Assignment 2

3A) $Q_1 \leftarrow \sigma$ w.cname, w.pid, w.salary
$(W \text{ (worksFor)} \bowtie_{w.pid = k.pid1} K \text{ (knows)}$

$\bowtie_{K.pid2 = W1.pid \wedge W1.cname = \text{'Apple'}} W1 \text{ (worksFor)})$

$Q_2 \leftarrow \sigma$ W2.cname, W2.pid, W2.salary
$(W2 \text{ (worksFor)} \bowtie_{W2.cname = W3.cname \wedge W2.salary > W3.salary} W3 \text{ (worksfor)})$

result $\leftarrow Q_1 - Q_2$

4A) $Q_1 \leftarrow$ C.cname, C1.cname
   (C (company) $\bowtie_{C.cname = C1.cname}$ C1 (company))

$Q_2 \leftarrow$ C2.cname, C3.cname
   (C2(company) $\bowtie$ C3 (company)
            $_{C2.cname <> C3.cname}$

   $\bowtie$ W (works For)
      $_{W.cname = C1.cname}$

   $\bowtie$ P(Person))
      $_{P.pid = W.pid \land P.city = `Chicago'}$

$Q_3 \leftarrow$ C4.cname, C5.cname
   (C4 (company) $\bowtie$ C5 (company)
            $_{C4.cname <> C5.cname}$

   $\bowtie$ W2 (works for)
      $_{W2.cname = C5.cname}$

   $\bowtie$ P2 (Person))
      $_{P2.pid = W2.pid \land P2.city = `Chicago'}$

Result $\leftarrow Q_1 - Q_2 - Q_3$