



Solution:

professor(prof-ssn, prof-age, rank, speciality)

dept(dno, dname, office, prof-ssn)

project(pid, sponsor, start-date, end-date, budget, prof-ssn, professor-ssn)

Graduate(grad-ssn, grad-age, deg-prog, grad-name, prof-ssn, dno, super-ssn)

work-dept(prof-ssn, dno, pc-time)

work-in(prof-ssn, pid)

Step 1: Strong entity

Step 2: Weak entity (no weak entities, omitted)

Step 3: one-to-one relationship (no, omitted)

Step 4: one-to-N (N-to-one) relationship

Step 5: Many-to-many relationship

Step 6: Non-binary relationship (omitted)