

THỰC HÀNH BUỔI 2

```
1 # Cau 1
2 DELIMITER $$
3 • create procedure THEM_SV(mssv char(8), hoten varchar(45), gioitinh char(1), ngaySinh date, noiSinh varchar(40), diaChi varchar(100), maKhoa char(8))
4 begin
5     INSERT INTO `sinhvien` (`mssv`, `hoten`, `gioiTinh`, `ngaySinh`, `noiSinh`, `DiaChi`, `maKhoa`) VALUES
6     (mssv, hoten, gioitinh, ngaySinh, noiSinh, diaChi, maKhoa);
7 End;
8 DELIMITER;
9 call THEM_SV('B2014946','Phan Phát Tài', 'M', '2002-01-23','Cần Thơ','Trần Nam Phú, Q.Ninh Kiều, TP Cần Thơ','CNTT&TT');
10
11
```

Output

Action Output					Message
#	Time	Action			
❌ 10	09:15:39	call THEM_SV('B2014946','Phan Phát Tài', 'M', '2002-01-23','Cần Thơ','Trần Nam Phú, Q.Ninh Kiều, TP Cần Thơ','CNTT&TT')			Error Code: 1452. Cannot add or update a child row: a foreign ke
✅ 11	09:17:24	SELECT * FROM dbms.khoa LIMIT 0, 1000			6 row(s) returned
✅ 12	09:18:41	call THEM_SV('B2014946','Phan Phát Tài', 'M', '2002-01-23','Cần Thơ','Trần Nam Phú, Q.Ninh Kiều, TP Cần Thơ','CNTT&TT')			1 row(s) affected
✅ 13	09:21:51	SELECT * FROM dbms.sinhvien LIMIT 0, 1000			11 row(s) returned

```

75  -- 5. Hàm xét tốt nghiệp trên sinh viên
76  DELIMITER $$
77  • create procedure TotNghiep(MaSV char(8))
78  BEGIN
79      DECLARE dem INT;
80      DECLARE hang FLOAT;
81      -- Tìm sinh viên
82      SET dem = (SELECT COUNT(*) FROM sinhvien WHERE mssv = MaSV);
83      if (dem > 0) then
84          SET hang = (SELECT SUM(kq.diem * hq.soTinChi)/SUM(hq.soTinChi) AS DiemTrungBinh
85                      FROM ketqua kq INNER JOIN hocphan hq ON kq.maHP = hq.maHP
86                      INNER JOIN sinhvien sv ON sv.mssv = kq.mssv
87                      WHERE kq.mssv = MaSV
88                      GROUP BY(sv.mssv));
89          if(hang > 4) then
90              SELECT 'TRUE';
91          else
92              SELECT 'FALSE';
93          END if;
94      else
95          SELECT '-1';

```

Result Grid Filter Rows: Export: Wrap Cell Content:

FALSE
▶ FALSE

Result Grid

Form Editor

Result 2 x

Read Only

Output

```

103 DELIMITER $$
104 • create procedure Loai_Tot_Nghiep(MaSV char(8))
105 BEGIN
106     DECLARE dem INT;
107     DECLARE hang FLOAT;
108     -- Tìm sinh viên
109     SET dem = (SELECT COUNT(*) FROM sinhvien WHERE mssv = MaSV);
110     if (dem > 0) then
111         SET hang = (SELECT SUM(kq.diem * hq.soTinChi)/SUM(hq.soTinChi) AS DiemTrungBinh
112             FROM ketqua kq INNER JOIN hocphan hq ON kq.maHP = hq.maHP
113                 INNER JOIN sinhvien sv ON sv.mssv = kq.mssv
114             WHERE kq.mssv = MaSV
115             GROUP BY(sv.mssv));
116         if(hang >= 9 or hang <=10) then
117             SELECT 'Xuất sắc';
118         ELSEIF (hang >= 8 or hang <= 8.9) then
119             SELECT 'Giỏi';
120         ELSEIF (hang >= 6.5 or hang <= 7.9) then
121             SELECT 'Khá';
122         ELSEIF (hang >= 5.5 or hang <= 6.5) then
123             SELECT 'Trung bình';
124         ELSEIF (hang >= 4 or hang < 5.5) then
125             SELECT 'Yếu';
126         ELSEIF (hang < 4) then
127             SELECT 'Kém';
128         END if;
129     else
130         SELECT '-1';
131     END if;

