

CSCI321 – Fall 2012

Homework Set 4 Solutions (Part 2)

1. Problem 9.4, p. 299.

First, the entity sets:

```
Ship(shipname, owner)
ShipType(shiptype, tonnage, hull)
State_Country(SCname, continent)
Sea_Ocean_Lake(watername)
```

Then the weak entity sets (eliminating the supporting relationships):

```
Port(Pname, SCname, watername)
PortVisit(StartDate, EndDate, Sname, Pname, SCname, watername)
ShipMovement(date, time, Long, Lat, shipname)
```

Then the relationships:

```
Type(shiptype, shipname)
HomePort(shipname, Pname, SCname, watername)
```

We can eliminate Type as a many-one relationship with total participation on the many side if we redefine Ship as

```
Ship(shipname, owner, type, tonnage, hull)
```

2. Problem 9.5, p. 299. Only do the BANK whose ER diagram is shown in Figure 7.21.

No solution given.

3. Problem 9.8, p. 300.

Only giving the “E/R style” representation of the specialization hierarchy:

```
Customer(SSN, custname, city, street, state)
Salesperson(Sid, salesname)
Vehicle(VIN, price, model)
Car(VIN, EngineSize)
Truck(VIN, tonnage)
SUV(VIN, seats)
Sale(Sid, VIN, SSN, date)
```