SQL

Site 1:

CREATE TABLE employee (

ID varchar(20) NOT NULL,

fname varchar(30) NOT NULL,

lname varchar(30) NOT NULL,

emp\_type varchar(20),

salary numeric(10, 2),

ssn varchar(11) UNIQUE NOT NULL,

age int,

library\_id varchar(20),

street\_number numeric(5) NOT NULL,

street\_name varchar(20) NOT NULL,

zip varchar(20) NOT NULL,

city varchar(20) NOT NULL,

state varchar(20) NOT NULL,

country varchar(20) NOT NULL,

check (age > 18)

);

insert into employee values ('emp1','employee1','nln','fulltime',50000.00,'011-02-0023',23,'lib01','126','leader ln','77701','Plano','TX','USA');

insert into employee values ('emp2','employee2','nln','fulltime',50000.00,'011-02-0023',23,'lib02','126','reader ln','77702','Dallas','TX','USA');

insert into employee values ('emp3','employee3','nln','fulltime',50000.00,'011-02-0024',23,'lib03','126','writer ln','77703','Mesa','AZ','USA');

insert into employee values ('emp4','employee4','nln','fulltime',50000.00,'011-02-0025',23,'lib04','126','publisher ln','77704','Burbank','CA','USA');

insert into employee values ('emp5','employee5','nln','fulltime',50000.00,'011-02-0026',23,'lib05','126','member ln','77705','Boulder','CO','USA');

insert into employee values ('emp6','employee6','nln','contract',60000.00,'016-02-0026',23,'lib06','126','cluster rd','77706','St. Louis','MO','USA');

insert into employee values ('emp7','employee7','nln','contract',60000.00,'017-02-0026',23,'lib07','129','member ln','77705','Jamaica','NY','USA');

insert into employee values ('emp8','employee8','nln','contract',60000.00,'018-02-0026',23,'lib08','112','member ln','77705','Newark','NJ','USA');

insert into employee values ('emp9','employee9','nln','part-time',20000.00,'019-02-0026',23,'lib09','115','member ln','77705','York','PA','USA');

insert into employee values ('emp10','employee10','nln','part-time',20000.00,'010-02-0026',23,'lib10','118','member ln','77705','Jackson','AL','USA');

CREATE TABLE reservation (

ID varchar(20) NOT NULL,

reserve\_item varchar(30),

item\_type varchar(30) ,

reserved\_by varchar(20)

);

insert into reservation values('res1','book','fiction','mem1');

insert into reservation values('res2','CD','fiction','mem1');

insert into reservation values('res3','Magazine','Adventure','mem2');

insert into reservation values('res4','Book','Comic','mem3');

insert into reservation values('res5','CD','Comedy','mem4');

insert into reservation values('res6','DVD','Action','mem5');

insert into reservation values('res7','Book','fiction','mem6');

insert into reservation values('res8','Magazine','Fantasy','mem7');

insert into reservation values('res9','Book','Mystery','mem7');

insert into reservation values('res10','Book','Mystery','mem6');

insert into reservation select \* from reservation@link2 where item\_type='fiction';

CREATE TABLE return (

ID varchar(20) NOT NULL,

return\_item varchar(30),

item\_type varchar(30) ,

due\_date date,

return\_date date,

exceed\_due number,

return\_by varchar(20)

);

insert into return values('ret1','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/13','YYYY/MM/DD'),1,'mem1');

insert into return values('ret2','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem2');

insert into return values('ret3','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem3');

insert into return values('ret4','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem3');

insert into return values('ret5','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem1');

insert into return values('ret6','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem5');

insert into return values('ret7','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem7');

insert into return values('ret8','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem8');

insert into return values('ret9','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem9');

insert into return values('ret10','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/13','YYYY/MM/DD'),1,'mem7');

insert into return select \* from return@link2 where exceed\_due=1;

Site 2:

CREATE TABLE employee (

ID varchar(20) NOT NULL,

fname varchar(30) NOT NULL,

lname varchar(30) NOT NULL,

emp\_type varchar(20),

salary numeric(10, 2),

ssn varchar(11) UNIQUE NOT NULL,

age int,

library\_id varchar(20),

street\_number numeric(5) NOT NULL,

street\_name varchar(20) NOT NULL,

zip varchar(20) NOT NULL,

city varchar(20) NOT NULL,

state varchar(20) NOT NULL,

country varchar(20) NOT NULL,

check (age > 18)