```

Result Grid Filter Rows: Export: Wrap Cell Content:

	Kém
►	Kém

ap tinCninn suatim kiemTruy vanCac cong cucuonTruy giup

Donate

Bộ lọc cơ sở dữ liệuBộ lọc bảng

localhost

- cacbaibat
- cuahangmypham
- information_sche...
- mysql
- performance_sch...
- phpmyadmin
- qlkiem112,0 KiB
- quanlysinhvienth...

Máy chủ: 127.0.0.1Cơ sở dữ liệu: qlkiemProcedure: SV_TOT_NGHIEPTruy vắn

```
1 DELIMITER $$
2 CREATE PROCEDURE SV_TOT_NGHIEP(MKhoa CHAR(8))
3 BEGIN
4     -- Khai báo biến lưu trữ dữ liệu từ con trỏ
5     DECLARE mssv CHAR(8);
6     DECLARE hoten VARCHAR(50);
7     DECLARE Tot_Nghiep FLOAT;
8     DECLARE LoaiTotNghiep VARCHAR(50);
9     DECLARE done INT DEFAULT 0;
10
11     -- Tạo con trỏ
12     DECLARE C CURSOR FOR
13     SELECT sv.mssv, sv.hoten, TotNghiep(sv.mssv), Loai_Tot_Nghiep(sv.mssv)
14     FROM ketqua kq
15     INNER JOIN hocphan hp ON kq.maHP = hp.maHP
16     INNER JOIN sinhvien sv ON sv.mssv = kq.mssv
17     INNER JOIN khoa k ON sv.makhoa = k.makhoa
18     WHERE k.makhoa = MKhoa
19     GROUP BY (sv.mssv);
20
21     -- Khai báo NOT FOUND handler để xử lý lỗi không tìm thấy dữ liệu
22     DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = 1;
23
```

Result #1 (1r x 4q)Result #2 (1r x 4q)Result #3 (1r x 4q)Result #4 (1r x 4q)

mssv	hoten	Tot_Nghiep	LoaiTotNghiep
B1234567	Nguyễn Thành Hải	0	Kém

XBộ lọcRegular expression

```
170 SHOW FUNCTION STATUS WHERE `Db`='qlkiem';
171 SHOW PROCEDURE STATUS WHERE `Db`='qlkiem';
172 SHOW TRIGGERS FROM `qlkiem`;
173 SELECT *, EVENT_SCHEMA AS `Db`, EVENT_NAME AS `Name` FROM information_schema.`EVENTS` WHERE `EVENT_SCHEMA`='qlkiem';
174 /* Table node "SV_TOT_NGHIEP" not found in tree. */
175 /* Entering session "localhost" */
176 CREATE PROCEDURE SV_TOT_NGHIEP(MKhoa CHAR(8)) BEGIN -- Khai báo biến lưu trữ dữ liệu từ con trỏ DECLARE mssv CHAR(8); DECLARE hoten VARCHAR(50); DECLARE Tot_Nghiep FL
177 CALL SV_TOT_NGHIEP('CNTT&TT');
178 /* Affected rows: 0 Found rows: 4 Warnings: 0 Duration for 2 queries: 0,125 sec. */
```

MySQL Workbench interface showing a database connection to 'localhost' and a query window.

Database Structure:

- Localhost
 - cacbaibat
 - cuahang...
 - informati...
 - mysql
 - performa...
 - phpmyad...
 - qldiem (112,0 KiB)
 - Bang...
 - DIEM_TB
 - hocphan (16,0 KiB)
 - ketqua (48,0 KiB)
 - khoa (16,0 KiB)
 - Loai_T...
 - sinhvien (32,0 KiB)
 - SL_SV_...
 - TotNg...
 - XOA_SV
 - quanlysin...

