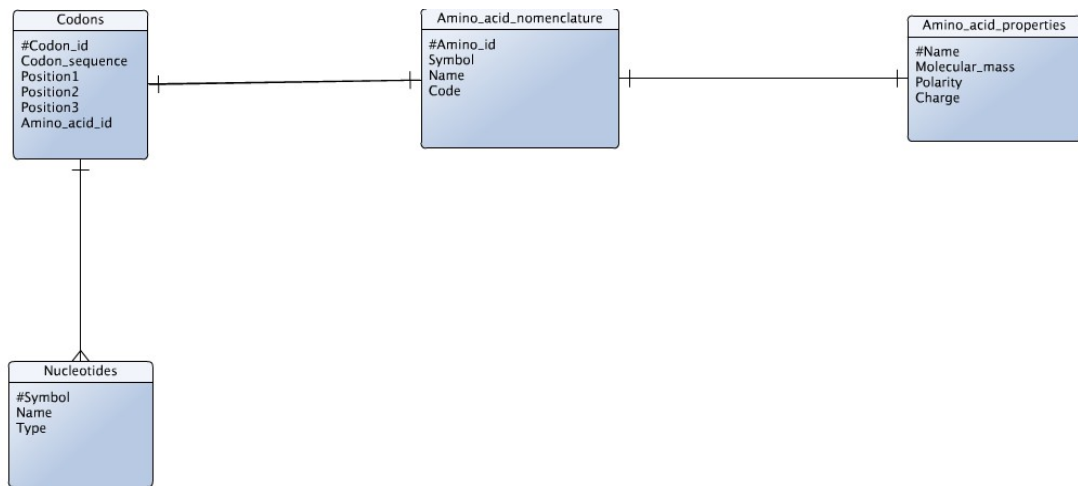


## INF115 – Compulsory Exercise 2

1)

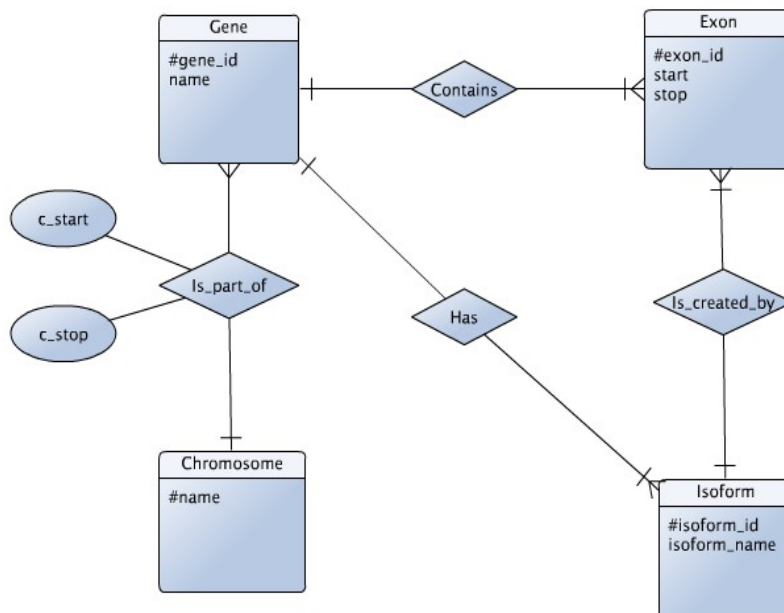


2)

i)

**Entities:** Gene, Exon, Isoform, Chromosome.

ii)



iii)

Chromosome (#name)

Gene\_part\_of\_chrom(#gene\_id\*, c\_name\*, c\_start, c\_stop)

Gene(#gene\_id, name)

Gene\_contains\_exons(#gene\_id\*, exon\_id\*)

Exon(#exon\_id, start, stop)

Isoforms\_Gene\_contains(#gene\_id\*, isoform\_id\*)

Isoform(#isoform\_id, isoform\_name)

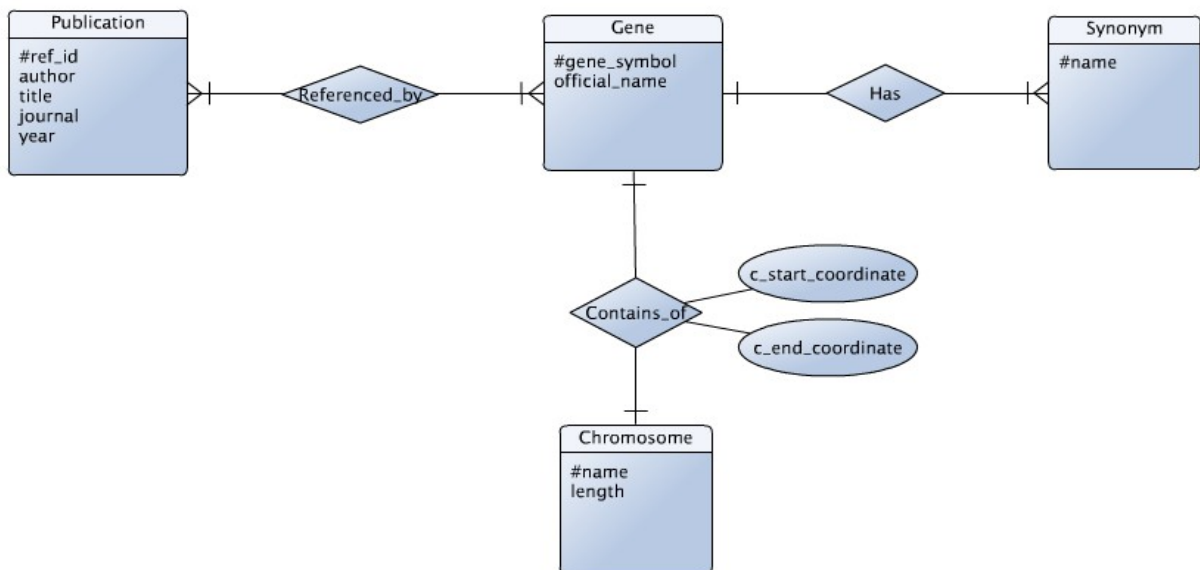
Exons\_Isoforms\_Creates(#isoform\_id\*, exon\_id\*)

