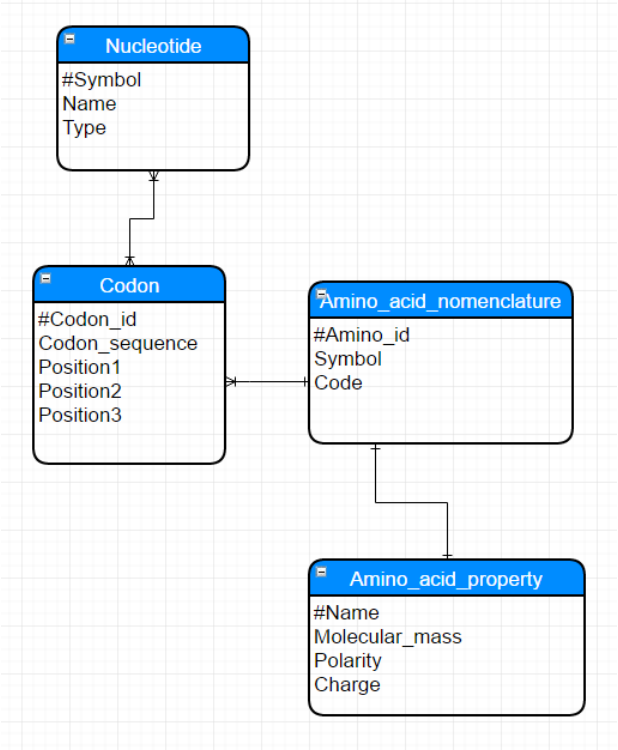
Compulsory exercise 2

1)



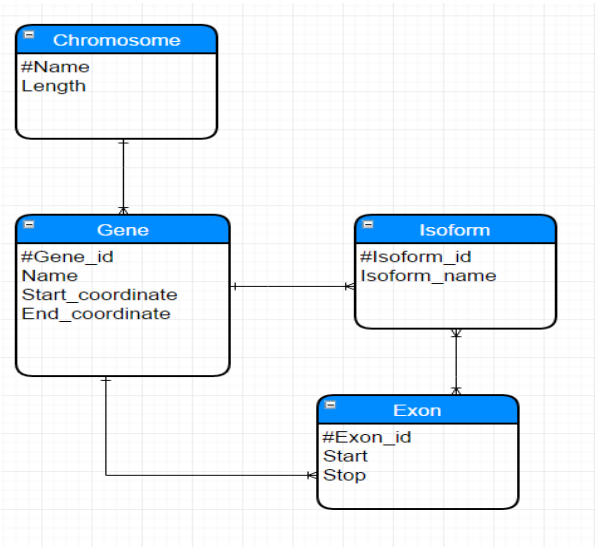
2)

i)

Entities:

- Gene
- Exon
- Isoform
- Chromosome

ii)



iii)

Genes(#Gene_id, Name, Location, Chromosome, Start, Stop)

Exons(#Exon_id, Start, Stop, Gene_id*, Isoform_id*)

Isoforms(#Isoform_id, Isoform_name)

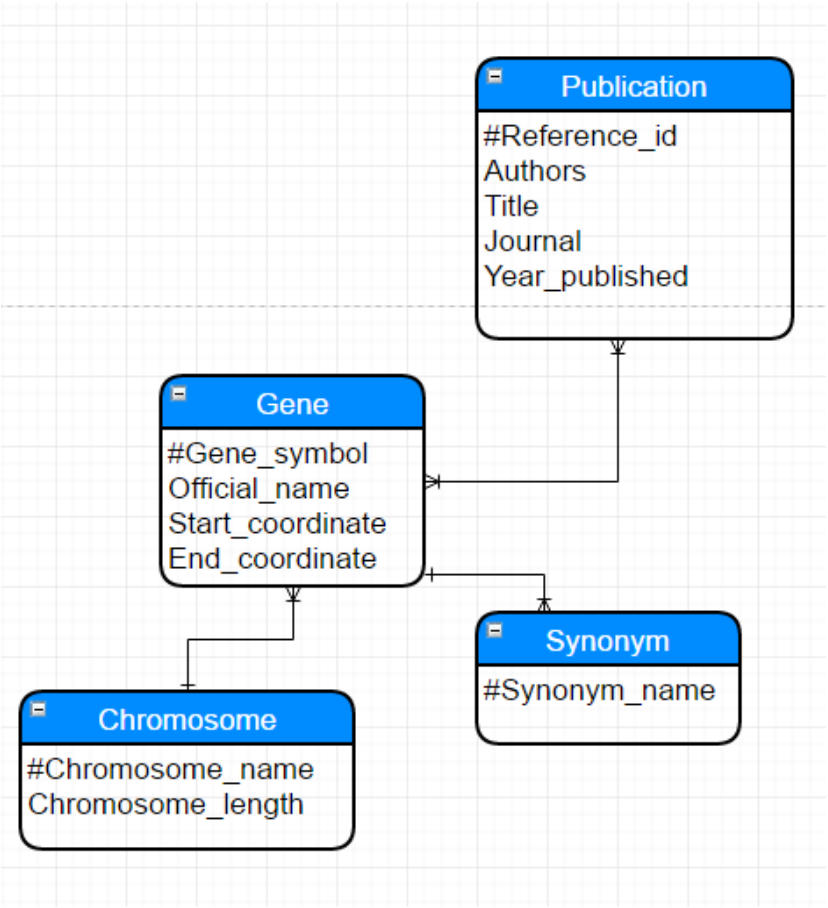
3)

i)