Query Window:

```
34
35
36 -- Hàm
37 DELIMITER $$
38 CREATE FUNCTION SL_SV_KHOA( TKhoa VARCHAR(50)) RETURNS INT
39 BEGIN
40 DECLARE dem INT;
41 DECLARE soLuong INT;
42 -- Tìm sinh viên
43 SET dem = (SELECT COUNT(*) FROM khoa WHERE tenKhoa = TKhoa);
44 IF (dem > 0) THEN
45 SET soLuong = (SELECT COUNT(*)
46 FROM sinhvien sv INNER JOIN khoa ON sv.maKhoa = khoa.maKhoa
47 WHERE khoa.tenKhoa = TKhoa
48 GROUP BY (khoa.maKhoa));
49 RETURN soLuong;
50 ELSE
51 RETURN -1;
52 END IF;
53 END;$$
54 DELIMITER ;
55
56 SELECT SL_SV_KHOA('Khoa Kinh Tế')
57
```

Result #1 (1r x 1q):

SL_SV_KHOA(Khoa Kinh Tế)
1

SQL Editor:

```
427 SELECT * FROM information_schema.KEY_COLUMN_USAGE WHERE TABLE_SCHEMA='qldiem' AND TABLE_NAME='khoa' AND REFERENCED_TABLE_NAME IS NOT NULL;
428 SHOW CREATE TABLE `qldiem`.`khoa` ;
429 SELECT CONSTRAINT_NAME, CHECK_CLAUSE FROM `information_schema`.`CHECK_CONSTRAINTS` WHERE CONSTRAINT_SCHEMA='qldiem' AND TABLE_NAME='khoa';
430 SELECT * FROM `qldiem`.`khoa` LIMIT 1000;
431 create procedure Loai_Tot_Nghiep(MaSV char(8)) BEGIN DECLARE dem INT; DECLARE hang FLOAT; -- Tìm sinh viên SET dem = (SELECT COUNT(*) FROM sinhvien WHERE mssv = MaSV);
432 /* SQL Error (1304): PROCEDURE Loai_Tot_Nghiep already exists */
433 /* Affected rows: 0 Found rows: 0 Warnings: 0 Duration for 0 of 4 queries: 0,000 sec. */
434 SELECT SL_SV_KHOA('Khoa Kinh Tế');
435 /* Affected rows: 0 Found rows: 1 Warnings: 0 Duration for 1 query: 0,016 sec. */
lập tin Chỉnh sửa tìm kiếm Truy vấn Các công cụ Đến trợ giúp
```

Database Structure:

- Localhost
 - cacbaibat
 - cuahangmypham
 - information_sche...
 - mysql
 - performance_sch...
 - phpmyadmin
 - qldiem (112,0 KiB)
 - quanlysinhvienth...

Query Window:

```
1 DELIMITER $$
2 CREATE PROCEDURE SV_Loai(in tenLoai VARCHAR(20))
3 BEGIN
4 SELECT mssv,hoten, Loai_Tot_Nghiep(mssv)
5 FROM sinhvien
6 WHERE Loai_Tot_Nghiep(mssv) = tenLoai;
7 END$$
8 DELIMITER ;
9
10 CALL SV_Loai('khá')
11
12
13
14
```

Result #1 (2r x 3q):

mssv	hoten	Loai_Tot_Nghiep(mssv)
B1345680	Trần Minh Tâm	Khá
B1459230	Lê Văn Khang	Khá

