Lab 4 , 201501129

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a)select * from items where Stock < ReOrderLevel;

$$\sigma_{(Stock>ReOrderLevel)}(items)$$

b)select Invdate, sum(qty*rate) from (salesdetails as sd atural join sales as s) group by Invdate;

$$\pi_{(Invdate,\ sum(qty*rate))}(_{Invdate}F_{sum(qty*rate)}\ (sd*s))$$

c) select name , ((saleprice-averagepurchaseprice)*100)/averagepurchaseprice from items where ((saleprice-averagepurchaseprice)*100)/averagepurchaseprice>20;

$$\pi_{(name\ ,\ ((saleprice-averagepurchaseprice)*100)/averagepurchaseprice)}(\sigma_{((saleprice-averagepurchaseprice)*100)/averagepurchaseprice>20}(items))$$

d) select max(custtotal) from(select custno, sum(qty*rate) as custtotal from (customer join sales on custno=customerno natural join salesdetails) group by custno) as abc ;

$r1 \leftarrow (customer \bowtie sales_{(custno=customerno)}) *salesdetails$
$r2\ (custno,\ sum(qty*rate)\ as\ custtotal) \leftarrow\ _{custno}F_{sum(qty*rate)}\ (r1)$

$r3 \leftarrow \pi_{(name,custtotal)}(customer \bowtie r2\ _{(r2.custotal\ =\ F\ max(custtotal)(r2))})$

e) Select customerno,date_part,profit from (Select max(sum) as profit from (Select sum(profit),(extract(year from invdate)),customerno
from (Select * from (Select salesdetails.*,(rate-averagepurchaseprice)*qty as profit from salesdetails join items on (salesdetails.itemcode=items.code)
) as r1 natural join sales) as r3 group by customerno,(extract(year from invdate))) as r4 group by date_part
) as r5 natural join (Select sum(profit) as profit,(extract(year from invdate)),customerno from (Select * from (Select salesdetails.*,(rate-averagepurchaseprice)*qty as profit from salesdetails join items on (salesdetails.itemcode=items.code)
) as r1 natural join sales) as r3 group by customerno,(extract(year from invdate))) as r6

r1 invnoFinvno, psum(qty*rate),qsum(qty)(SalesDetails
⋈ SalesDetails.ItemCode=Item.codeItem)
r2 invno, profit ((p/q)-AveragePurchasePrice)/AveragePurchasePrice (r1)
r3 date,CustomerNoFt sum(profit), date, CustomerNo(r2*Sales)
result dateFmax(t)=t, date(r3)

f) Select itemcode,ans,date_part from
(Select max(totalqty) as ans from
(Select sum(qty) as totalqty,itemcode,(extract(year from invdate)) from
sales natural join salesdetails group by itemcode,(extract(year from invdate))) as r1 group by
date_part)
as r2 natural join (select sum(qty) as ans,itemcode,(extract(year from invdate)) from
sales natural join salesdetails group by itemcode,(extract(year from invdate))) as r3

r1 dateFdate, ItemCode, Qty(Sales*SalesDetails)
r2 ItemCodeFdate, ItemCode, q sum(Qty)(r1)
result q=max(q), date, ItemCode(r2)

g) Select itemcode,date_part,ans from
(Select max(ans)as ans,date_part from
(Select sum(profit) as ans,itemcode,(extract(year from invdate)) from
(Select * from sales natural join (select salesdetails.*,((rate-averagepurchaseprice)*qty) as
profit from
items join salesdetails on code=itemcode) as r1) as r2 group by itemcode,(extract(year from
invdate))
) as r3 group by date_part) as r4 natural join (select sum(profit) as ans,itemcode,(extract(year
from invdate)) from
(select * from sales natural join (select salesdetails.*,((rate-averagepurchaseprice)*qty) as
profit from items join salesdetails on code=itemcode) as r1) as r2
group by itemcode,(extract(year from invdate))) as r5

r1 p (rate-
AveragePurchasePrice)*Qty(SalesDetails ⋈ SalesDetails.ItemCode=Item.code Ite
m)

r2 invDateFinvDate, ItemCode, p(r1*Sales)
r3 ItemCodeFt sum(p), ItemCode, invDate(r2)
result max(t)=t(r3)

Q2)

a) Select i.instructorname from
(Select acadyear,semester,instructorid,count(courseno) from offers group by
acadyear,semester,instructorid having count(courseno)>=2) as x join instructor as i
on(i.instructorid=x.instructorid)

r1 ← acadyear,semester,studentid Fcount(courseno)(offers)
r2 ← σcount>=2 (r1)
results ← Πistructorname(instructor ⋈ intructor.instructorid=r2.instructorid r2)

b) Select s.studentid,s.name,sum(credit) from
Student as s natural join registers as r natural join course as c
group by s.batch,r.acadyear,r.semester,s.progid,s.studentid,s.name

r1 ← (students * registersr * coursec)
r2 ←
s.batch,r.semester, s.name,s.studentid,s.progid,r.acadyearFs.name,s.studentid,sum(credit)(r1)

c) Select X.studentid,X.name,X.acadyear,X.semester,sum(credit) from
(Student as s natural join registers as r natural join course as c) as X natural join program as p
group by X.batch,X.studentid,X.name,p.progname
having X.batch=2007 and p.progname='Btech(CS)' and sum(credit)<10 or sum(credit)>20

r1 ← students * registersr * coursec
r2 ← r1 * programp

r3 ←
r1.batch,r1.studentid,<u>r1.name</u>,p.prognameFr1.studentid,<u>r1.name</u>,r1.acadyear,r1.semester,sum(credit)

result ← σr1.batch=2007 and r2.progname='BtechCS' and (sum(credit)<10) or sum(credit)>20(r3)

d) Select studentid,name from
student natural join (select s.studentid,count(grade) from (select * from registers where grade='FF') as s
group by s.studentid having count(grade)>=2) as sf

r1 ← σgrade='FF' (registers)

r2 ← r1.studentid Fr1.studentid,count(grade) (r1)

r3 ← σcount(grade)>=2(r1)

result ← Πstudentid,name(student * r3)