Cem S. Pedersen

INF115 Compulsory Exercise 2

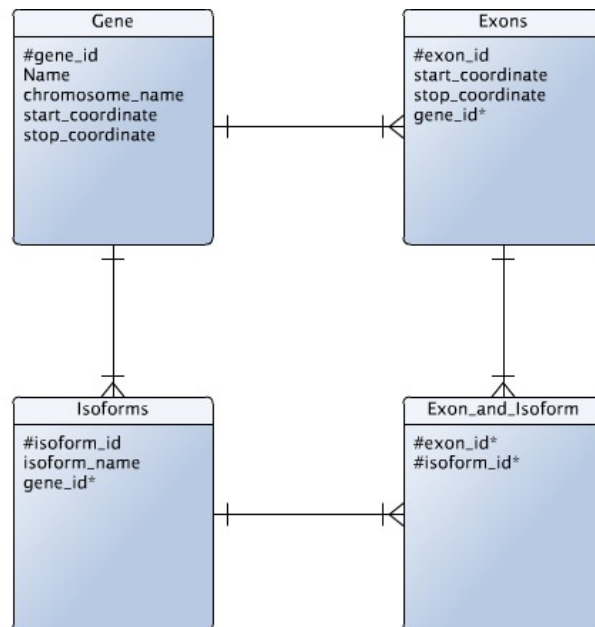1)

Codons
#Codon_id
Codon_sequence
Position1*
Position2*
Position3*
Amino_acid_id*

Amino_acid_nomenc...
#Amino_id
Symbol
Name*
Code

Nucleotides
#Symbol
Name
Type

Amino_acid_propert...
#Name
Molecular_mass
Polarity
Charge

2)

i)

Gene
#gene_id
Name
chromosome_name
start_coordinate
stop_coordinate

Exons
#exon_id
start_coordinate
stop_coordinate
gene_id*

Isoforms
#isoform_id
isoform_name
gene_id*

Exon_and_Isoform
#exon_id*
#isoform_id*

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ii)

Gene
#gene_id
Name
chromosome_name
start_coordinate
stop_coordinate

Exons
#exon_id
start_coordinate
stop_coordinate
gene_id*

Isoforms
#isoform_id
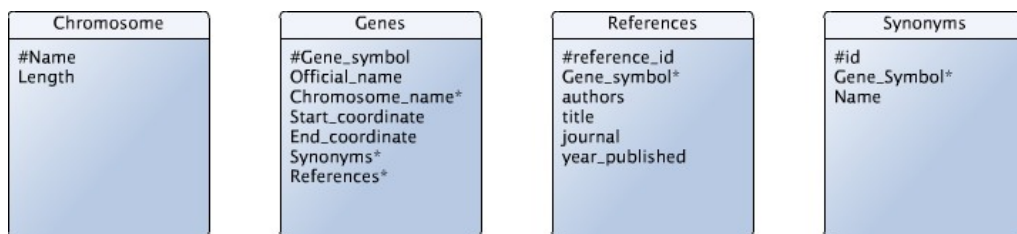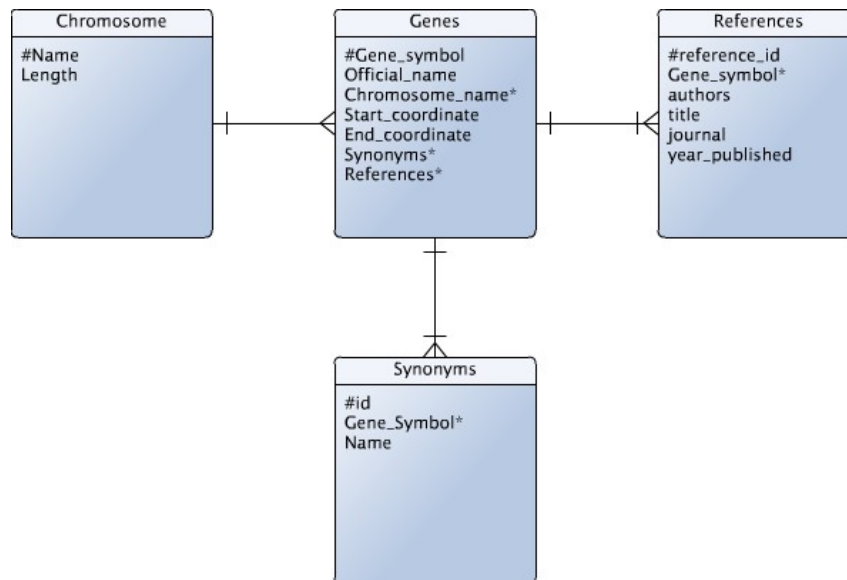isoform_name
gene_id*

Exon_and_Isoform
#exon_id*
#isoform_id*

iii) Genes(#gene_id, Name, chromosome_id* start_coordinate, stop_coordinate)

