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CSC 4402
HW 2
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(a) $\pi_{type}(\sigma_{type != A}\ Characters)$

$\pi_{type}\ Characters - \pi_{type}(\sigma_{type = A}\ characters)$

(b) $\rho(Temps1, \pi_{name}(\sigma_{season=1}\ Appearances))$
$\rho(Temps2, \pi_{name}(\sigma_{season=2}\ Appearances))$
$\pi_{name}(Temps1 \cap Temps2)$

(c) $\pi_{name}((\sigma_{viewers > 3.0m}\ Episodes) \bowtie Appearances)$

(d) $\rho_{temp1}(Characters \bowtie (\sigma_{season=1}\ Appearances))$
$\bowtie_{temp1.name < temp2.name \wedge temp1.num = temp2.num}$
$\rho_{temp2}(Characters \bowtie (\sigma_{season=1}\ Appearances))$

(a)
```
select distinct viewers
from episodes
where viewers > 3.0M
order by viewers DESC, season ASC, number ASC
```

(b)
```
select distinct names from appearances A, epis
where E.season = A.season
and E.num = A.num
and E.viewers > 3.0M
and A.name != A.name
```

(c)
```
select distinct characters
from appearances
where season = 1
and season = 2
and num = 1
and num = 2;
```

(d)
```
select distinct characters
from Appearances
where season = 1
and season = 2
and num = 1
and num = 2 (select characters
            from appearances
            where characters > 2);
```

(e)
```
select characters
from Characters C, Appearances A
where A.name = C.name
and A.type = A
order by season, num, number_characters
```

(f)
```
select characters
from characters C, Appearances A
where A.name = C.name
and A.type != A (select num
                 from Appearances
                 where not exists *type.A=A)
order by season
```