ENSF 608- Fall 2020

Assignment:2

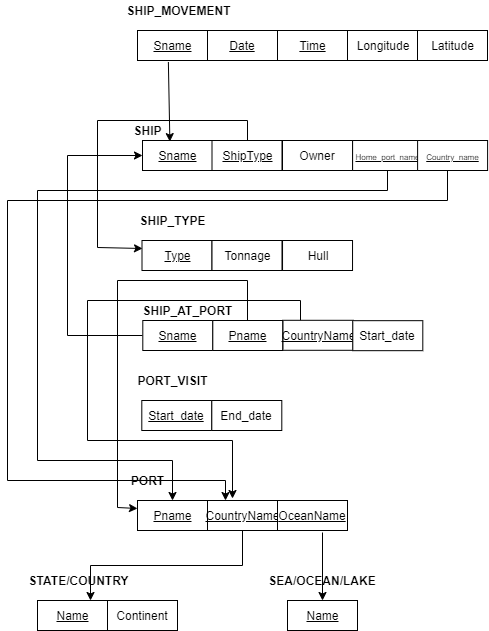
Ziad Chemali

October 30 ,2020

# Exercise 1:

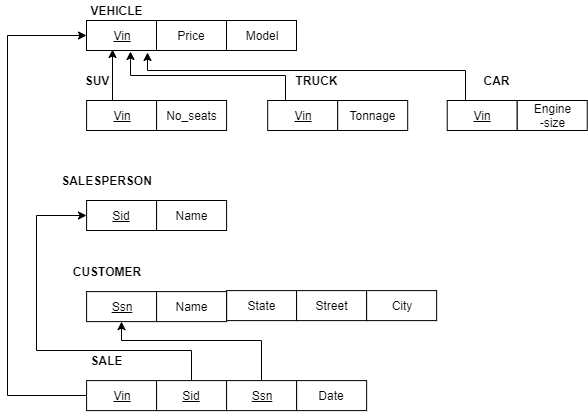
Note:

* IN is the identifying relationship for Port, so both Pname and CountryName must be included in any relation that has for foreign keys to Port



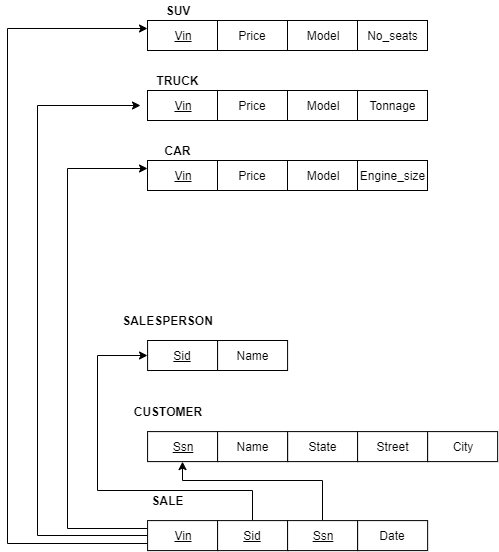
# Exercise 2:

