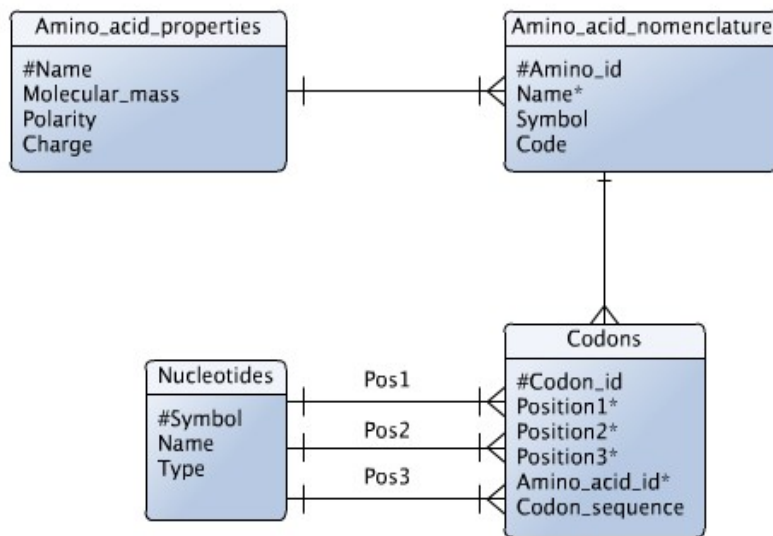
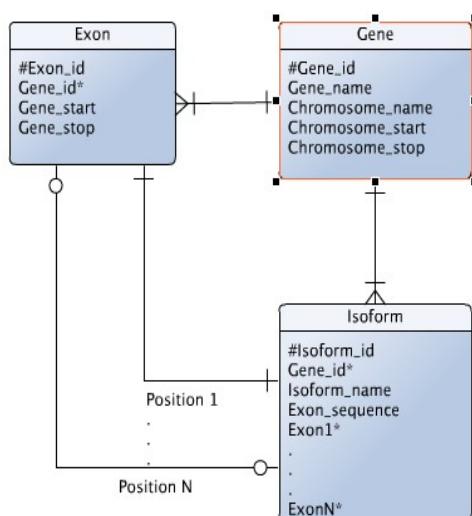


1)



2 i) Gene, Isoform, Exon

2 ii) Antar at Exons er unike innen et gen. Exon sekvensen til et isoform kan potensielt være maksimalAntallExoner (for Genet) langt, men behøver ikke det. Derfor ser vi at relasjonen mellom ExonN og Exon er [min0, max1], hvor en 0 markerer slutten på Exon sekvensen.



2 iii)

Genome(#Genome_id, Genome_name)

Chromosome(#Chromosome_id, Chromosome_name, Genome_id*)

