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CSC 134

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Homework 2: Relational Algebra

1. $\text{WIC_PROJECT} \leftarrow$
 $\sigma_{\text{PNAME} = \text{"WIC"} \text{ and DNO} = 6 \text{ and PNUMBER}} (\text{DEPARTMENT} \bowtie_{\text{SSN} = \text{ESSN}} \text{PROJECT})$

$\text{UNDER_11_EMPS} \leftarrow$
 $\sigma_{\text{HOURS} < 11} (\text{WIC_PROJECT} \bowtie_{\text{PNUMBER} = \text{PNO}} \text{WORKS_ON})$

$\text{RESULT} \leftarrow$
 $\pi_{\text{FNAME, LNAME}} (\text{EMPLOYEE} \bowtie_{\text{SSN} = \text{ESSN}} \text{UNDER_11_EMPS})$

2. $\text{KATE_SSN} \leftarrow$
 $\pi_{\text{SSN}} (\sigma_{\text{FNAME} = \text{"Kate"} \text{ and LNAME} = \text{"Miller"}} (\text{EMPLOYEE}))$

$\text{RESULT} \leftarrow$
 $\pi_{\text{FNAME, LNAME}} (\text{KATE_SSN} \bowtie_{\text{SSN} = \text{SUPERSSN}} \text{EMPLOYEE})$

3. CSC_NUM \leftarrow

$\pi_{\text{DNUMBER}} (\sigma_{\text{DNAME} = \text{"CSC"}}(\text{DEPARTMENT}))$

CSC_EMPS \leftarrow

$\pi_{\text{SSN}} (\text{CSC_NUM} \bowtie_{\text{DNUMBER=DNO}} \text{EMPLOYEE})$

RESULT \leftarrow

$\pi_{\text{DEPENDENT_NAME}} (\text{CSC_EMPS} \bowtie_{\text{SSN=ESSN}} \text{DEPENDENT})$

4. RESULT \leftarrow

$\pi_{\text{FNAME, LNAME}} (\text{DEPARTMENT} \bowtie_{\text{MGRSSN=SSN}} \text{EMPLOYEE})$