QBE Practice

Consider the following relational schema capturing data of a university:

Person (string ssn,
       string name_fname,
       string name_lname,
       Date   birthdate)

Prevnames (string ssn, string Pname_fname, string Pname_lname)
foreign key Prevnames.ssn references Person

Faculty (string ssn,
       string rank,
       string phone,
       string office)
       foreign key Faculty.ssn references Person

Advises (string fssn, string gssn)
       foreign key Advises.fssn references Faculty
       foreign key Advises.gssn references GradStu

Dept (string dname,
       string address_street,
       string address_city,
       string address_state,
       int   address_zip,
       int   address_buildingCode)

Has_faculty (string ssn, string dname)
       foreign key has_faculty.ssn references Faculty
       foreign key has_faculty.dname references Dept

GradStu (string ssn, string major, real gpa)
       foreign key GradStu.ssn references Person

1. Find all faculty (report ssns only) who are teaching in the CS department:

Has_faculty | ssn | dname
          | _s | CS

Faculty | ssn | rank | phone | office
       | P. _s | | |

2. Find all faculty (report ssns and name) who are teaching in the CS department:

Has_faculty | ssn | dname
          | _s | CS

Faculty | ssn | rank | phone | office
       | _s | | |

Person | ssn | name_fname | name_lname | birthdate
       | P. _s | P. | P. |

3. Find the department of the faculty member formerly known as Charles Xavier

Has_faculty | ssn | dname
          | _s | P.

PrevNames | ssn | Pname_fname | Pname_lname
          | _s | Charles | Xavier

4. Find the faculty affiliated with all departments (report ssn and name)

Stage I: find faculty for whom there is at least one department they are not affiliated with

Dept | dname | address_street | address_city | address_state | address_zip | address_buildingCode
    | _d | | | | |

Has_faculty | ssn | dname
   ¬ | _s | _d

Faculty | ssn | rank | phone | office
       | _s | | |

Not_these | ssn
   I. | _s

Stage II: complement the set of faculty found at Stage I

Faculty	ssn	rank	phone	office		Not_these	ssn
	_s				¬		_s

Person	ssn	name_fname	name_lname	birthdate
	P._s	P.	P.	