0007', 'Nguyễn Văn A', 'CT15', curdate())	1 row(s) affected
4	14:25:07	select * from sinhvien LIMIT 0, 1000	7 row(s) returned

5.

```

19  -- Câu 5
20  delimiter $$
21  drop trigger if exists GanGiaTriMacDinhLopSV;
22  create trigger GanGiaTriMacDinhLopSV
23  before insert
24  on sinhvien
25  for each row
26  begin
27      if new.lopsz is null or new.lopsz = '' then
28          set new.lopsz = 'CHUA XAC NHAN';
29      end if;
30  end;
31
32  insert into sinhvien value ('B0008', 'Lê Thị B', '', curdate());
33  select * from sinhvien;

```

masv	tensv	lopsz	ngaynhaphoc
B0005	Dương Thanh	CT14	2023-09-09
B0006	Lê Tuấn Đạt	CT13	2025-03-04
B0007	Nguyễn Văn A	CT15	2025-03-04
B0008	Lê Thị B	CHUA XAC NHAN	2025-03-04
NULL	NULL	NULL	NULL

sinhvien 6

#	Time	Action	Message
1	14:29:19	drop trigger if exists GanGiaTriMacDinhLopSV; create trigger GanGiaTriMacDinhLopSV before insert on sinhvi...	0 row(s) affected
2	14:29:21	insert into sinhvien value ('B0008', 'Lê Thị B', '', curdate())	1 row(s) affected
3	14:29:24	create database qlsv	Error Code: 1007. Can't create database 'qlsv'; database exists
4	14:29:28	select * from sinhvien LIMIT 0, 1000	8 row(s) returned

Bài 2: Sử dụng nhóm lệnh Transaction

6.

```
43 -- Câu 6
44 • start transaction;
45 • update trans1 set balance = 3000.00 where accountid = 1;
46 • update trans2 set balance = 4000.00 where accountid = 2;
47 • commit;
48
49 • select * from trans1, trans2;
50
51 -- Câu 5
```

Result Grid

	accountID	balance	accountID	balance
▶	1	3000.00	2	4000.00

Result 11 x

Output

Action Output

#	Time	Action	Message
✓ 1	14:37:54	start transaction	0 row(s) affected
✓ 2	14:37:54	update trans1 set balance = 3000.00 where accountid = 1	0 row(s) affected Rows matched: 1 Changed: 0 Warnings: 0
✓ 3	14:37:54	update trans2 set balance = 4000.00 where accountid = 2	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
✓ 4	14:37:54	commit	0 row(s) affected
✓ 5	14:37:56	select * from trans1, trans2 LIMIT 0, 1000	1 row(s) returned

7.

```
35 -- Câu 7
36 • start transaction;
37 • update trans1 set balance = balance - 1000.00 where accountid = 1;
38 • update trans2 set balance = balance + 1000.00 where accountid = 2;
39 • commit;
40
41 • select * from trans1, trans2;
42
```

Result Grid

	accountID	balance	accountID	balance
▶	1	2000.00	2	5000.00

Result 14 x

Output

Action Output

#	Time	Action	Message
✓ 5	14:40:36	select * from trans1, trans2 LIMIT 0, 1000	1 row(s) returned
✓ 6	14:40:41	start transaction	0 row(s) affected
✓ 7	14:40:41	update trans1 set balance = balance - 1000.00 where accountid = 1	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
✓ 8	14:40:41	update trans2 set balance = balance + 1000.00 where accountid = 2	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
✓ 9	14:40:41	commit	0 row(s) affected
✓ 10	14:40:46	select * from trans1, trans2 LIMIT 0, 1000	1 row(s) returned

8.

```

35  -- Câu 8
36  delimiter $$
37
38  • drop procedure if exists chuyentien $$
39  • create procedure chuyentien(in sotien decimal(10, 2))
40  begin
41      declare soDuTK1 decimal(10, 2);
42      select balance from trans1 where accountid = 1 into soDuTK1;
43      if soDuTK1 >= sotien then
44          update trans1 set balance = balance - sotien where accountid = 1;
45          update trans2 set balance = balance + sotien where accountid = 2;
46      else
47          rollback;
48          signal sqlstate '45000'
49          set message_text = 'Số dư tài khoản không đủ';
50      end if;
51  end $$
52
53  -- Câu 7