## 8a Option:

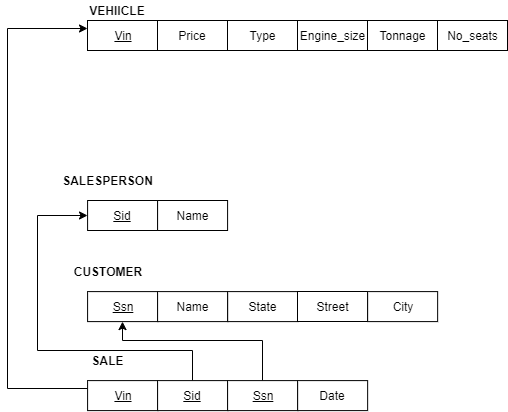


## 8b Option:

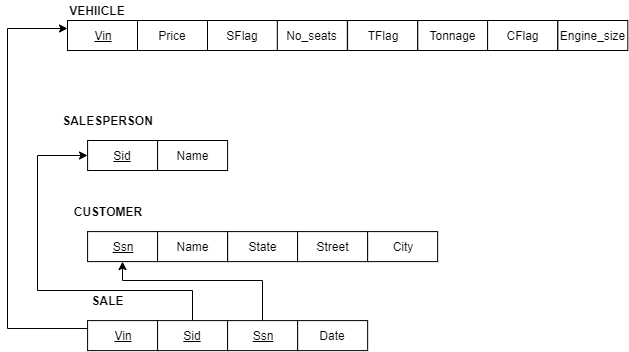
Note: its illegal to have three arrows from SALE Vin .



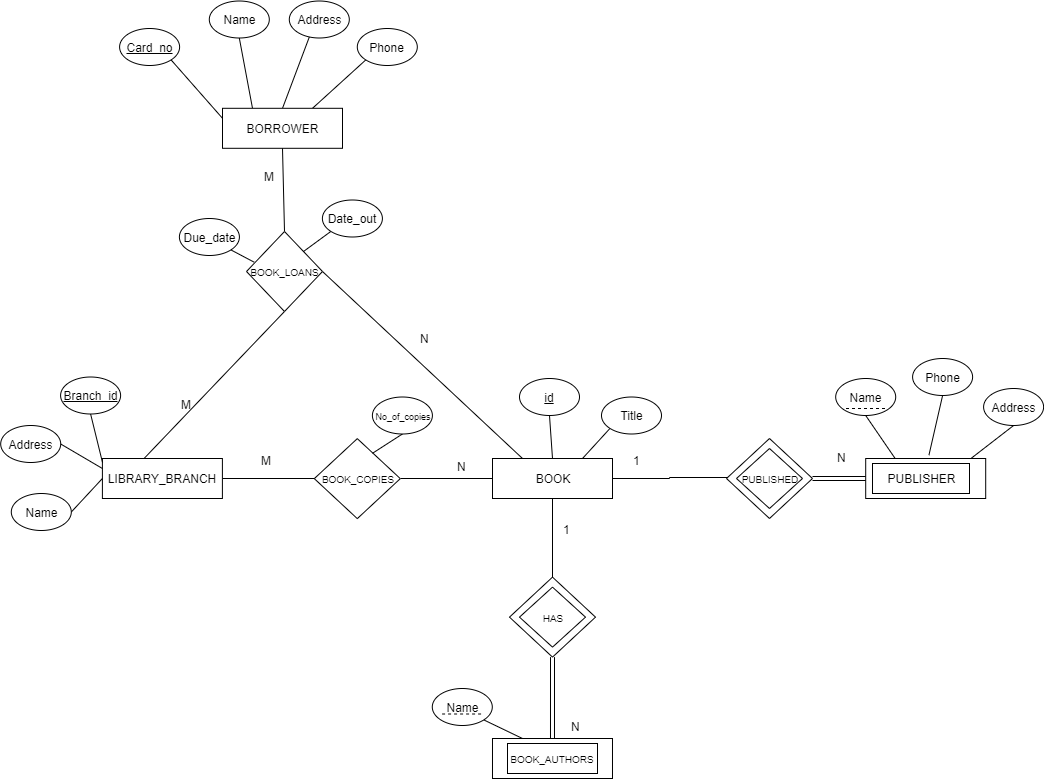
## 8c Option:



## 8d Option:



# Exercise 3:



Assumptions:

* BOOK\_AUTHORS is a weak entity and not a multi-value attribute of BOOK
* PUBLISHER and BOOK\_AUTHORS are a weak entity since Name is not a unique identifier
* BOOK\_LOANS is a 3-ary Relation since it has foreign keys to BOOK, LIBRARY\_BRANCH, and BORROWER primary keys
* BOOK, LIBRARY\_BRANCH, and BORRWER are strong entities since they have unique identifiers such as id, Branch\_id, and Card\_no.