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SE2222 – ASSIGNMENT 4

1) $\pi_{marker}(Product \bowtie Laptop)$ $\qquad\qquad$ $\pi_{marker}\left(\sigma_{type="laptop"}(Product)\right)$

2) $P1 = \pi_{model,speed,ram,hd,price}(PC)$
$P2 = \pi_{model,speed,ram,hd,price}(PC)$ *//P1 and P2 are two different relations and both of them has same attributes, i didn't want to write PCxPC while doing Cartesian product of two relations.*
$\pi_{hd}\left(P1 \bowtie_{P1.hd=P2.hd \wedge P1.model<>P2.model} P2\right)$

3) $L1 = \pi_{marker,model}\left(\sigma_{type='laptop'}(Product)\right)$
$L2 = \pi_{marker,model}\left(\sigma_{type='laptop'}(Product)\right)$
$L3 = \pi_{marker,model}\left(\sigma_{type='laptop'}(Product)\right)$
$\pi_{marker}\left(\sigma_{L1.model<>L2.model \wedge L1.model<>L3.model \wedge L2.model<>L3..model}(L1\bowtie L2 \bowtie L3)(Product)\right)$

4) $L1 = \pi_{marker,model}\left(\sigma_{type='laptop'}(Product)\right)$
$L2 = \pi_{marker,model}\left(\sigma_{type='laptop'}(Product)\right)$
$\pi_{marker}\left(\sigma_{L1.model<>L2.model}(L1\bowtie L2)(Product)\right)$

```
SELECT marker
FROM Product L1, Product L2
WHERE L1xL2 where L1.model<>L2.model
```