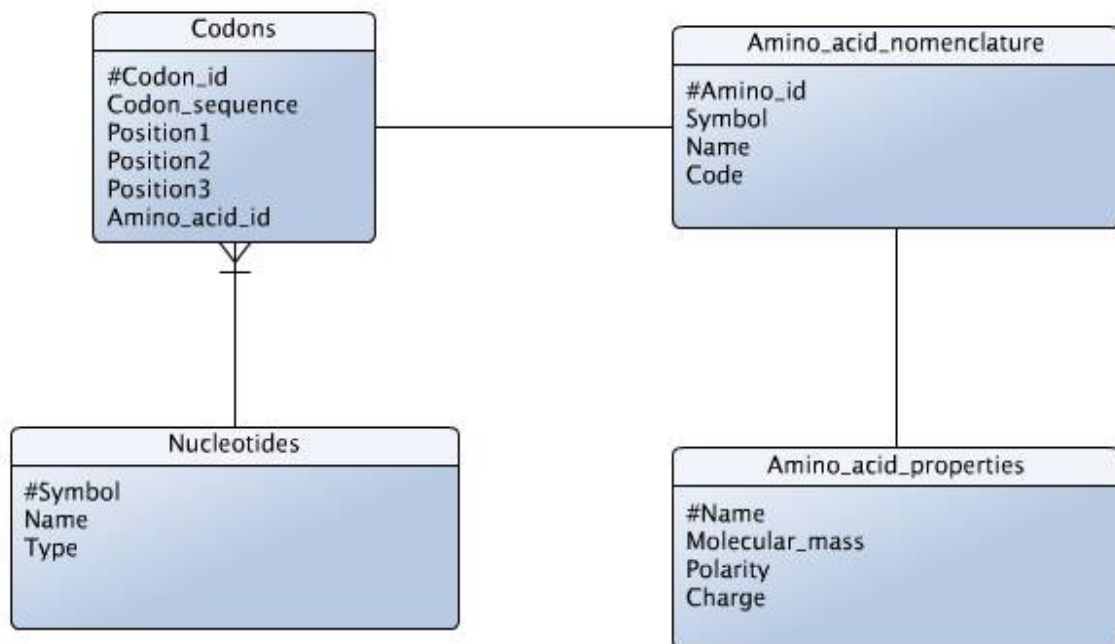


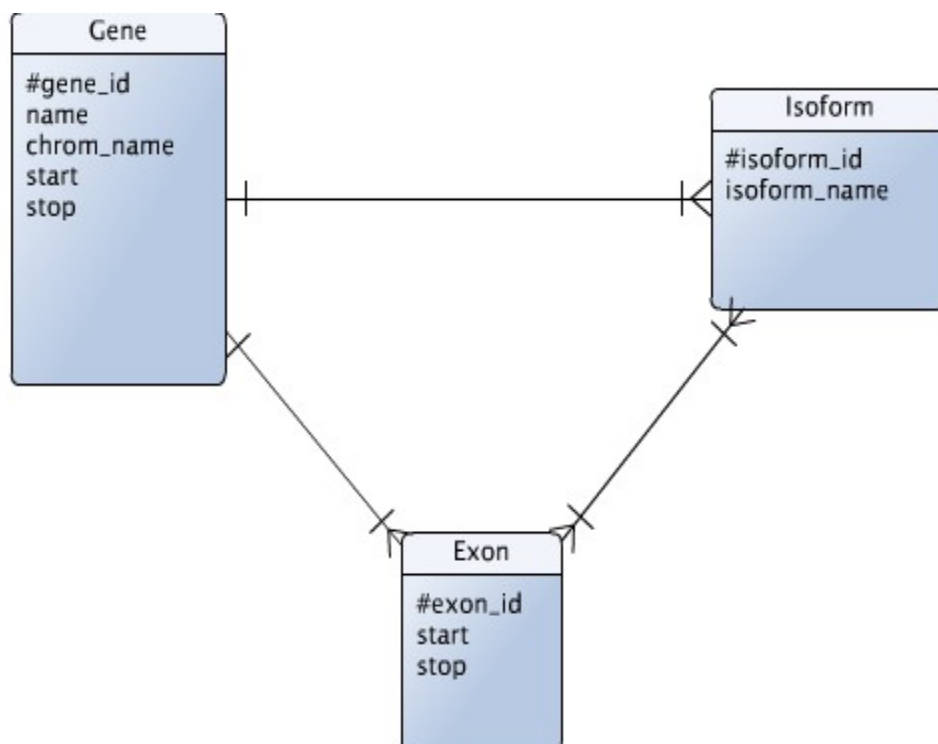
1.



2.