SQL Editor:

```
216 CREATE PROCEDURE SV_Loai(in tenLoai VARCHAR(20)) BEGIN SELECT mssv,hoten, Loai_Tot_Nghiep(mssv) FROM sinhvien WHERE Loai_Tot_Nghiep(mssv) = tenLoai; END;
217 /* Affected rows: 0 Found rows: 0 Warnings: 0 Duration for 1 query: 0,203 sec. */
218 SHOW CREATE PROCEDURE `qldiem`.`Bang_DIEM_TB`;SHOW CREATE PROCEDURE `qldiem`.`DIEM_TB`;SHOW CREATE TABLE `qldiem`.`hocphan`;SHOW CREATE TABLE `qldiem`.`ketqua`;SHOW CREATE TABLE `qldiem`.`
219 SHOW DATABASES;
220 /* Entering session "localhost" */
221 SELECT `DEFAULT_COLLATION_NAME` FROM `information_schema`.`SCHEMATA` WHERE `SCHEMA_NAME`='qldiem';
222 SHOW TABLE STATUS FROM `qldiem`;
223 SHOW FUNCTION STATUS WHERE `Db`='qldiem';
224 SHOW PROCEDURE STATUS WHERE `Db`='qldiem';
225 SHOW TRIGGERS FROM `qldiem`;
226 SELECT *, EVENT_SCHEMA AS `Db`, EVENT_NAME AS `Name` FROM information_schema.`EVENTS` WHERE `EVENT_SCHEMA`='qldiem';
227 SHOW CREATE PROCEDURE `qldiem`.`Bang_DIEM_TB`;SHOW CREATE PROCEDURE `qldiem`.`DIEM_TB`;SHOW CREATE TABLE `qldiem`.`hocphan`;SHOW CREATE TABLE `qldiem`.`ketqua`;SHOW CREATE TABLE `qldiem`.`
228 CALL SV_Loai(tenLoai)('khá');
229 /* SQL Error (1054): Unknown column 'tenLoai' in 'field list' */
230 /* Affected rows: 0 Found rows: 0 Warnings: 0 Duration for 0 of 1 query: 0,000 sec. */
231 CALL SV_Loai('khá');
232 /* Affected rows: 0 Found rows: 2 Warnings: 0 Duration for 1 query: 0,016 sec. */
```

localhost

>

cacbaicap

>

cuahangmypham

>

information_sche...

>

mysql

>

performance_sch...

>

phpmyadmin

>

qldiem 112.0 KiB

>

quanlysinhvienth...

1

2

3

4

5

6 DELIMITER \$\$

7 CREATE TRIGGER KhongXoaSinhVienSNTT BEFORE DELETE -- Sự kiện này bắt đầu trước sự kiện xóa

8 ON sinhvien

9 FOR EACH ROW -- Kiểm tra trên mỗi dòng

10 BEGIN

11 DECLARE mak VARCHAR(10);

12

13 SELECT makhoa INTO mak

14 FROM khoa

15 WHERE makhoa = OLD.makhoa;

16

17 IF OLD.makhoa = 'CNTT&TT' then

18 SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Không được quyền xóa sinh viên từ khoa CNTT&TT';

19 END IF;

20 END;\$\$

21 DELIMITER ;

22

23 DELETE FROM sinhvien WHERE makhoa = 'CNTT&TT';

24

25

26

27

28

localhost: Error

SQL Error (1644): Không được quyền xóa sinh viên từ khoa CNTT&TT

OK

Find some help on this error (=> [ecosia.org](https://dev.mysql.com/doc/mysql-errors/8.0/en/server-error-reference.html#error_er_1644))

X

Bộ lọc Regular expression

518 CREATE TRIGGER KhongXoaSinhVienSNTT BEFORE DELETE -- Sự kiện này bắt đầu trước sự kiện xóa ON sinhvien FOR EACH ROW -- Kiểm tra trên mỗi dòng BEGIN DECLARE mak VARCHAR(10); S

519 /* Affected rows: 0 Found rows: 0 Warnings: 0 Duration for 1 query: 0,234 sec. */

520 CREATE TRIGGER KhongXoaSinhVienSNTT BEFORE DELETE -- Sự kiện này bắt đầu trước sự kiện xóa ON sinhvien FOR EACH ROW -- Kiểm tra trên mỗi dòng BEGIN DECLARE mak VARCHAR(10); S

521 /* SQL Error (1359): Trigger 'qldiem.khongXoaSinhVienSNTT' already exists */

522 /* Affected rows: 0 Found rows: 0 Warnings: 0 Duration for 0 of 2 queries: 0,000 sec. */

