1. $DEPS\_EMPS \leftarrow \sigma_{DNO=5}(EMPLOYEE)$

$prod\_X\_proj \leftarrow \sigma_{PName='projectX'}(project)$

$DEPS\_prod\_X \leftarrow DEPS\_EMPS \bowtie_{SSN=SSN} (Prod\_X\_proj \bowtie_{PNo=PNo} Works\_On)$

$RESULT \leftarrow \pi_{FName, LName}(\sigma_{DEPS\_prod\_X > 10}(DEPS\_prod\_X))$

2. $RESULT \leftarrow \pi_{FName, LName}(EMPLOYEE \bowtie_{SSN=ESSN \text{ and } FName=Dependent\_name} Dependent)$

3. $SSN\_F \leftarrow \pi_{SSN}(\sigma_{FName='Franklin' \text{ and } LName='Wong'}(EMPLOYEE))$

$RESULT \leftarrow \pi_{FName, LName}(EMPLOYEE \bowtie_{SuperssSN=SSN} SSN\_F)$

4. $PROJ\_SUM(Pno, total\_hours) \leftarrow {}_{pno}\mathcal{F}_{sum\ Hours}(Works\_On)$

$RESULT \leftarrow \pi_{pname, total\_hours}(PROJET \bowtie_{PNo=PNo} PROJ\_SUM)$

5. $EMPS\_PROJ \leftarrow \pi_{SSN, PNo}(WORKS\_ON)$

$PROJ\_PNO \leftarrow \pi_{PNo}(PROJET)$

$SSN\_EMPS \leftarrow EMPS\_PROJ \div PROJ\_PNO$

$RESULT \leftarrow \pi_{FName, LName}(EMPLOYEE * SSN\_EMPS)$

6. $SSN\_EMPS\_WORKS \leftarrow \pi_{SSN}(WORKS\_DN)$

$SSN\_TOTAL \leftarrow \pi_{SSN}(EMPLOYEE)$

$SSN\_REMAIN \leftarrow SSN\_TOTAL - SSN\_EMPS\_WORKS$

$RESULT \leftarrow \pi_{FName, LName}(SSN\_REMAIN * EMPLOYEE)$

7.

$AVER\_DNO(DNO, Avgs) \leftarrow {}_{DNO}\mathcal{F}_{avg\ salary}(EMPLOYEE)$

$RESULT \leftarrow \pi_{Dname, Avgs}(AVER\_DNO * DEPARTMENT)$

8. $RESULT \leftarrow \mathcal{F}_{avg\ salary}(\sigma_{Gender='Female'}(EMPLOYEE))$

9. $EMPS\_PHOUS \leftarrow \sigma_{Plocation='Houston'}(EMPLOYEE *_{PNo = PNO} WORKS\_DN * PROJECT)$

$EMPS\_DHOUS \leftarrow \sigma_{Dlocation='Houston'}(EMPLOYEE * Department)$

$RESULT1 \leftarrow \pi_{FName, LName, Address}(EMPS\_PHOUS)$

$RESULT2 \leftarrow \pi_{FName, LName, Address}(EMPS\_DHOUS)$

$RESULT \leftarrow RESULT1 - RESULT2$

10. $SSN\_DEPE(SSN) \leftarrow \pi_{Essn}(DEPENDENT)$

$SSN\_DEPT(SSN) \leftarrow \pi_{Mgr\_ssn}(DEPARTMENT)$

$RESULT \leftarrow \pi_{LName}(EMPLOYEE * (SSN\_DEPT - SSN\_DEPE))$