I) entities: Gene, Exon, Isoform

II)



III)

**Gene(#Gene\_id, Gene\_name, Chrom\_name, Start, Stop)**

**Isoform(#Isoform\_id, Isoform\_name, Gene\_id\*)**

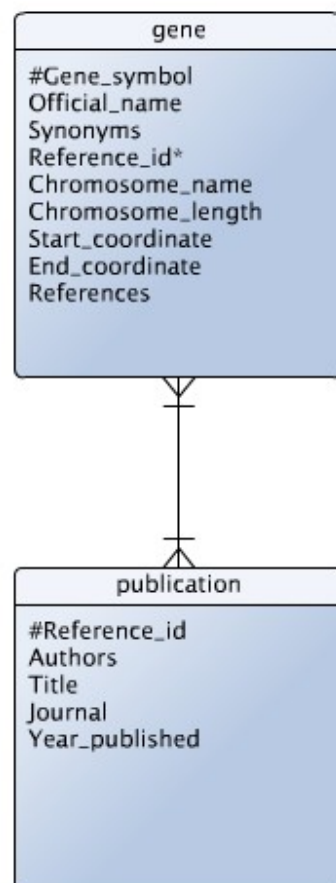
**Exon(#Exon\_id, Start, Stop, Gene\_id\*)**

**Exonset(#Exon\_set\_id, Exon\_id\*, Isoform\_id\*)**

3.

I) entities: Gene, Publication

II)



III)

first norm tables

**Gene(#Gene\_symbol,Chromosome\_name,Chromosome\_length,Official\_name,Start\_coordinate,End\_coordinate)**

**Synonyms(#Synonym\_name, Gene\_symbol\*)**

**Publication(#reference\_id, #Gene\_symbol\* Title, Journal, Year\_published)**

**Author(reference\_id\*, #social\_number, name)**

IV)

Lager BCNF tabell, fjerner avhengigheter, slik som chrom name og chrom length og hjelpetabell for gene (geneSet) for å fjerne mange til mange forhold

**Gene(#Gene\_symbol,Chromosome\_name\*,Official\_name,Start\_coordinate,End\_coordinate)**

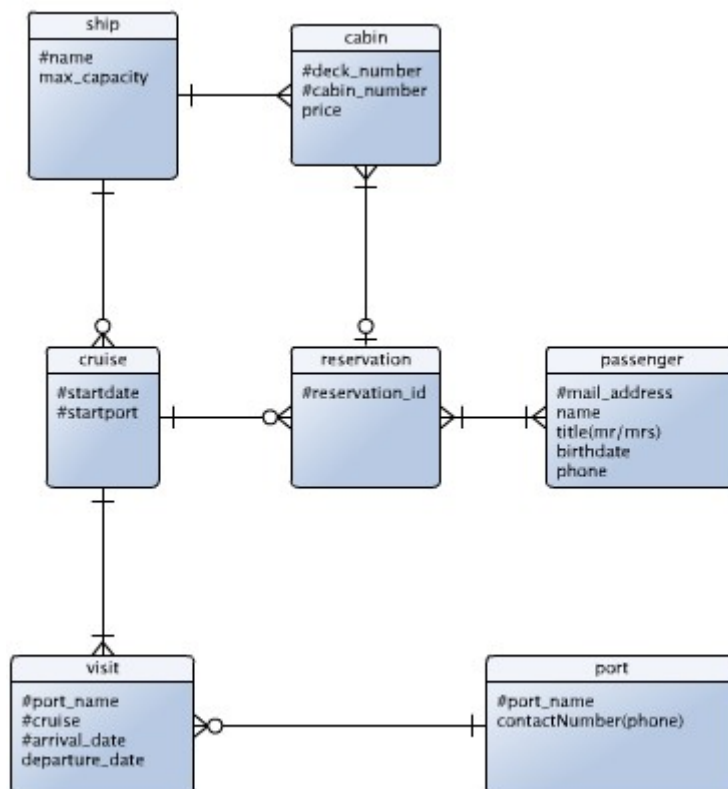
**GeneSet(#publicationID\*,#Gene\_symbol\*,)**

**Publication(#publication\_ID\*, author, Title, Journal, Year\_published)**

**Synonyms(#Synonym\_name, Gene\_symbol\*)**

**Chromosome(#Chromosome\_name\*, Chromosome\_length)**

4.



5.

i)  
problematic because:

model and truck maximum\_weight are dependent on each other and can be put into another table.

It appears that the truck table does not contain a primary key.

Assignment number will change depending on what assignment the truck is on at this very moment. As a result we will never be able to look back and look at what trucks worked on an assignment.

ii)  
functional dependencies:

maximum\_weight and model

registration\_number and registration\_year

model and registration\_number

iii)  
candidate keys:

registration\_number because it is the only key which we can use to search and find all the other values in the table, and only find 1 unique set of values per registration\_number. (distinct tuples)

iv)

To normalize we fix the problem where many trucks can have an assignment and an assignment can have many trucks

Container\_type (#Type\_id, Type\_name, Max\_weight, Cubic\_quantity, Nightly\_rate)

Container (#Container\_number, Type\_id\*)

Customer (#Telephone\_number, Address)

Assignment (#Assignment\_number, Telephone\_number\*, Container\_number\*, Start\_date, End\_date)

truckAssignmentTable(#Registration\_number\*, assignment\_Number\*)

Truck(#Registration\_number, Registration\_year, Model\_name\*)

Model(#Model\_name, Maximum\_weight)

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