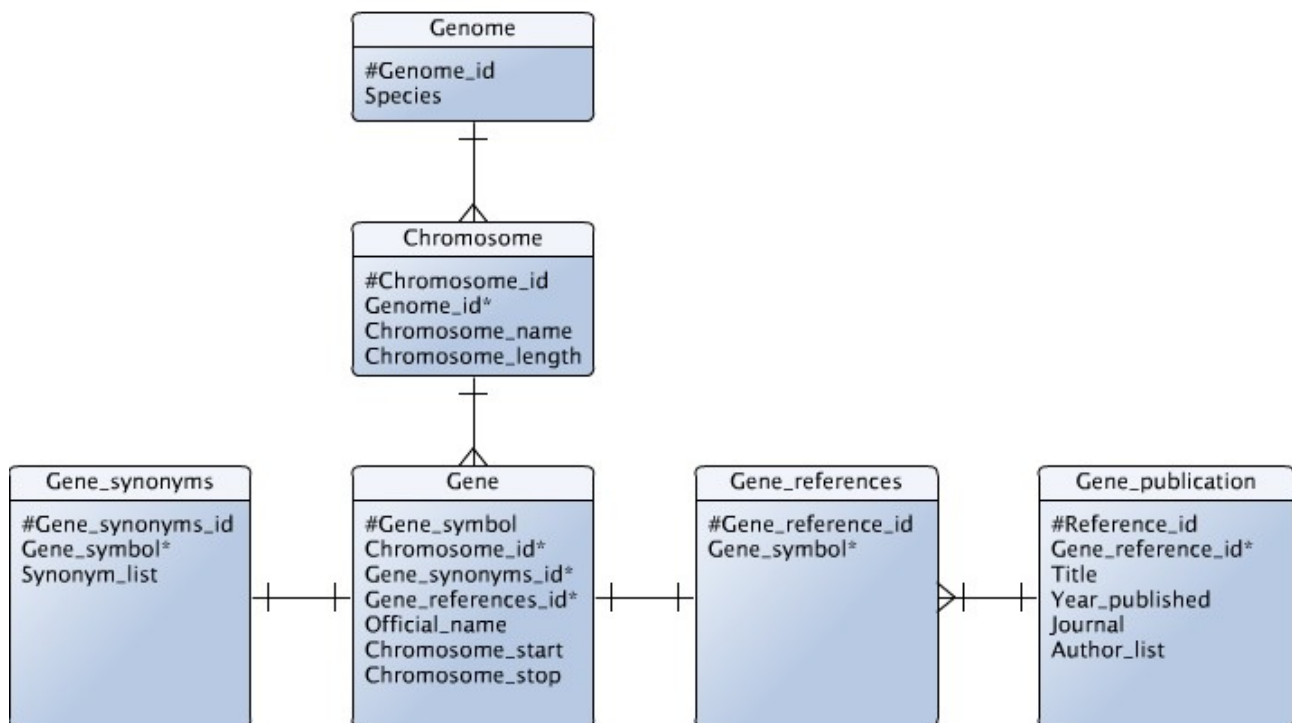
Gene(#Gene_id, Gene_name, Chromosome_id*, Chromosome_start, Chromosome_stop)

Exon(#Exon_id, Gene_id*, Gene_start, Gene_stop)

Isoform(#Isoform_id, Gene_id*, Isoform_name, Exon_sequence, Exon1*, ..., ExonN*)

3 i) Genome, Chromosome, Gene, Gene_synonyms, Gene_references, Gene_publication

3 ii)



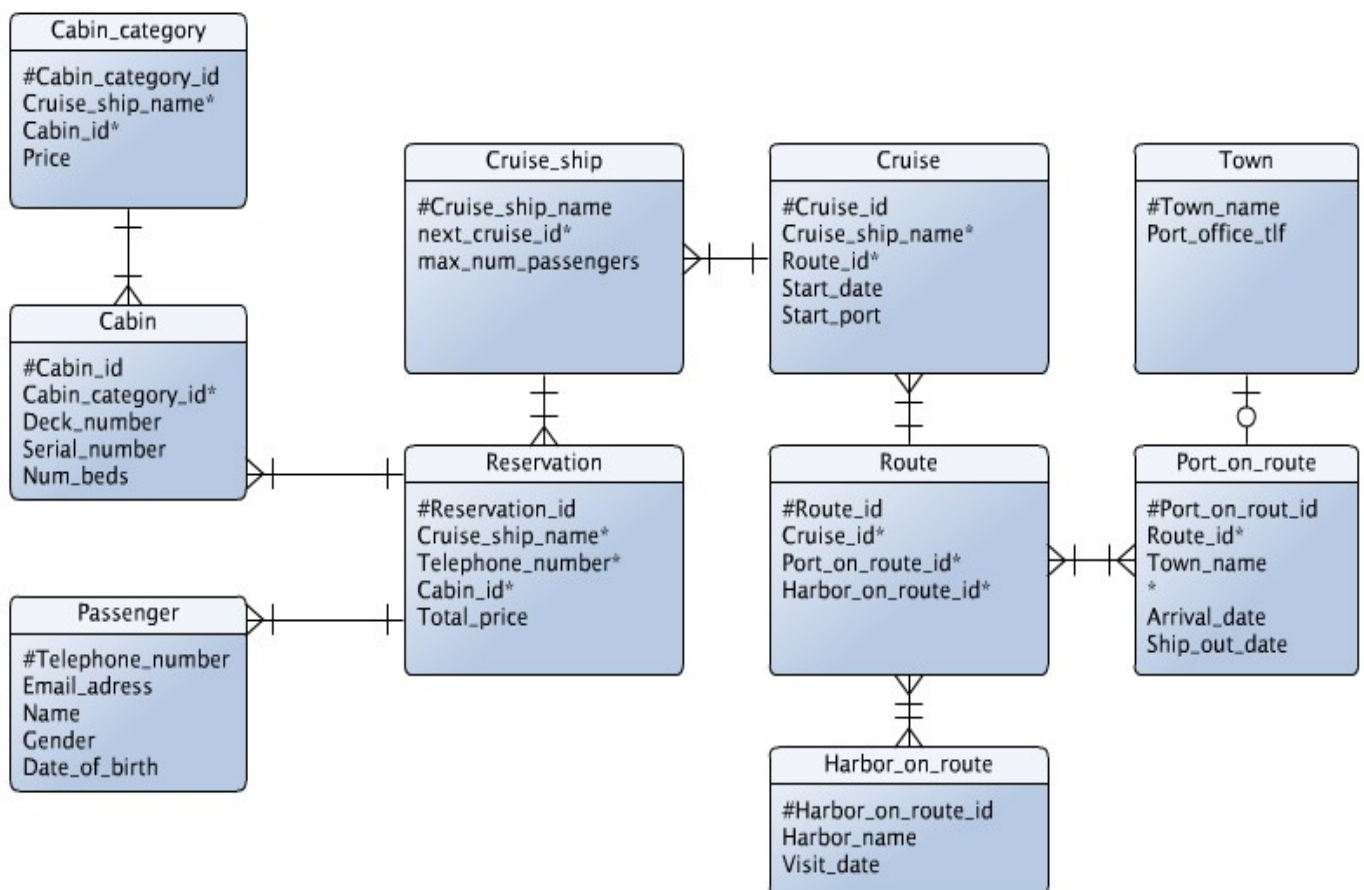
3 iii)