Chromosome(#chromosome_id, Name)

Exons(#exon_id, start_coordinate, stop_coordinate, gene_id*)

Isoform(#isoform_id, isoform_name, gene_id*)

Exon_and_Isoform(#exon_id*, #isoform_id*)

3)

i)

Chromosome
#Name
Length

Genes
#Gene_symbol
Official_name
Chromosome_name*
Start_coordinate
End_coordinate
Synonyms*
References*

References
#reference_id
Gene_symbol*
authors
title
journal
year_published

Synonyms
#id
Gene_Symbol*
Name

ii)

Chromosome
#Name
Length

Genes
#Gene_symbol
Official_name
Chromosome_name*
Start_coordinate
End_coordinate
Synonyms*
References*

References
#reference_id
Gene_symbol*
authors
title
journal
year_published

Synonyms
#id
Gene_Symbol*
Name

iii)

Genes(#Gene_symbol, Chromosome_name*, Official_name, Start_coordinate, End_coordinate, Synonyms*, References*)

Chromosome(#Name, Length)

References(#reference_id, Gene_symbol*, authors, title, journal, year_published)

Synonyms(#id, Gene_symbol*, Name)

iv) Genes(#Gene_symbol, Chromosome_name*, Start_coordinate, End_coordinate, Synonyms*, References*)

Gene_Name(#Gene_symbol*, Name)

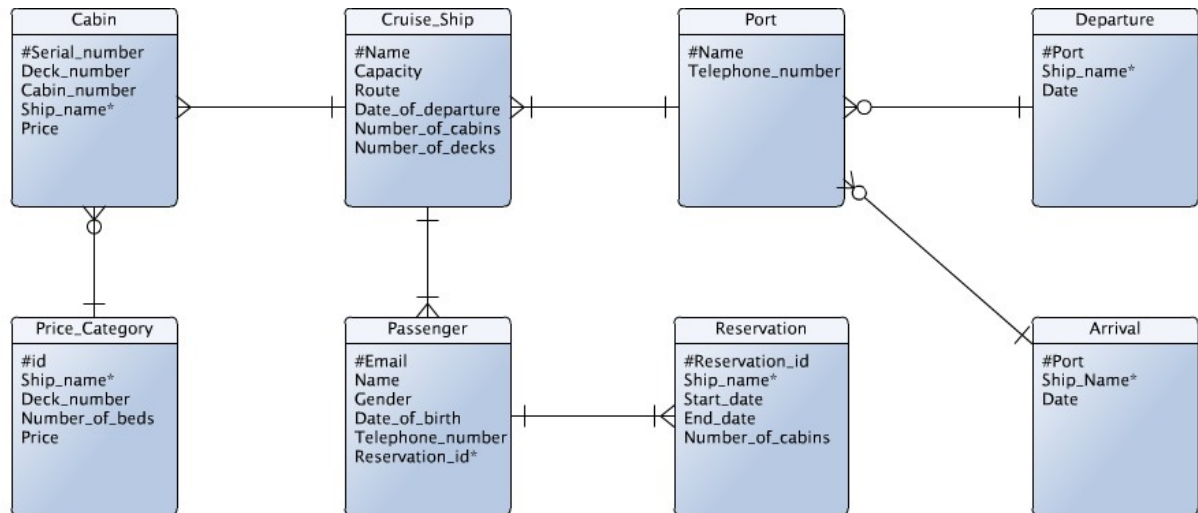Chromosome(#Name, Length)

References(#Reference_id, #Gene_symbol*)

Title(#Reference_id, #Title*)

Publication(#Title*, author, journal, year_published)

Gene_Symbol(#id, #Gene_symbol*)

Synonyms(#id*, Name)

4)

5)

i) Problemet oppstår når det ikke fins en attributt som identifiserer en lastebil. Det har ikke blitt gitt primærnøkkel som gjør det. Det er også at en lastebil kan være med på flere jobber, dvs Assignment_number kan ikke identifisere en viss lastebil. Derfor trenger vi Registration_number til å være en primærnøkkel. Det er også slik at vi har ikke noe informasjon om hvilken container en viss lastebil bærer.

ii) Registration_number ----> Registration_year

Registration_number ----> Model

Registration_number ----> Assgnment_number

Model ----> Maximum_weight

iii) Kandidatnøkler er Registration_number og Assignment_number

iv) Container_type(#Type_id, Type_name, Max_weight, Cubic_quantity, Nighty_rate)

Container(#Container_number, Type_id*)

Customer(#Telephone_number, Address)

Assignment(#Assignment_number, Telephone_number*, Start_date, End_date)

Containers_for_Assignment(#Assignment_number*, Container_number*)

Truck(Registration_number, Registration_year, Model*)

Truck_Capacity(#Model, Max_weight)

Truck_for_Assignment(#Registration_number*, #Assignment_number*)