数据库第一次作业

201300035 方盛俊

第一大题

1.

R1 := O[cid]

S := O

R2 := ((OxS) where O.ordno != S.ordno)[O.cid]

T := R1 - R2

2.

R := C[city]

S1 := ((O ∞ C)[aid, C.city] x R where C.city = R.city)[aid, R.city]

S2 := (O x R)[aid, R.city]

T := O[aid] - (S2 - S1)[aid]

3.

R := C[city]

S1 := ((O ∞ C)[aid, C.city] x R where C.city = R.city)[aid, R.city]

S2 := (O x R)[aid, R.city]

S3 := O[aid] - (S2 - S1)[aid]

P1 := (O x S3 where O.aid = S3.aid)[cid, aid]

P2 := (O x S3)[cid, S3.aid]

T := O[cid] - (P2 - P1)[cid]

4.

R1 := O[aid, ordno]

S := O

R2 := (OxS where O.aid = S.aid AND O.dols < S.dols)[aid, ordno]

R3 := R1 - R2

T := (OxR3 where O.ordno = R3.ordno)[aid, ordno, dols]

5.

R1 := O[cid, ordno, orddate]

S := O

R2 := (OxS where O.cid = S.cid AND O.orddate < S.orddate)[cid, ordno, orddate]

R3 := R1 - R2

R4 := R1 - R3

R5 := R4

R6 := R4xR5 where R4.cid = R5.cid AND R4.orddate < R5.orddate

R7 := R5 - R6

T := (R3xR7 where R3.cid = R7.cid)(cid, R3.orddate, R7.orddate)

第二大题

1.

T := (L where cno = 'c001')[sno]

2.

T := (L ∞ C ∞ S where dept = '计算机')[cno, sn]

3.

R := S[sno] - (L ∞ S where cno = '体育')[sno]

T := (SxR where S.sno == R.sno)[sn, dept]

4.

T := S[sno, sn] - (L ∞ S ∞ C where S.dept != C.dept)(sno, sn)

5.

S := (P where cno = 'c009')[pno]

R1 := (LxS)[sno, pno]

R2 := (LxS where cno = pno)[sno, pno]

T := ((L[sno] - (R1 - R2)[sno]) ∞ S)[sno, sn]

6.

S := (C where dept = '计算机')[cno]

R1 := (LxS)[sno, S.cno]

R2 := (LxS where L.cno = S.cno)[sno, cno]

P1 := L[sno] - (R1 - R2)[sno]

P2 := (LxP where L.sno = P.sno AND grd < 60)[sno]

T := P1 - P2

7.

S := L

L1 := (LxS where L.cno = S.cno AND L.grd < S.grd)[L.sno, L.cno, L.grd]

R1 := (L - L1)[cno, grd]

L2 := (LxS where L.cno = S.cno AND L.grd > S.grd)[L.sno, L.cno, L.grd]

R2 := (L - L2)[cno, grd]

T := (R1 ∞ R2)[cno, R1.grd, R2.grd]