Chromosome(#chromosome_id, #genome_id, chromosome_name, chromosome_length, genome_name, chromosome_name, chromosome_length)**Gene**(#gene_symbol, #gene_synonym_list_id, chromosome_id*, gene_reference_list_id*, official_name, chromosome_start, chromosome_stop)**Gene_synonym_list**(#gene_synonym_list_id, #gene_symbol*, gene_synonym_id*)**Gene_synonym**(#gene_synonym_id, #gene_symbol*, synonym_name)**Gene_reference_list**(#gene_reference_list_id, #gene_symbol*, gene_reference_id*)**Gene_publication**(#gene_reference_id, gene_symbol*, author_list_id*, title, journal, year_published)**Author_list**(#author_list_id*, #reference_id*, author_name*)**Author**(#author_name, author_list_id*)

3 iv)

Genome(#genome_id, species)**Chromosome**(#chromosome_id*, genome_id*)**Chromosome_nomenclature**(#chromosome_id, chromosome_name, chromosome_length)**Gene**(#gene_symbol, chromosome_id*, gene_synonym_list_id*, gene_reference_list_id*, chromosome_start, chromosome_stop, official_name)**Gene_synonym_list**(#gene_synonym_list_id, synonym_id*)**Gene_synonym**(#synonym_id, synonym)**Gene_reference_list**(#gene_reference_list, reference_id*)**Gene_publication**(#reference_id, gene_symbol*, author_list_id*, title, journal, year_published)**Author_list**(#author_list_id, reference_id*, author_name*)**Author**(#author_name, author_list_id*)

4)



5 i)

Ingen primærnøkkel er markert, og Truck vil bli en svak entitet som er avhengig av Assignment for å eksistere

5 ii)

Registration_number, Registration_year -> Model
 Registration_number, Registration_year -> Model, Maximum_weight
 Registration_number, Registration_year, Maximum_weight -> Model
 Registration_number, Registration_year, Model -> Maximum_weight
 Model -> Maximum_weight

5 iii)

Registration_number

5 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)
Transport(#Transport_id, Assignment_number*, Truck_id*, Start_location, End_location)
Truck(#Truck_id, Transport_id, Registration_number, Registration_year, Model, Maximum_weight)