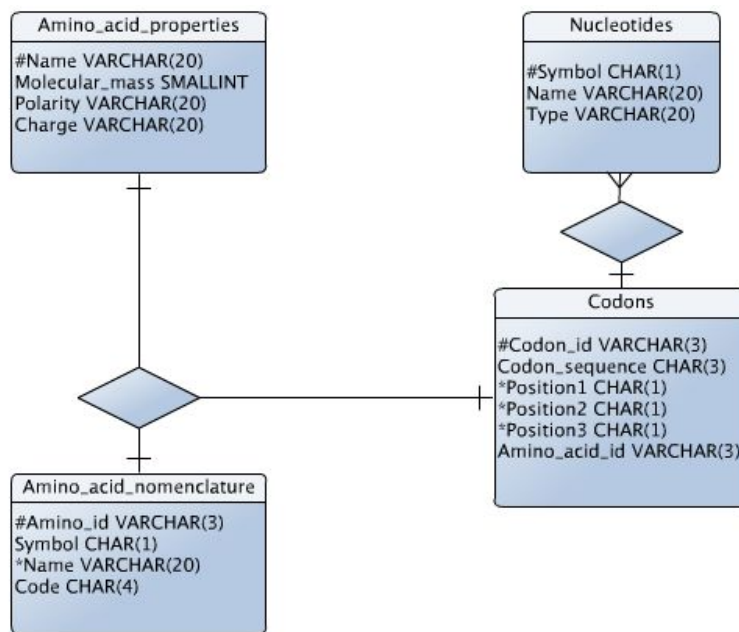
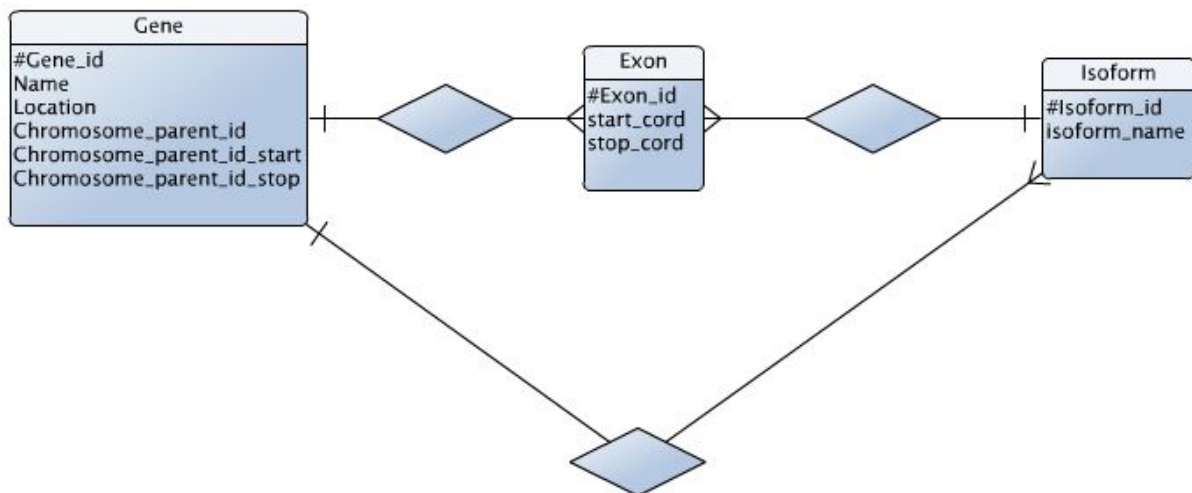


1)



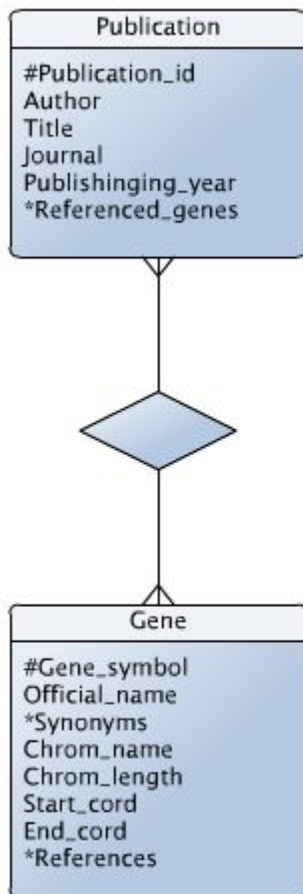
2)



