



دانشگاه صنعتی امیرکبیر
(پلی تکنیک تهران)

تمرین پنجم درس آزمایشگاه پایگاه داده
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```
create table hw5.book
(
    id int identity primary key,
    bookName nvarchar(30),
    yearPublish int,
    authorName nvarchar(40),
    QTY int,
)
```

(۱)

```
create trigger noChange on hw5.book
instead of insert
as
begin
    print 'No changes was done'
end

insert into hw5.book (bookName, yearPublish, authorName, QTY) values
('Book1', 2000, 'Author1', 10)
master> insert into hw5.book (bookName, yearPublish, authorName, QTY) values ('Book1', 2000, 'Author1', 10)
No changes was done
[2024-05-28 06:07:48] 1 row affected in 20 ms
```

(۲)

```
create table hw5.book_audit
(
    ins_or_del int,
    bookName nvarchar(30),
    yearPublish int,
    authorName nvarchar(40),
    QTY int,
)

disable trigger noChange on hw5.book

create trigger audit on hw5.book
after insert, delete
as
declare @ins_or_del int
select @ins_or_del = 1
insert into hw5.book_audit (ins_or_del, bookName, yearPublish,
authorName, QTY) select @ins_or_del, bookName, yearPublish, authorName, QTY
from inserted
select @ins_or_del = 0
insert into hw5.book_audit (ins or del, bookName, yearPublish,
```

```
authorName, QTY) select @ins_or_del, bookName, yearPublish, authorName, QTY
from deleted

insert into hw5.book (bookName, yearPublish, authorName, QTY) values
('Book2', 2001, 'Author2', 20)
insert into hw5.book (bookName, yearPublish, authorName, QTY) values
('Book3', 2002, 'Author3', 30)
delete from hw5.book where id = 1
select * from hw5.book_audit
```

Output master.hw5.book_audit					
	ins_or_del	bookName	yearPublish	authorName	QTY
1	1	Book2	2001	Author2	20
2	1	Book3	2002	Author3	30
3	0	Book2	2001	Author2	20

(۳)

```
create trigger provokeBookNameChange on hw5.book
after update
as
if exists(
select 1
from inserted, deleted
where inserted.bookName <> deleted.bookName
) begin
print 'Book name cannot be changed'
rollback
end
```

```
select * from hw5.book
update hw5.book set bookName = 'Book4' where id = 2
```

```
master> update hw5.book set bookName = 'Book4' where id = 2
[2024-05-28 06:23:36] [S0001][3609] Line 1: The transaction ended in the trigger. The batch has been aborted.
Book name cannot be changed
```

Output master.hw5.book					
	id	bookName	yearPublish	authorName	QTY
1	2	Book3	2002	Author3	30

(۴)

```
insert into hw5.book (bookName, yearPublish, authorName, QTY) values
('Book5', 2003, 'Author3', 50)
insert into hw5.book (bookName, yearPublish, authorName, QTY) values
('Book6', 2004, 'Author6', 60)
insert into hw5.book (bookName, yearPublish, authorName, QTY) values
('Book7', 2005, 'Author6', 70)
insert into hw5.book (bookName, yearPublish, authorName, QTY) values
('Book8', 2006, 'Author7', 80)
```

```
create view bookQTY as
    select bookName, authorName, QTY from hw5.book

create or alter trigger updateQTY on bookQTY
    instead of insert
    as
    begin
        update hw5.book
        set QTY = 1000
        where QTY < 1000
    end

disable trigger provokeBookNameChange on hw5.book

insert into bookQTY (bookName, authorName, QTY) values ('Book9', 'Author9',
900)
insert into bookQTY (bookName, authorName, QTY) values ('Book10', 'Author10',
1100)
select * from bookQTY
```

Before

	bookName	authorName	QTY
1	Book5	Author3	50
2	Book6	Author6	60
3	Book7	Author6	70
4	Book8	Author7	80

After

	bookName	authorName	QTY
1	Book5	Author3	1000
2	Book6	Author6	1000
3	Book7	Author6	1000
4	Book8	Author7	1000
5	Book9	Author9	1000
6	Book10	Author10	1100

(۵)

```
create or alter trigger preventBookDrop
on database
for DROP_TABLE
as
begin
    declare @EventData XML;
    set @EventData = EVENTDATA();

    if @EventData.value('(/EVENT_INSTANCE/ObjectName)[1]', 'SYSNAME') =
```

```
'book'
  begin
    print 'Cannot drop the book table'
    rollback transaction
  end
end

drop table hw5.book
master> drop table hw5.book
[2024-05-28 07:13:04] [S0002][3609] Line 1: The transaction ended in the trigger. The batch has been aborted.
Cannot drop the book table
```