3)

i)

Entities: Chromosome, Gene, Publication, Synonym

ii)



iii)

Gene (#gene\_symbol, official\_name, c\_start\_coordinate, c\_end\_coordinate)

Chromosome (#name, length)

Synonyms (#name)

Publication (#ref\_id, authors, title, journal, p\_year)

iv)

Gene(#gene\_symbol, official\_name)

Gene\_is\_referenced\_by(#number, ref\_id\*, gene\_symbol\*)

Chromosome (#name, length)

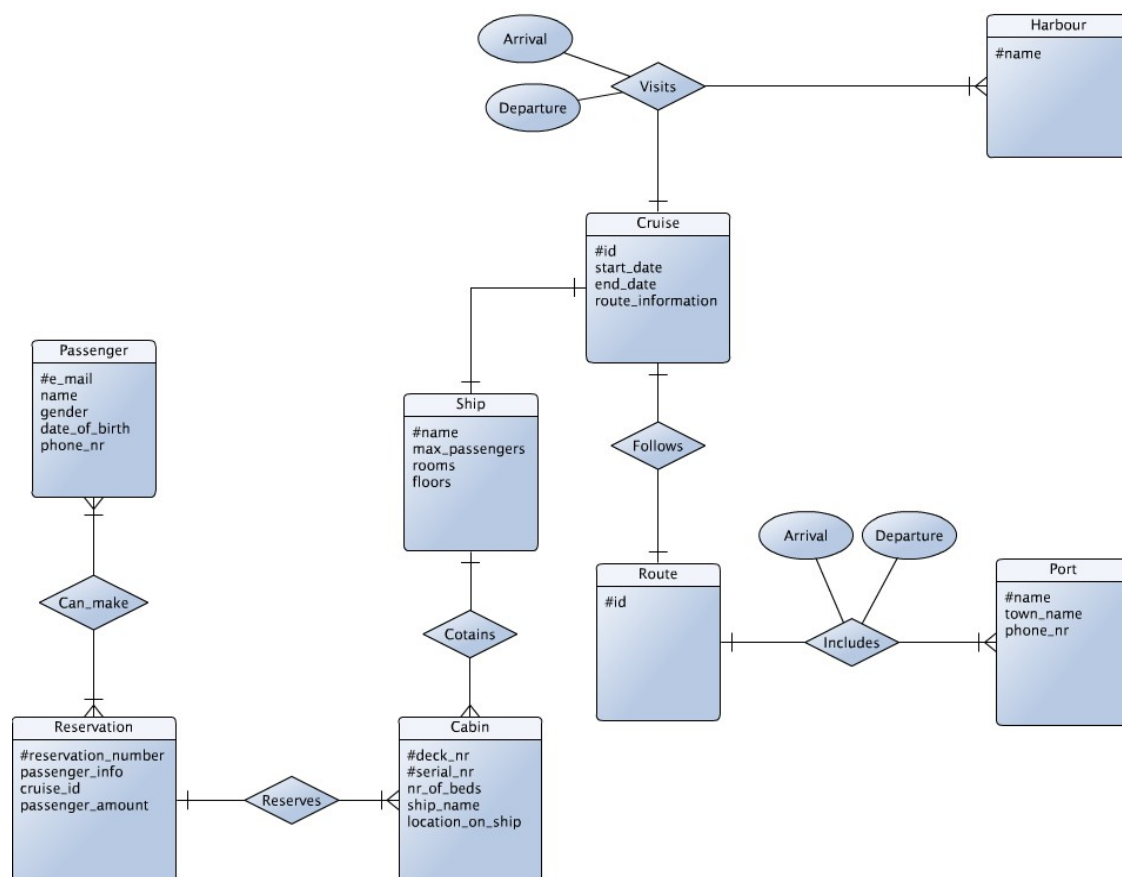
Gene\_Contains\_of\_Chrom(#gene\_symbol\*, #c\_name\*, c\_start\_coordinate, c\_end\_coordinate)

Synonyms (#name)

Gene\_differentNames(#nr, gene\_symbol\*, s\_name\*)

Publication (#ref\_id, authors, title, journal, year)

4)



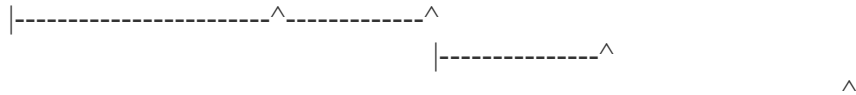
5)

i)

This can be problematic because the Truck table does not have a primary key. The trucks need to be uniquely defined if they are to be involved in the same assignment. You also need your table to be joinable.

ii)

Truck (Registration\_number, Registration\_year, Model, Maximum\_weight, Assignment\_number\*)



iii)

The candidate key is registration\_number.

iv)

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)

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

Truck\_models(#Model, maximum\_weight)

Trucks\_in\_assignments(#id, registration\_number\*, assignment\_number\*)