

## CSC430/530 – Database Management Systems

### Assignment #2 – EER to Relational Model Mapping

In this assignment, you are to map provided EER diagrams into Relational Model schemas following steps described in “Lesson 5.1 - EER to Relational Model Mapping”. You must implement relational schemas using Model Editor Utility from MySQL Workbench. You must submit zipped folder containing MySQL Workbench Models file (.mwb) and write-up file (.pdf) on Moodle.

- a) Consider following EER diagram for a database that can be used to keep track of transport ships and their locations for maritime authorities. Note: assume port names to be unique across all states/countries and seas/oceans/lakes. Map this diagram into a relational schema and specify all the primary & foreign keys.

**Describe each step of the mapping process.** For example:

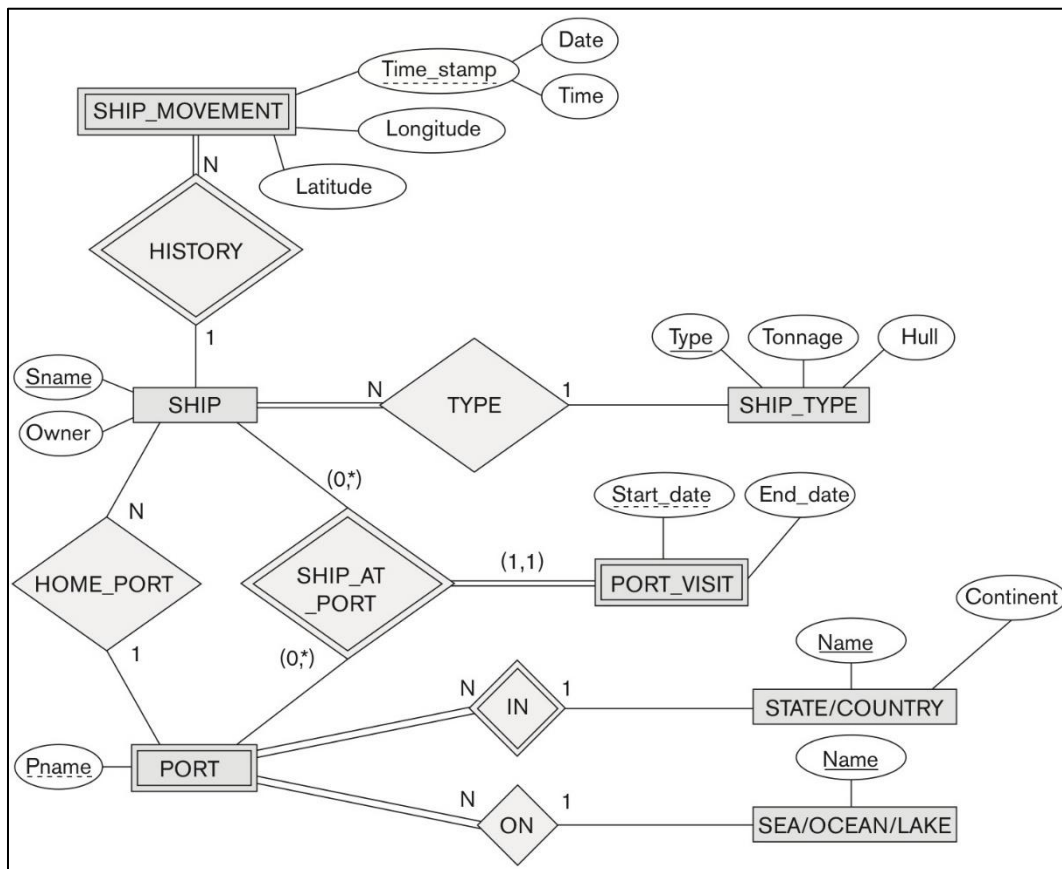
*Step 1 - mapping regular entities: SHIP, SHIP\_TYPE, STATE/COUNTRY, and SEA/OCEAN/LAKE.*

- Regular entity SHIP mapped as SHIP relation. All simple attributes are included. Attribute “Sname” is chosen as a primary key.
- Regular entity SHIP\_TYPE mapped as SHIP\_TYPE relation. All simple attributes are included. Attribute “Type” is chosen as a primary key ...

...

*Step 4 - mapping binary 1:N relationships: TYPE, ON, and HOME\_PORT.*

- 1:N relationship TYPE is mapped as a foreign key attribute “Type” in SHIP relation (“N” side) that corresponds to “Type” primary key attribute in SHIP\_TYPE relation (“1” side) ...



- b) Consider following EER diagram for a car dealer database. Map this diagram into a relational schema and specify all the primary & foreign keys. For the VEHICLE to CAR/TRUCK/SUV specialization, pick one of the options discussed in class (8A, 8B, 8C, 8D). Justify your choice.

**Describe each step of the mapping process.** For example:

*Step 1 - mapping regular entities: VEHICLE, SALESPERSON, CUSTOMER.*

- Regular entity type VEHICLE is mapped as a VEHICLE relation. All simple attributes are included. Attribute "Vin" is chosen as a primary key ...

...

*Step 7 – mapping n-ary relationships: SALE ...*

*Step 8 – mapping specializations and generalizations: CAR, TRUCK, SUV ...*

