

① $\Pi_{sname} (\sigma_{color=red} ((Catalog \bowtie_{var} Parts) \bowtie Suppliers))$

② $\Pi_{sid} (\Pi_{pid} (\sigma_{color=red \vee color=green} (Parts)) \bowtie Catalog)$

③ $\Pi_{sid} (\sigma_{color=red \vee address='221 Parker Street'} (var))$

④ $\Pi_{sid} (\Pi_{pid} (\sigma_{color=red} (Parts)))$

④ $\Pi_{sid} (\Pi_{pid} (\sigma_{color=red} (Parts))) \bowtie Catalog \cap$
 $\cap \Pi_{sid} (\Pi_{pid} (\sigma_{color=green} (Parts))) \bowtie Catalog$

or
 $\Pi_{sid} ColorTable =$

color
red
green

$\Pi_{sid} (var \div colorTable)$

⑤ $\Pi_{sid} (var \div \Pi_{color, pid} (Parts))$

⑥ $\Pi_{sid} (var \div \Pi_{pid} (\sigma_{color=red} (Parts)))$

⑦ $\Pi_{sid} (var \div \Pi_{pid} (\sigma_{color=red \vee color=green} (Parts)))$

⑧ $\rho(R1) \bowtie \Pi_{pid} (\sigma_{color=red} (Parts))$

$\rho(R2) \bowtie \Pi_{pid} (\sigma_{color=green} (Parts))$

$\Pi_{sid} (var \div R1) \cup \Pi_{sid} (var \div R2)$

⑨ $\Pi_{sid1, sid2} (var \bowtie Duplicate\ var, \text{ so there are } var1 \text{ and } var2 \text{ now})$

$\Pi_{sid1, sid2} (var1 \bowtie_{var1.pid=var2.pid \wedge var1.cost > var2.cost} var2)$

⑩ $\Pi_{pid} (Catalog1 \bowtie_{pid1=pid2 \wedge sid1 \neq sid2} Catalog2)$

Exercise II

- Names of suppliers which supply red parts which cost less than 100.

2. Names of suppliers which supply red AND green parts which cost less than 100.
3. Sids of suppliers which supply red AND green parts which cost less than 100.
4. Names of suppliers which supply red AND green parts which cost less than 100.