

Datenbanken 1 – Übung09 – Georg Kusch – MI-10

1.a)
$$p_{ename, job, sal} (s_{sal \leq 1500 \wedge (job = 'CLERK' \vee job = 'SALESMAN')} (emp))$$
$$= p_{ename, job, sal} (s_{sal \leq 1500} (s_{job = 'CLERK'} (emp) \cup s_{job = 'SALESMAN'} (emp)))$$

in ReAl :

PRO[ename,job,sal](SEL[(job='SALESMAN' OR job='CLERK') AND (sal<=1500)](emp));

1.b)
$$p_{ename, hiredate} (s_{(hiredate \geq 19820101 \wedge hiredate \leq 19821231)} (emp))$$
$$= p_{ename, hiredate} (s_{hiredate \leq 19821231} (s_{hiredate \geq 19820101} (emp)))$$

in ReAl :

PRO[ename, hiredate](SEL[hiredate >= 19820101 AND hiredate <= 19821231](emp));

1.c)
$$p_{emp.ename, emp.deptno, dept.dname} (s_{emp.deptno = dept.deptno} ($$
$$(p_{emp.ename \leftarrow ename, emp.deptno \leftarrow deptno} (emp) \times p_{dept.dname \leftarrow dname, dept.deptno \leftarrow deptno} (dept))$$

in ReAl :

PRO[ename, dname, deptno](emp NATJOIN dept);

1.d)
$$p_{ename, empno, job} (s_{job \neq 'CLERK'} (emp))$$

in ReAl :

PRO[ename, empno, job](SEL[job <> 'CLERK'](emp));

2.a) $\mathbf{p}_{name,vorname,geboren}(komponist)$

2.b) $\mathbf{p}_{name,gesamtspielzeit}(\mathbf{s}_{anz_cds=2}(cd))$

2.c) $\mathbf{p}_{titel}(\mathbf{s}_{(tonart='C-Dur') \vee (tonart='D-Dur')}(stueck))$
 $= \mathbf{p}_{titel}(\mathbf{s}_{tonart='C-Dur'}(stueck) \cup \mathbf{s}_{tonart='D-Dur'}(stueck))$

2.d) $\mathbf{p}_{name,instrument}(\mathbf{s}_{(instrument='Sopran') \vee (instrument='Tenor')}(solist))$
 $= \mathbf{p}_{name,instrument}(\mathbf{s}_{instrument='Sopran'}(solist) \cup \mathbf{s}_{instrument='Tenor'}(solist))$

2.e) $\mathbf{p}_{stueck.titel,stueck.snr,komponist\ name}(\mathbf{s}_{stueck.snr=komponist.snr}(\mathbf{p}_{komponist.snr \leftarrow snr, komponist\ name \leftarrow name}(komponist) \times \mathbf{s}_{stueck.snr=aufnahme.snr}(\mathbf{p}_{stueck.snr \leftarrow snr, stueck.titel \leftarrow titel}(stueck) \times \mathbf{p}_{aufnahme.snr \leftarrow snr}(\mathbf{s}_{leitung \neq Claudio\ Abbado}(aufnahme))))))$

2.f) $\mathbf{p}_{cd.cdnr,cd.name}(\mathbf{s}_{solist.cdnr=cd.cdnr \wedge solist.instrument='Oboe'}(\mathbf{p}_{solist.cdnr \leftarrow cdnr, solist.instrument \leftarrow instrument}(solist) \times \mathbf{p}_{cd.cdnr \leftarrow cdnr, cd.name \leftarrow name}(cd)))$
 $= \mathbf{p}_{cd.cdnr,cd.name}(\mathbf{s}_{solist.cdnr=cd.cdnr}(\mathbf{s}_{solist.instrument='Oboe'}(\mathbf{p}_{solist.cdnr \leftarrow cdnr, solist.instrument \leftarrow instrument}(solist) \times \mathbf{p}_{cd.cdnr \leftarrow cdnr, cd.name \leftarrow name}(cd))))$