523 DELETE FROM sinhvien WHERE makhoa = 'CNTT&TT';

524 /* SQL Error (1644): Không được quyền xóa sinh viên từ khoa CNTT&TT */

```

11  # Cau 2
12  DELIMITER $$
13  • create procedure XOA_SV(in p_mssv char(8))
14  begin
15      declare sv_count int;
16      select count(*) into sv_count
17      from sinhvien
18      where mssv = p_mssv;
19      if sv_count > 0 then
20          delete from ketQua where mssv = p_mssv;
21          delete from sinhvien where mssv = p_mssv;
22          select 'Xoa Thanh Cong' as result;
23      else
24          select 'MSSV khong ton tai' as result;
25      end if;
26  end;
27  DELIMITER;
28
29
30  call XOA_SV('B2014946');

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
result			
▶ Xoa Thanh Cong			



Result Grid



Form Editor



Result 4 × Read Only

Output

Action Output

	#	Time	Action	Message	Duration / Fetch
✓	14	09:32:50	create procedure XOA_SV(in p_mssv char(8)) beg...	0 row(s) affected	0.016 sec
✗	15	09:32:50	create procedure XOA_SV(in p_mssv char(8)) beg...	Error Code: 1064 You have an error in your SQL s...	
✓	16	09:33:18	call XOA_SV('B2014946')	1 row(s) returned	0.016 sec / 0.000 sec
✓	17	09:33:26	SELECT * FROM dbms.sinhvien LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec

```

32  # Cau 3
33  DELIMITER $$
34  • create procedure DIEM_TB (in p_mssv char(8), out p_diem_tb float)
35  begin
36      declare v_diemtb float;
37      set p_diem_tb = -1;
38
39      select avg(diem) into v_diemtb
40      from ketQua
41      where mssv = p_mssv;
42      if v_diemtb is not null then
43          set p_diem_tb = v_diemtb;
44      end if;
45  end;
46  DELIMITER;
47
48  call DIEM_TB ('B1234567', @diem_tb);
49  select @diem_tb as DiemTrungBinh;
50

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
DiemTrungBinh			
2.5			

Result Grid
Form Editor

Result 5 x					Read Only
Output					
Action Output					
#	Time	Action	Message	Duration / Fetch	
✓ 19	09:44:03	create procedure DIEM_TB (in p_mssv char(8), o...	0 row(s) affected	0.000 sec	
✗ 20	09:44:03	create procedure DIEM_TB (in p_mssv char(8), o...	Error Code: 1064 You have an error in your SQL s...		
✓ 21	09:44:15	call DIEM_TB ('B1234567', @diem_tb)	1 row(s) affected	0.000 sec	
✓ 22	09:44:31	select @diem_tb as DiemTrungBinh LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec	


```

52  # Cau 4
53  DELIMITER $$
54  • create procedure BANG_DIEM_TB (in p_makhua char(8))
55  begin
56      declare khoa_count int;
57      select count(*) into khoa_count
58      from khoa
59      where maKhoa = p_makhua;
60
61      if khoa_count > 0 then
62          select sinhvien.mssv, sinhvien.hoten, avg(ketQua.diem) as diemTrungBinh
63          from sinhvien
64          inner join ketQua on sinhvien.mssv = ketQua.mssv
65          where sinhvien.maKhoa = p_makhua
66          group by sinhvien.mssv, sinhvien.hoten;
67      else
68          select 'Ma khoa khong ton tai' as result;
69      end if;
70  end;
71  DELIMITER;
72  call BANG_DIEM_TB('CNTT&TT');
73

```

Result Grid Filter Rows: Export: Wrap Cell Content:

	mssv	hoten	diemTrungBinh
▶	B1234567	Nguyễn Thành Hải	2.5
	B1234568	Trần Thanh Mai	8.5
	B1234569	Trần Thu Thủy	8.5
	B1345678	Trần Hồng Trúc	6
	B1345679	Bùi Hoàng Yến	3.5

Result Grid
Form Editor

Result 6 x Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✖ 23	10:13:12	create procedure BANG_DIEM_TB (in p_makhua...	Error Code: 1064. You have an error in your SQL s...	0.000 sec
✔ 24	10:14:01	create procedure BANG_DIEM_TB (in p_makhua...	0 row(s) affected	0.000 sec
✖ 25	10:14:01	create procedure BANG_DIEM_TB (in p_makhua...	Error Code: 1064 You have an error in your SQL s...	
✔ 26	10:14:10	call BANG_DIEM_TB('CNTT&TT')	5 row(s) returned	0.000 sec / 0.000 sec