);

insert into employee values ('emp1','employee1','nln','fulltime',50000.00,'011-02-0023',23,'lib01','126','leader ln','77701','Plano','TX','USA');

insert into employee values ('emp2','employee2','nln','fulltime',50000.00,'011-02-0023',23,'lib02','126','reader ln','77702','Dallas','TX','USA');

insert into employee values ('emp3','employee3','nln','fulltime',50000.00,'011-02-0024',23,'lib03','126','writer ln','77703','Mesa','AZ','USA');

insert into employee values ('emp4','employee4','nln','fulltime',50000.00,'011-02-0025',23,'lib04','126','publisher ln','77704','Burbank','CA','USA');

insert into employee values ('emp5','employee5','nln','fulltime',50000.00,'011-02-0026',23,'lib05','126','member ln','77705','Boulder','CO','USA');

insert into employee values ('emp6','employee6','nln','contract',60000.00,'016-02-0026',23,'lib06','126','cluster rd','77706','St. Louis','MO','USA');

insert into employee values ('emp7','employee7','nln','contract',60000.00,'017-02-0026',23,'lib07','129','member ln','77705','Jamaica','NY','USA');

insert into employee values ('emp8','employee8','nln','contract',60000.00,'018-02-0026',23,'lib08','112','member ln','77705','Newark','NJ','USA');

insert into employee values ('emp9','employee9','nln','part-time',20000.00,'019-02-0026',23,'lib09','115','member ln','77705','York','PA','USA');

insert into employee values ('emp10','employee10','nln','part-time',20000.00,'010-02-0026',23,'lib10','118','member ln','77705','Jackson','AL','USA');

insert into reservation select \* from employee@link2 where salary <= 30000;

CREATE TABLE reservation (

ID varchar(20) NOT NULL,

reserve\_item varchar(30),

item\_type varchar(30) ,

reserved\_by varchar(20)

);

insert into reservation values('res1','book','fiction','mem1');

insert into reservation values('res2','CD','fiction','mem1');

insert into reservation values('res3','Magazine','Adventure','mem2');

insert into reservation values('res4','Book','Comic','mem3');

insert into reservation values('res5','CD','Comedy','mem4');

insert into reservation values('res6','DVD','Action','mem5');

insert into reservation values('res7','Book','fiction','mem6');

insert into reservation values('res8','Magazine','Fantasy','mem7');

insert into reservation values('res9','Book','Mystery','mem7');

insert into reservation values('res10','Book','Mystery','mem6');

insert into reservation select \* from reservation@link2 where item\_type='mystery';

CREATE TABLE return (

ID varchar(20) NOT NULL,

return\_item varchar(30),

item\_type varchar(30) ,

due\_date date,

return\_date date,

exceed\_due number,

return\_by varchar(20)

);

insert into return values('ret1','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/13','YYYY/MM/DD'),1,'mem1');

insert into return values('ret2','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem2');

insert into return values('ret3','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem3');

insert into return values('ret4','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem3');

insert into return values('ret5','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem1');

insert into return values('ret6','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem5');

insert into return values('ret7','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem7');

insert into return values('ret8','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem8');

insert into return values('ret9','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem9');

insert into return values('ret10','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/13','YYYY/MM/DD'),1,'mem7');

insert into return select \* from return@link2 where exceed\_due=2;

Site 3:

-- Show telephone numbers of library users from California

select fname, contact as phone\_number

from lib\_member, lib\_member\_contact@link3

where lib\_member.ID = lib\_member\_contact.ID and lib\_member\_contact.type = 'phone' and lib\_member.state = 'CA';

-- List library users who never reserved mystery books and never reserved fiction books

select fname

from lib\_member@link3

join borrow

on lib\_member.ID = borrow.member\_id

join reservation

on lib\_member.ID = reservation.member\_id WHERE

reservation.book\_id NOT IN (SELECT ISBN FROM book WHERE category\_id = 'cat01')

AND reservation.book\_id NOT IN (SELECT ISBN FROM book WHERE category\_id = 'cat05');

 Show library users who have returned books late more than two times



select fname from lib\_member where ID in (select member\_id from borrow where return\_date is null and totaldays>2);

-- Delete library users with 10 or more lost books

delete \* from lib\_member@link3 where lib\_member.ID in (select member\_id from borrow where return\_date is null and totaldays > 10);

Site 4:

1. Show telephone numbers of library users NOT from California

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create table lib\_member\_phone

(

ID varchar(20),

library\_id varchar(20),

phone\_number varchar(25),

primary key (ID,library\_id)

);

insert into lib\_member\_phone

select ID, library\_id, contact as phone\_number

from lib\_member@link2 a

join lib\_member\_contact b

on a.ID = b.ID AND a.library\_id = b.library\_id

where b.type = 'phone' and (a.country != 'USA' or a.country = 'USA' and a.state != 'CA');

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2. Show library users who have never returned books late

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create table ontime\_return\_member(

ID varchar(20) not null,

library\_id varchar(20) not null,

fname varchar(20) not null,

lname varchar(20) not null

);

insert into ontime\_return\_member

select a.ID, a.library\_id, a.fname, a.lname

from lib\_member a

where exists (

select \*

from borrow b

where a.ID = b.member\_id and a.library\_id = b.library\_id

and to\_date(b.return\_date, 'YYYY-DD-MM') <= to\_date(b.due\_date, 'YYYY-DD-MM')

);

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3. Update salaries with a 15% increase for those employees with 15 or more years working with the library system

