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1/
create table vins ( nvin number constraint pk_nvin_vins primary key not null,
             nomcru varchar2(10) not null,
             annee number default 1980 not null,
             degres number(3,1),
             prix number);
create table recolte (nvrec number Constraint fK_nvec_recolte references vins(nvin) not null,
            refprod number not null,
            datrec date,
            qtrec number default 0 not null,
            constraint pk_recolte primary key(nvrec,refprod,datrec));
create table producteurs (refprod number constraint pk_producteurs primary key,
              nomprod varchar2(12) default '',
              region varchar2(10) default '');
create table acheteurs (numach number constraint pk_acheteurs primary key,
              nomach varchar2(10) not null,
              typbuv varchar2(5) default ' 'not null constraint ck_typbuv_acheteur check (typbuv in
('PETIT','MOYEN','GRAND')));
create table achat (nvin number not null,
           nachet number not null constraint fk_achat references acheteurs(numach),
           qte number default 0 not null,
           cpt number constraint pk_achat primary key);
alter table recolte modify (refprod number constraint fk_recolte references producteurs(refprod));
alter table vins modify(annee number constraint ck_annee_vins check (annee>1980));
alter table achat modify(qte number constraint ck_qte_achat check (qte>0));
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alter table acheteurs drop constraint ck_typbuv_acheteur;

alter table vins modify(prix number(4,2));	
commit;	

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2/
insert into acheteurs values (1, 'Hardy', 'GROS');
insert into acheteurs values (2, 'Duchenne', 'MOYEN');
insert into acheteurs values (3,'Bernardin','PETIT');
insert into acheteurs values (4,'Dreyfus','PETIT');
insert into producteurs values (1, 'Knock', 'BEAUJOLAIS');
insert into producteurs values (2, 'Marchand', 'LOIRE');
insert into producteurs values (3,'Bouteiller','BORDEAUX');
insert into producteurs values (4,'Smith','SUD-OUEST');
insert into achat values (1,9,12,1);
insert into achat values (1,4,7,2);
insert into achat values (1,1,10,3);
insert into achat values (1,5,12,4);
insert into achat values (1,6,9,5);
insert into vins values (1,'St Amour', 1983, 11.5, 31);
insert into vins values (2, 'Pomerol', 1982, 11.6, 29);
insert into vins values (3, 'Chenas', 1986, 11.3, 32.5);
insert into vins values (4, 'Gamay', 1985, 11.4, 26);
insert into vins values (5, 'Riesling', 1983, 11.9, 23.5);
insert into recolte values(1,1,'15/09/1983',62);
insert into recolte values (1,6,'17/09/1983',158);
insert into recolte values (2,3,'29/08/1982',25);
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insert into recolte values (3,11,'05/10/1986',130);

commit;

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3.1/
select nomcru from vins order by nomcru;
3.2/
select distinct region from producteurs;
3.3/
select refprod, nomprod from producteurs
where region in ('SAVOIE', 'BEAUJOLAIS');
3.4/
select nomach as sobre from acheteurs
where typbuv = 'PETIT';
3.5/
select nvin as vin, nachet from achat
order by nachet desc, vin;
3.6/
create table jeune as select nomcru, degres from vins
where annee>1985;
select * from jeune;
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4.1/
select nachet from achat
where nvin = any(select nvin from vins where prix>30);
4.2/
select nvrec, nomprod, region from recolte, producteurs
where recolte.refprod = producteurs.refprod and qtrec>100;
4.3/
select distinct nvrec from recolte
where refprod = any (select refprod from producteurs where region = 'BOURGOGNE');
4.4/
select count(*) as Nbre_Buveurs_Moy from acheteurs
where typbuv = 'MOYEN';
4.5/
select count(*) as nachet, sum(qte) as qte_acheté from achat
where nvin = 7;
4.6/
select sum(qte*prix) from vins, acheteurs, achat
where vins.nvin=achat.nvin and achat.nachet=acheteurs.numach
group by numach
having numach = (select numach from acheteurs where nomach = 'Hardy');
4.7/
select avg(prix) from vins, achat
where vins.nvin=achat.nvin
group by nachet
having nachet = 9;
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4.8/
select nomprod from producteurs
where refprod = any(select refprod from recolte where qtrec=45);
4.9/
select nomach from acheteurs
where numach = any(select a1.nachet from achat a1, achat a2, achat a3 where a1.nachet=a2.nachet
and a2.nachet = a3.nachet and a1.nvin = 1 and a2.nvin = 7 and a3.nvin = 12);
4.10/
select nvin from vins
minus
select distinct nvin from achat;
4.11/
select distinct nomcru from vins, recolte, achat, acheteurs
where nvrec = vins.nvin and vins.nvin = achat.nvin and nachet = numach and datrec > '01/01/1984'
and typbuv !='PETIT';
4.12/
select nomach as gros_acheteurs from acheteurs
where numach =
any(select nachet from achat
group by nachet
having sum(qte) >
(select avg(qte_tot) from (select nachet, sum(qte) as qte_tot from achat group by nachet)));
4.13/
select numach from acheteurs
minus
select distinct nachet as numach from achat
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where nvin = any(select nvin from vins where nomcru = 'St Amour');