CSC 365 - Introduction to Database Systems **Homework Assignment 3**

Homework Assignment 3: E-R Diagramming and Normalization

Part A: Entity-Relationship Diagrams

1. Using Crow's Foot notation, draw an Entity-Relationship diagram that corresponds to the KATZENJAMMER lab database.
2. Using Crow's Foot notation, draw an Entity-Relationship diagram that corresponds to the AIRLINES lab database.

Part B: Functional Dependencies & Normalization

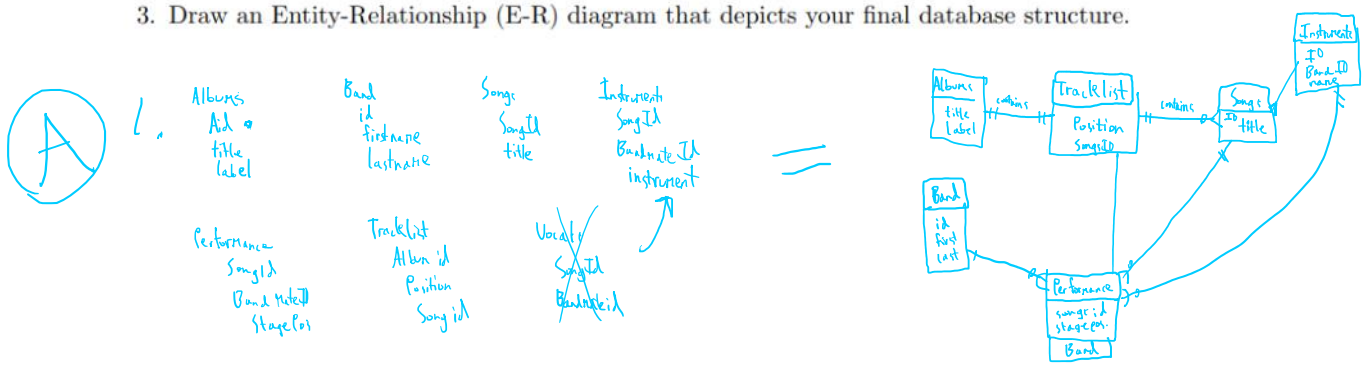
NURSERY_ORDERS

Order	Date	CustId-Name	State	Item	Description	Color	Price	Quantity	TaxRate
009	5/6/2019	4-Cornie Fitchew	WA	bd5	Bluebell Bellflower	Blue	22.85	5	6.50
542	11/20/2019	5-Ros Alenikov	CA	453	Longflower Primrose		17.50	5	8.25
542	11/20/2019	5-Ros Alenikov	CA	75d	Giant Airplant	Blue	31.93	7	8.25
542	11/20/2019	5-Ros Alenikov	CA	35b	Spanish Elm		24.43	4	8.25
857	2/11/2020	6-Celia Rambadt	NV	94f	Hacksaw Fern		20.80	7	7.25
857	2/11/2020	6-Celia Rambadt	NV	453	Longflower Primrose	Blue	17.50	1	7.25
857	2/11/2020	6-Celia Rambadt	NV	bd5	Bluebell Bellflower	Violet	22.85	10	7.25
023	2/11/2020	4-Cornie Fitchew	WA	35b	Spanish Elm		24.43	9	7.00
023	2/11/2020	4-Cornie Fitchew	WA	75d	Giant Airplant	Crimson	31.93	2	7.00

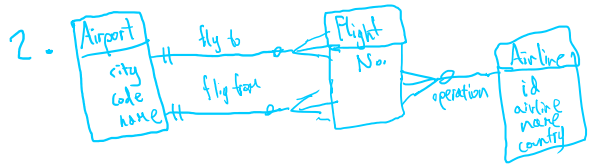
1. Based on the NURSERY_ORDERS table above, list all functional dependencies. Consider not just the sample data, but any possible data that conforms to this schema.
2. Normalize the table to Third Normal Form (3NF)
3. Draw an Entity-Relationship (E-R) diagram that depicts your final database structure.

A

1.



2.



B

1.

Order → CustId-Name

Date → State

item → Desc

Cust [d-name, item → *

2. Order (order, cust ID-name, State, Date, item)
item (Desc, color, quantity, taxrate)

OR

customer_id-name (name, state item)
item (code, data, item ID, desc)
desc (color, price, quantity, tax)

3.