For the VEHICLE to CAR/TRUCK specialization, we chose the 8A option as it encompasses multiple subclass-only relationships, as well as a total and disjoint specialization, which is precisely what is in part A. Using the 8A method, we added all the primary keys of VEHICLE to the individual subclasses, behaving as foreign keys, and also made a table for VEHICLE.

Regular (strong) entity type CAR is mapped as a CAR relation. All simple attributes are included. Attribute “CAR\_Vin” is chosen as a primary key.

Regular (strong) entity type TRUCK is mapped as a TRUCK relation. All simple attributes are included. Attribute “TRUCK\_Vin” is chosen as a primary key.

Regular (strong) entity type VEHICLE is mapped as a VEHICLE relation. All simple attributes are included. Attribute “Vin” is chosen as a primary key.

Regular (strong) entity type OFFICE is mapped as an OFFICE relation. All simple attributes are included. Attribute “Office\_ID” is chosen as a primary key. We also included the hours attribute from the WORKS\_ON relation here since Office is on the N side of the 1:N relation to which “hours” is an attribute.

Regular (strong) entity type CUSTOMER is mapped as a CUSTOMER relation. All simple attributes are included. Attribute “Customer\_ID” is chosen as a primary key.

Regular (strong) entity type EMPLOYEE is mapped as a EMPLOYEE relation. All simple attributes are included. Attribute “Ssn” is chosen as a primary key.

Regular (strong) entity type CONTRACT is mapped as a CONTRACT relation. All simple attributes are included. Attribute “Contract\_ID” is chosen as a primary key.

Regular (strong) entity type INSURANCE is mapped as an INSURANCE relation. All simple attributes are included. Attribute “Insurance\_Number” is chosen as a primary key.

Weak entity type PAYMENT is mapped as a PAYMENT relation with owners entity type CUSTOMER and entity type CONTRACT. All simple attributes are included. Attribute “P\_Customer\_ID” is chosen as a foreign key from CUSTOMER. Attribute “P\_Contract\_ID” is chosen as a foreign key from CONTRACT.

1:N relationship HAS is mapped as a foreign key attribute ‘V\_Insurance\_number’ in Vehicle relation (“N” side) that corresponds to “Insurance\_Number” primary key in Insurance relation (“1” side).

1:N relationship CHOOSE is mapped as a foreign key attribute ‘C\_Vin’ in Contract relation (“N” size) that corresponds to “Vin” primary key in Vehicle relation (“1” side).

1:N relationship WORKS\_ON is mapped as a foreign key attribute ‘E\_Office\_ID’ in Employee relation (“N” side) that corresponds to “Office\_ID” primary key in Office relation (“1” side).

1:N relationship SUPERVISION is mapped as a foreign key attribute ‘Super\_SSN’ in Employee relation (“N” side) that corresponds to “Ssn” primary key in Employee relation (“1” side).

N:M relationship DEALS\_WITH is mapped as a DEALS\_WITH relation with ‘DW\_Customer\_ID’ and ‘DW\_Office\_ID’ mapped as foreign key attributes from CUSTOMER and OFFICE, respectively.

1:N relationship REQUIRES is mapped as a foreign key attribute ‘P\_Contract\_ID’ in Payment relation (“N” side) that corresponds to “Contract\_ID” primary key in Contracts relation (“1” side)

1:N relationship REQUIRES is mapped as a foreign key attribute ‘P\_Customer\_ID’ in Payment relation (“N” side) that corresponds to “Customer\_ID” primary key in Customer relation (“1” side)  
  
1:1 relation REQUIRES is mapped as a foreign key attribute ‘C\_Customer\_ID’ in Contracts relation (‘1’ side) that corresponds to ‘Customer\_ID’ primary key in Customer relation (‘1’ side)

1:N relation MAKES is mapped as a foreign key attribute ‘C\_Office\_ID’ in Contracts relation (‘1’ side) that corresponds to ‘Office\_ID’ primary key in Office relation (‘N’ side)