HW 2
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(1) Retrieve the names (fname,lname) of employees who work more than 15 hours per week on the 'Sac' project. (“Sac” is project name.)

$$SAC\_PROJECTS = \sigma_{(PNAME="Sac")}(PROJECT)$$
$$GT\_FIFTEEN = \sigma_{(hours>15)}(WORKS\_ON)$$
$$FIFTEEN\_PROJ = SAC\_PROJECTS \underset{(PNUMBER=PNO)}{\bowtie} GT\_FIFTEEN$$

$$FINAL = \pi_{(fname,lname)}(FIFTEEN\_PROJ \underset{(ESSN=SSN)}{\bowtie} EMPLOYEE)$$

(2) Retrieve the names (fname, lname) of all employees who work on at least one project.

$$PROJ\_WORKED \leftarrow \pi_{(ESSN)}(EMPLOYEE \underset{(SSN=ESSN)}{\bowtie} WORKS\_ON)$$

$$WORKED\_ON \leftarrow \pi_{(ESSN)} WORKS\_ON$$
$$INT \leftarrow PROJ\_WORKED \cap WORKED\_ON$$
$$FINAL \leftarrow \pi_{(fname,lname)}(EMPLOYEE \underset{(SSN=ESSN)}{\bowtie} INT)$$

(3) Retrieve information of “CE” department. Please list the department number and department locations of CE. (“CE” is department name).

$$DEPT\_AND\_LOC \leftarrow \pi_{(DNUMBER,DLOCATION)}(DEPARTMENT * DEPT\_LOCATIONS)$$

$$FINAL \leftarrow \sigma_{(DNAME = "CE")}(DEPT\_AND\_LOC)$$

(4) Find the name (fname,lname) of the direct supervisor of “Mary Miller”. (“Mary Miller” is an employee).

$$M\_MIL \leftarrow \pi_{(superssn)}(\sigma_{(fname="Mary",lname="Miller")}(EMPLOYEE))$$
$$FINAL \leftarrow \pi_{(fname,lname)}((EMPLOYEE \underset{(SSN=superssn)}{\bowtie} M\_MIL))$$