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create table employee

(ID varchar(20) not null,

fname varchar(30) not null,

lname varchar(30) not null,

username varchar(30) not null,

upassword varchar(30) not null,

emplymnt\_date date not null,

emp\_type varchar(20),

salary numeric(10,2),

ssn varchar(11) unique not null,

age int,

role\_id varchar(20),

library\_id varchar(20),

street\_number numeric(5) not null,

street\_name varchar(20) not null,

zip varchar(20) not null,

city varchar(20) not null,

state varchar(20) not null,

country varchar(20) not null,

admin\_id varchar(20),

e\_code varchar(5),

foreign key (role\_id) references role (id)

on delete set null,

foreign key (admin\_id) references administrator (id)

on delete set null,

foreign key (library\_id) references library\_branch (id)

on delete set null,

primary key (ID),

check (age>18)

);

insert into employee select \* from employee@link2

update employee

set salary = 1.15\*salary

where months\_between(current\_date, emplymnt\_date)/12 >= 15

Site 5:

CREATE TABLE employee (

ID varchar(20) NOT NULL,

fname varchar(30) NOT NULL,

lname varchar(30) NOT NULL,

emp\_type varchar(20),

salary numeric(10, 2),

ssn varchar(11) UNIQUE NOT NULL,

age int,

library\_id varchar(20),

street\_number numeric(5) NOT NULL,

street\_name varchar(20) NOT NULL,

zip varchar(20) NOT NULL,

city varchar(20) NOT NULL,

state varchar(20) NOT NULL,

country varchar(20) NOT NULL,

check (age > 18)

);

insert into employee values ('emp1','employee1','nln','fulltime',50000.00,'011-02-0023',23,'lib01','126','leader ln','77701','Plano','TX','USA');

insert into employee values ('emp2','employee2','nln','fulltime',50000.00,'011-02-0023',23,'lib02','126','reader ln','77702','Dallas','TX','USA');

insert into employee values ('emp3','employee3','nln','fulltime',50000.00,'011-02-0024',23,'lib03','126','writer ln','77703','Mesa','AZ','USA');

insert into employee values ('emp4','employee4','nln','fulltime',50000.00,'011-02-0025',23,'lib04','126','publisher ln','77704','Burbank','CA','USA');

insert into employee values ('emp5','employee5','nln','fulltime',50000.00,'011-02-0026',23,'lib05','126','member ln','77705','Boulder','CO','USA');

insert into employee values ('emp6','employee6','nln','contract',60000.00,'016-02-0026',23,'lib06','126','cluster rd','77706','St. Louis','MO','USA');

insert into employee values ('emp7','employee7','nln','contract',60000.00,'017-02-0026',23,'lib07','129','member ln','77705','Jamaica','NY','USA');

insert into employee values ('emp8','employee8','nln','contract',60000.00,'018-02-0026',23,'lib08','112','member ln','77705','Newark','NJ','USA');

insert into employee values ('emp9','employee9','nln','part-time',20000.00,'019-02-0026',23,'lib09','115','member ln','77705','York','PA','USA');

insert into employee values ('emp10','employee10','nln','part-time',20000.00,'010-02-0026',23,'lib10','118','member ln','77705','Jackson','AL','USA');

insert into reservation select \* from employee@link2 where salary> 40000 and salary< 60000;

CREATE TABLE reservation (

ID varchar(20) NOT NULL,

reserve\_item varchar(30),

item\_type varchar(30) ,

reserved\_by varchar(20)

);

insert into reservation values('res1','book','fiction','mem1');

insert into reservation values('res2','CD','fiction','mem1');

insert into reservation values('res3','Magazine','Adventure','mem2');

insert into reservation values('res4','Book','Comic','mem3');

insert into reservation values('res5','CD','Comedy','mem4');

insert into reservation values('res6','DVD','Action','mem5');

insert into reservation values('res7','Book','fiction','mem6');

insert into reservation values('res8','Magazine','Fantasy','mem7');

insert into reservation values('res9','Book','Mystery','mem7');

insert into reservation values('res10','Book','Mystery','mem6');

insert into reservation select \* from reservation@link2 where item

\_type='fiction' or item\_type='Mystery';

CREATE TABLE return (

ID varchar(20) NOT NULL,

return\_item varchar(30),

item\_type varchar(30) ,

due\_date date,

return\_date date,

exceed\_due number,

return\_by varchar(20)

);

insert into return values('ret1','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/13','YYYY/MM/DD'),1,'mem1');

insert into return values('ret2','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem2');

insert into return values('ret3','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem3');

insert into return values('ret4','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem3');

insert into return values('ret5','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem1');

insert into return values('ret6','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem5');

insert into return values('ret7','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem7');

insert into return values('ret8','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem8');

insert into return values('ret9','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/12','YYYY/MM/DD'),0,'mem9');

insert into return values('ret10','book','fiction',TO\_DATE('2005/04/12','YYYY/MM/DD'),TO\_DATE('2005/04/13','YYYY/MM/DD'),1,'mem7');

insert into return select \* from return@link2 where exceed\_due>4;