Gene(#Gene_id, Name, Location, Chromosome_parent_id, Chromosome_parent_id_start, Chromosome_parent_id_stop)
 Exon(#Exon_id, start_cord, stop_cord)
 Isoform(#Isoform_id, Isoform_name)

3)

I + ii)



iii)

Gene(#Gene_Symbol, Official_name, *Synonyms, Chrom_name, Chrom_length, Start_cord, End_cord, #References)

Primary key: {Gene_Symbol, Reference}

Synonym(#Official name, Alternative_name)

Publication(#Publication_id, Author, Title, Journal, Publishing_year, #Referenced_genes)

Primary Key: {Publication_id, Referenced Gene}

iv)

Gene(#Gene_Symbol, Official_name, *Synonyms, *Chromosome, *Location, *References)

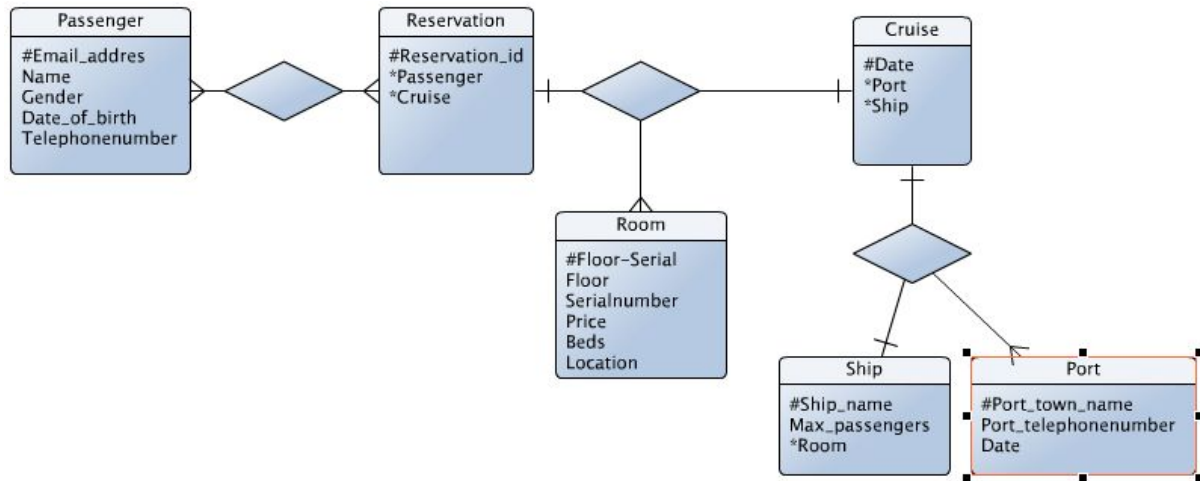
Chromosome(#Chromosome_name, Chromosome_length)

Location(Start_coordinate, End_coordinate)

Synonym(#Official name, Alternative_name)

Reference(#Publication_id, Author, Title, Journal, Publishing_year, *Referenced_genes)

4)



One Passenger can have multiple Reservations.

One Reservation can have multiple Passengers

One Reservation can have one Cruise

One Reservation can have multiple Rooms

One Cruise has one Ship

One Cruise has multiple Ports

5)

i) There is no obvious primary key.

Multiple trucks can be involved in one assignment, and the assignment ID is a foreign key.

ii)

Registration_number → Registration_year

Registration_number → Model

Registration_number → Maximum_weight

Model → Maximum_weight

iii)

Assignment number is no good candidate key, because multiple trucks can be associated with one assignment number.

In this table, it would only make sense if we were to make {Registration_number, Assignment_number} the candidate key, because it can NEVER be duplicated.

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, Maximum_weight)

Delivery(Registration_number*, Assignment_number*)