```

Output

Action Output

#	Time	Action	Message
1	14:45:52	drop procedure if exists chuyentien	0 row(s) affected, 1 warning(s): 1305 PROCEDURE qsv.chuyentien does not exist
2	14:45:52	create procedure chuyentien(in sotien decimal(10, 2)) begin declare soDuTK1 decimal(10, 2); select balance...	0 row(s) affected

```

53  start transaction;
54  call chuyentien(5000.00);
55  commit;
56
57  select * from trans1, trans2;

```

Result Grid

accountID	balance	accountID	balance
1	2000.00	2	5000.00

Result 15 x

Output

Action Output

#	Time	Action	Message
1	14:45:52	drop procedure if exists chuyentien	0 row(s) affected, 1 warning(s): 1305 PROCEDURE qsv.chuyentien does not exist
2	14:45:52	create procedure chuyentien(in sotien decimal(10, 2)) begin declare soDuTK1 decimal(10, 2); select balanc...	0 row(s) affected
3	14:46:38	start transaction call chuyentien(5000.00) commit	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL s...
4	14:46:59	start transaction	0 row(s) affected
5	14:46:59	call chuyentien(5000.00)	Error Code: 1644. Số dư tài khoản không đủ
6	14:47:07	select * from trans1, trans2 LIMIT 0, 1000	1 row(s) returned

Bài 3: Các mức cô lập (isolation) trong transaction

9.

```
35  -- Câu 9
36  •  start transaction;
37  •  set session transaction isolation level read uncommitted;
38  •  update trans1 set balance = balance - 100.00 where accountid = 1;
39  •  start transaction;
40  •  set session transaction isolation level read uncommitted;
41  •  update trans2 set balance = balance + 100.00 where accountid = 2;
42  •  select * from trans1, trans2;
43  •  commit;
44
```

Result Grid

accountID	balance	accountID	balance
1	1900.00	2	5100.00

Result 29 x

Output

Action Output

#	Time	Action	Message
✓ 2	15:12:04	set session transaction isolation level read uncommitted	0 row(s) affected
✓ 3	15:12:04	update trans1 set balance = balance - 100.00 where accountid = 1	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
✓ 4	15:12:04	start transaction	0 row(s) affected
✓ 5	15:12:04	set session transaction isolation level read uncommitted	0 row(s) affected
✓ 6	15:12:04	update trans2 set balance = balance + 100.00 where accountid = 2	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
✓ 7	15:12:04	select * from trans1, trans2 LIMIT 0, 1000	1 row(s) returned
✓ 8	15:12:04	commit	0 row(s) affected

Bài 4: Deadlock

10.

```
35  -- Câu 10
36  •  start transaction;
37  •  update trans1 set balance = balance + 1000.00 where accountid = 1;
38  •  do sleep(5);
39  •  start transaction;
40  •  update trans2 set balance = balance + 1000.00 where accountid = 2;
41  •  do sleep(5);
42  •  update trans1 set balance = balance - 1000.00 where accountid = 1;
43  •  commit;
44  •  update trans2 set balance = balance - 1000.00 where accountid = 2;
45  •  commit;
46
```

Result Grid

	accountID	balance	accountID	balance
▶	1	2000.00	2	5000.00

Result 32 x

Output

Action Output

#	Time	Action	Message
✓	5 15:15:31	update trans2 set balance = balance + 1000.00 where accountid = 2	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
✓	6 15:15:31	do sleep(5)	0 row(s) affected
✓	7 15:15:36	update trans1 set balance = balance - 1000.00 where accountid = 1	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
✓	8 15:15:36	commit	0 row(s) affected
✓	9 15:15:36	update trans2 set balance = balance - 1000.00 where accountid = 2	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
✓	10 15:15:36	commit	0 row(s) affected
✓	11 15:15:36	select * from trans1, trans2 LIMIT 0, 1000	1 row(s) returned