Entities:

- Gene
- Synonym
- Chromosome
- Publication

ii)



iii)

Gene(#Gene_symbol, #Reference_id , #Synonym_name, #Chromosome_name, Official_name, Authors, Title, Journal, Year_published, Chromosome_length, Start_coordinate, End_coordinate)

iv)

Chromosome(#Chromosome_name, Chromosome_length)

Gene(#Gene_symbol, Official_name, , Start_coordinate, End_coordiate, Chromosome_name*, Reference_id*)

Gene_publication(#Gene_symbol*, #Reference_id*)

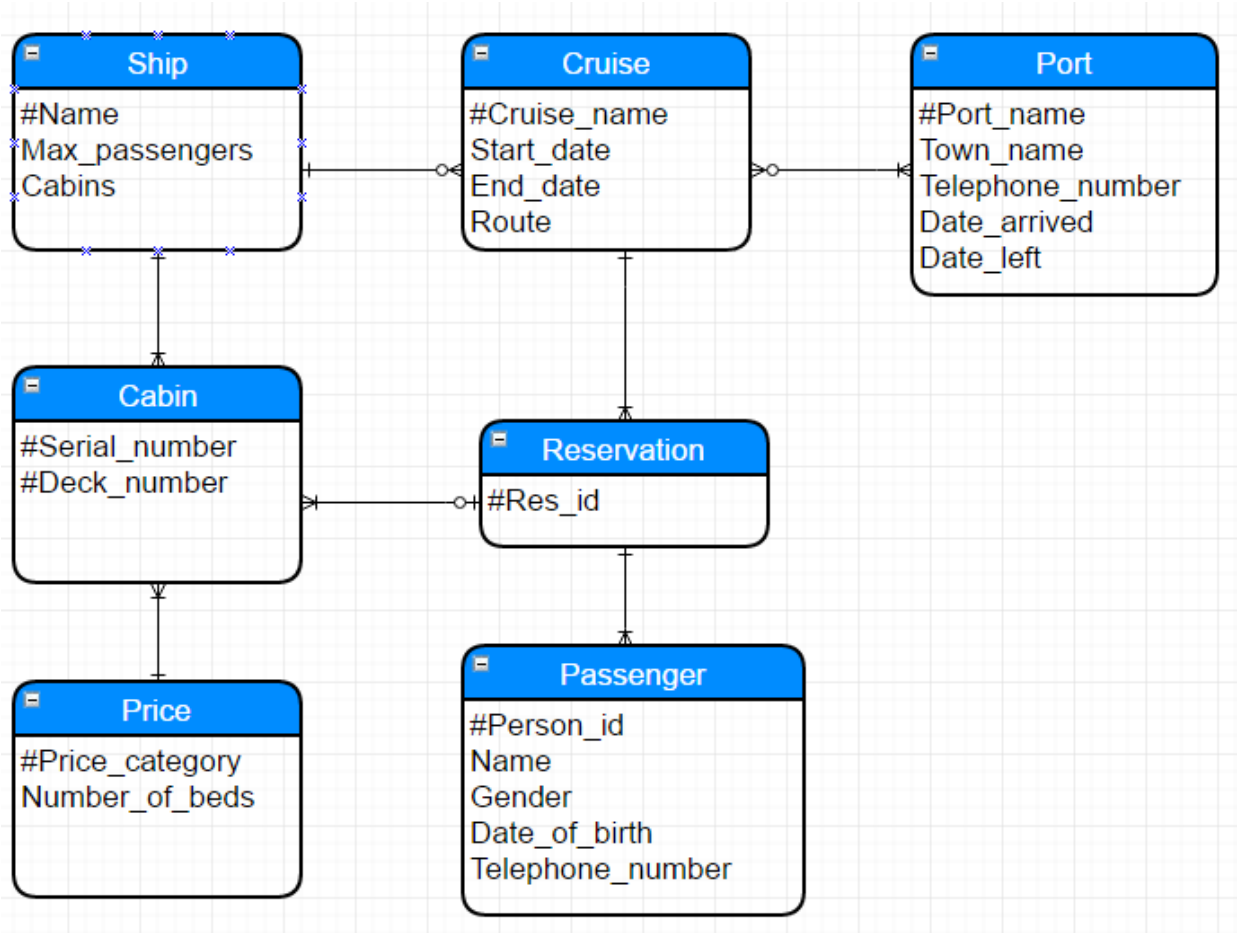
Publication(#Reference_id, Authors, Title, Journal, Year_published)

Synonym(#Synonym_name, Gene_symbol*)

4)

Entities with attributes:

- Ship: Name, Max passengers, Cabins
- Cabin: Deck number, Serial number, Price
- Price category: number of beds, Location
- Cruise: Start date, Start port, Route, Harbours visited
- Passenger: Email, Name, Gender, DOB, Telephone number
- Reservation: Cruise, Passengers, Number of cabins
- Port: Town name, Telephone number, Date ship arrived, Date ship left



5)

i)

The solution proposed by the truck table is problematic because it has no primary key. Because of this, the table might produce duplicates of the same truck.

ii)

Registration_number -> Registration_year, model

Model -> Maximum_weight

iii)

Candidate keys:

- Registration_number, model

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_assignment(#Assignment_number*, #Registration_number*)

Truck(#Registration_number, Registration_year, Assignment_number, Model*)

Model(#Model, Maximum_weight)