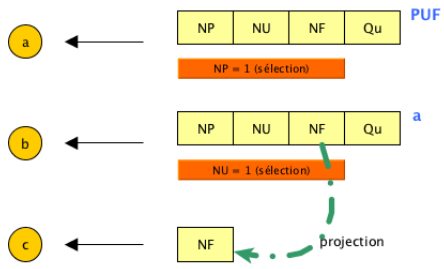
Algèbre Relationnelle

(1) $\pi_{NU,NomU,Ville}(U)$ ou U

(2) $\sigma_{Ville='Londres'}(U)$

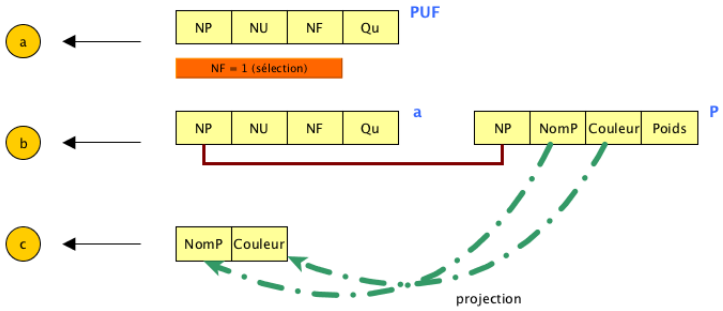
(3) Solution complète : $\pi_{NF}(\sigma_{NU=1 \wedge NP=1}(PUF))$

$a \leftarrow \sigma_{NP=1}(PUF)$
$b \leftarrow \sigma_{NU=1}(a)$
$c \leftarrow \pi_{NF}(b)$



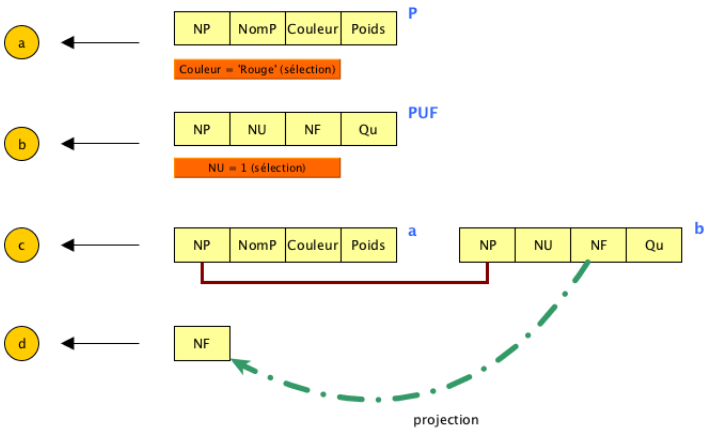
(4) Solution complète : $\pi_{NomP,Couleur}(P \bowtie_{NP=NP} \sigma_{NF=1}(PUF))$

$a \leftarrow \sigma_{NF=1}(PUF)$
$b \leftarrow P \bowtie_{NP=NP} (a)$
$c \leftarrow \pi_{NomP,Couleur}(b)$



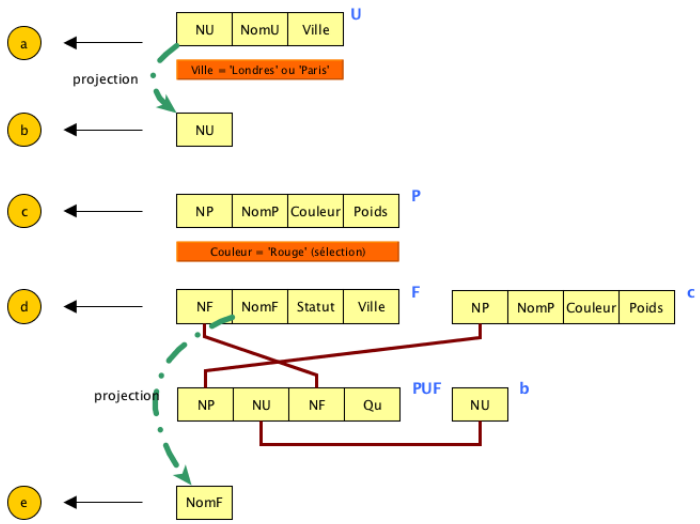
(5) Solution complète : $\pi_{NF}(\sigma_{NU=1}(PUF) \bowtie_{NP=NP} \sigma_{Couleur='Rouge'}(P))$

$a \leftarrow \sigma_{Couleur='Rouge'}(P)$
$b \leftarrow \sigma_{NU=1}(PUF)$
$c \leftarrow b \bowtie_{NP=NP} a$
$d \leftarrow \pi_{NF}(c)$



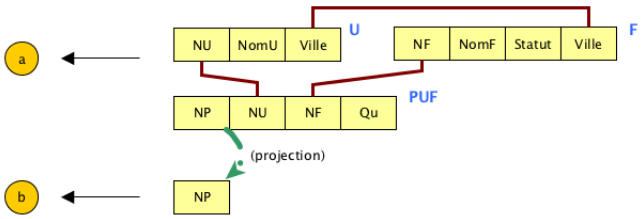
(6) Solution complète : $\pi_{NomF}(F*PUF*\sigma_{Couleur='Rouge'}(P)*\pi_{NU}(\sigma_{Ville='Londres' \vee Ville='Paris'}(U)))$

