

1. age < 22, 女生.

$$\sigma_{\text{Sage} < 22 \wedge \text{Ssex} = '女'}(\text{Student})$$

2. ~~ss~~ grade > 90, 学号 & 女生名.

$$\pi_{\text{Sno}, \text{Sname}}(\sigma_{\text{Grade} > 90}(\pi_{\text{Sno}, \text{Sname}}(\text{Student}) \bowtie \text{SC})) \cdot (\pi_{\text{Sno}}(\sigma_{\text{Grade} > 90}(\text{SC})) \bowtie (\pi_{\text{Sno}, \text{Sname}}(\text{Student})))$$

3. 数据库, name, grade: $\pi_{\text{Sname}, \text{Grade}}(((\pi_{\text{Cno}}(\sigma_{\text{Cname} = '数据库'}(\text{Course}))) \bowtie \text{SC}) \bowtie \pi_{\text{Sname}, \text{Sno}}(\text{Student}))$

$$\pi_{\text{Sname}, \text{grade}}(\pi_{\text{Cname}}(\pi_{\text{Cno}, \text{Cname}}(\text{Course}) \bowtie \text{SC}) \bowtie \pi_{\text{Sno}, \text{Sname}}(\text{Student}))$$

$\equiv \text{"数据库"}$

4. 没选 005, name & age.

$$\pi_{\text{Sname}, \text{Sage}}(\pi_{\text{Sno}}(\sigma_{\text{Cno} \neq 005}(\text{SC})) \bowtie \pi_{\text{Sno}, \text{Sname}, \text{Sage}}(\text{Student}))$$

5. 全课的 Sno 与 Sname

$$\pi_{\text{Sno}, \text{Sname}}((\pi_{\text{Sno}, \text{Cno}}(\text{SC}) \div \pi_{\text{Cno}}(\text{Course})) \bowtie \pi_{\text{Sno}, \text{Sname}}(\text{Student}))$$

1. age < 22, 女生. 用这个符号.

$\sigma_{\text{age} < 22 \wedge \text{sex} = '女'}(\text{Student})$

2. ~~sc~~ grade > 90, 学号 & 姓名.

~~$\pi_{\text{Sno}, \text{Sname}}(\sigma_{\text{Grade} > 90}(\pi_{\text{Sno}, \text{Sname}}(\text{Student}) \bowtie \text{SC}))$~~ . $(\pi_{\text{Sno}}(\sigma_{\text{Grade} > 90}(\text{SC}))) \bowtie (\pi_{\text{Sno}, \text{Sname}}(\text{Student}))$

3. 数据库, name, grade: $\pi_{\text{Sname}, \text{Grade}}(((\pi_{\text{Cno}}(\sigma_{\text{Cname} = '数据库'}(\text{Course}))) \bowtie \text{SC}) \bowtie \pi_{\text{Sname}, \text{Sno}}(\text{Student}))$ 不能用 Cno = 1 查询.

~~$\pi_{\text{Sname}, \text{grade}}((\sigma_{\text{Cname} = '数据库'}(\pi_{\text{Cno}, \text{Cname}}(\text{Course})) \bowtie \text{SC}) \bowtie \pi_{\text{Sno}, \text{Sname}}(\text{Student}))$~~

4. 没选 005, name & age. 某学生选了 005 和其它, 也会出现. 自 别用除法.

~~$\pi_{\text{Sname}, \text{Sage}}(\pi_{\text{Sno}}(\sigma_{\text{Cno} \neq 005}(\text{SC})) \bowtie \pi_{\text{Sno}, \text{Sname}, \text{Sage}}(\text{Student}))$~~

先把选了 005 的学号找出来, 再作差.

5. 全课的 Sno 与 Sname

只剩下 Sno 了, 不用再选了

$\pi_{\text{Sno}, \text{Sname}}((\pi_{\text{Sno}, \text{Cno}}(\text{SC}) \div \pi_{\text{Cno}}(\text{Course})) \bowtie \pi_{\text{Sno}, \text{Sname}}(\text{Student}))$

不要 Sname.

4. 没有: 从有入牛, 作差.

$\pi_{\text{Sname}, \text{Sage}}((\pi_{\text{Sno}}(\text{Student}) - \pi_{\text{Sno}}(\sigma_{\text{Cno} = 5}(\text{SC}))) \bowtie \pi_{\text{Sno}, \text{Sname}, \text{Sage}}(\text{Student}))$