HW5

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4.7

employee:

```
alter table employee add primary key ID
```

works:

```
alter table works add primary key ID
alter table works add constraint e-ID foreign key(ID) reference employee
alter table works add constraint C-name foreign key(company_name) reference
company
```

company:

```
alter table company add primary key company_name
```

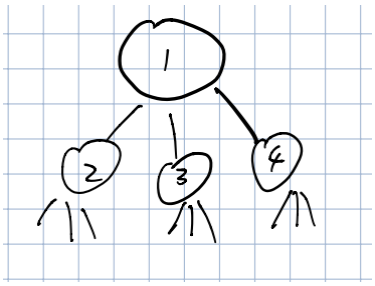
manages:

```
alter table managas add primary key ID
alter table works add constraint e-ID foreign key(ID) reference employee
```

4.9

All employees of the manages , direct or indirect will be removed step by step

for example:



when 1 is removed ,then is 2,3,4 will be removed,then...

4.12

The user include could be changed (Ex. a user name or ID in the company , but the man might leave the company , but the another user also work in the company),we should select a authorizations to finish the work by someone in the authorizations.

5.6

branch (*branch_name*, *branch_city*, *assets*)
customer (*customer_name*, *customer_street*, *cust omer_city*)
loan (*loan_number*, *branch_name*, *amount*)
borrower (*customer_name*, *loan_number*)
account (*account_number*, *branch_name*, *balance*)
depositor (*customer_name*, *account_number*)

Figure 5.21 Banking database for Exercise 5.6.

Insertion:

```
define trigger insert_into_branch_cust_via_depositor
after insert on depositor
referencing new table as inserted for each statement
insert into branch_cust
select branch_name, customer_name
from inserted, account
where inserted.account_number = account.account_number

define trigger insert_into_branch_cust_via_account
after insert on account
referencing new table as inserted for each statement
insert into branch_cust
select branch_name, customer_name
from depositor, inserted
where depositor.account_number = inserted.account_number
```

Deletion:

```
define trigger insert_into_branch_cust_via_depositor
after insert on depositor
referebcing old table as deleted for each statement
delete from branch_name
select branch_name, customer_name
from deleted,account
where deleted.account_number=account.account_number

define trigger insert_into_branch_cust_via_depositor
after insert on account
rederencing old table as deleted for each statement
delete from branch_cust
select branch_name,customer_name
from deleted,account
where depositor.account_number=deleted.account_number
```

5.15

```
create function avg_salary(cname carchar (15))
return integer
declare result integer
select avg(salary) into result
form works
where works.company_name=cname
return results
end

select company_name
from works
where avg_salary(company_name)> avg_salary("First Bank")

```