$a \leftarrow \sigma_{Ville='Londres' \vee Ville='Paris'}(U)$
$b \leftarrow \pi_{NU}(a)$
$c \leftarrow \sigma_{Couleur='Rouge'}(P)$
$d \leftarrow F * PUF * c * b$
$e \leftarrow \pi_d$



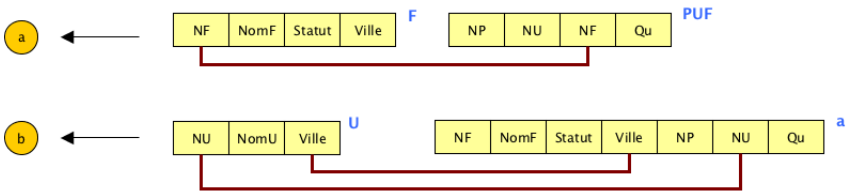
(7) Solution complète : $\pi_{NP}(PUF * F * U)$

$a \leftarrow PUF * F * U$
$b \leftarrow \pi_{NP}(a)$



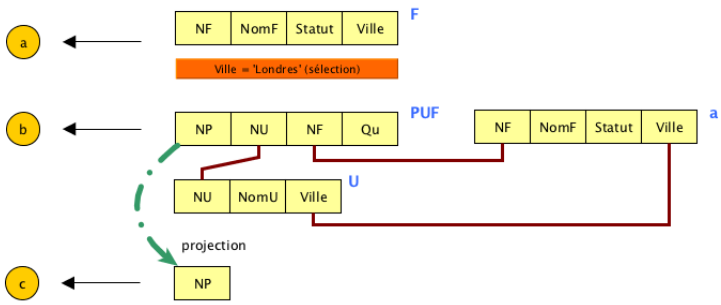
ou autre solution : $\pi_{NP}((PUF \bowtie_{NF=NF} F) \bowtie_{NU=NU \wedge Ville=Ville} U)$

$a \leftarrow PUF \bowtie_{NF=NF} F$
$b \leftarrow a \bowtie_{NU=NU \wedge Ville=Ville} (U)$



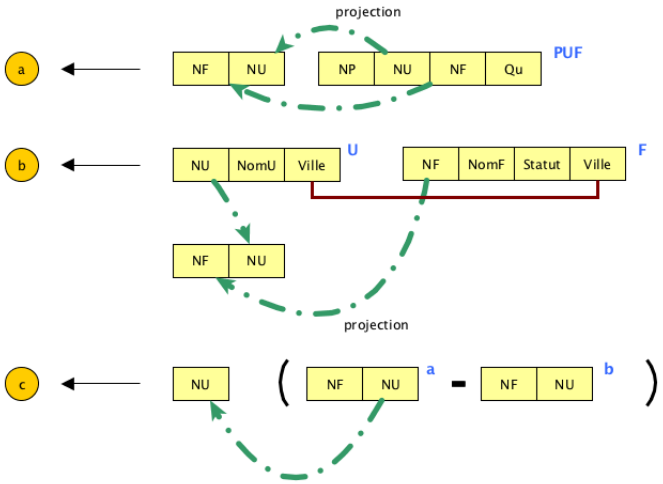
(8) Solution complète : $\pi_{NP}(PUF * \sigma_{Ville='Londres'}(F) * U)$

$a \leftarrow \sigma_{Ville='Londres'}(F)$
$b \leftarrow PUF * a * U$
$c \leftarrow \pi_{NP}(b)$



(9) Solution complète : $\pi_{NU}(\pi_{NF,NU}(PUF) - \pi_{NF,NU}(U * F))$

$a \leftarrow \pi_{NF,NU}(PUF)$
$b \leftarrow \pi_{NF,NU}(U * F)$
$c \leftarrow \pi_{NU}(a - b)$



(10) Solution complète : $\pi_{NF}(\sigma_{NU=1}(PUF)) \cap \pi_{NF}(\sigma_{NU=2}(PUF))$

$a \leftarrow \sigma_{NU=2}(PUF)$
$b \leftarrow \pi_{NF}(a)$
$c \leftarrow \sigma_{NU=1}(PUF)$
$d \leftarrow \pi_{NF}(c)$
$e \leftarrow d \cap b$

(11) Solution complète : $\pi_{NU}(\pi_{NP}(\sigma_{NF=3}(PUF)) \bowtie_{NP=NP} PUF)$

$a \leftarrow \sigma_{NU=2}(PUF)$
$b \leftarrow \pi_{NP}(a)$
$c \leftarrow b \bowtie_{NP=NP} PUF$
$d \leftarrow \pi_{NU}(c)$

(12) Solution complète : $\pi_{NP}(P) - \pi_{NP}(\sigma_{Poids>P2}(P \times \alpha_{Poids:P2}(\pi_{Poids}(P))))$

$a \leftarrow \pi_{Poids}(P)$
$b \leftarrow P \times \alpha_{Poids:P2}(a)$
$c \leftarrow \sigma_{Poids \geq P2}(b)$
$d \leftarrow \pi_{NP}(c)$
$e \leftarrow \pi_{NP}(P)$
$f \leftarrow e - d$