

Comp333 Quiz#2

Key to Quiz#2

Student name \_\_\_\_\_ student#: \_\_\_\_\_

Consider the following schema:

Suppliers (sid: integer, sname: string, address: string)

Parts (pid: integer, pname: string, color: string)

Catalog (sid: integer, pid: integer, cost real)

Write a relational algebra statements to part a and b.

a) Find the names of suppliers who have supplied red parts but not green.

$\rho_{New}(\rho_{parts} \bowtie_{\text{parts.pid=Catalog.pid and parts.color='red'}} \rho_{Catalog})$   
 $\text{difference}$   
 $\rho_{parts} \bowtie_{\text{parts.pid=Catalog.pid and parts.color='green'}}$   
 $\pi_{sname}(\rho_{Suppliers} \bowtie \rho_{New})$

b) Find the pids of parts supplied by at least two different suppliers.

1.  $\rho(\rho_{Catalog1}, \rho_{Catalog})$   $\rho(\rho_{Catalog2}, \rho_{Catalog})$   
 2.  $\rho(\rho_{final}, \rho_{Catalog1} \bowtie_{\text{Catalog1.pid=Catalog2.pid and Catalog1.sid \neq Catalog2.sid}} \rho_{Catalog2})$   
 3.  $\pi_{pid} \rho_{final}$

c) What is the following query compute?

$$\pi_{sname} \left( \pi_{sid} \left( \sigma_{\text{color='red'}} \rho_{parts} \bowtie \sigma_{\text{cost < 100}} \rho_{Catalog} \right) \bowtie \rho_{suppliers} \right)$$

$\bowtie$  : means join

find the names of supplied red parts that has cost < 100