Assignment 1 Design Document: Enhanced ER diagram Farm Contractor Spraying chemical usage

Video Link: https://youtu.be/f5wsO3Z3i4M

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Business description

An agricultural contracting crop spraying business needs to keep track of list of customers (farmers) and the chemical sprays associated with each spraying job. The farmer will create an order and from there the chemical (spray) is assigned and volume used. Also tracked is the quantity on hand (quantity stock) and the operator who performs the job as well as supplier of the chemical spray. For environmental compliance this ER system needs to be set up detailed below to keep log of chemical used, and on what farm, along with quantity of usage. For training purposes each operator can have an apprentice assigned to them. The apprentice needs to have a number of acres of spaying completed with experienced operator before becoming qualified, and so the ER system will track the apprentice work also.

Farmer name, email phone and Id need to be recorded when they book their order. Each order will have an order number, date, and order total or cost.

Operators are kept in a list, with their name, operator ID, and rate per acre. Each operator has one apprentice.

Record of chemical used needs to be kept, including chemical id number, description quantity in stock (with contractor) and cost per litre of volume.

Supplier details of chemical need to be recorded, name etc.

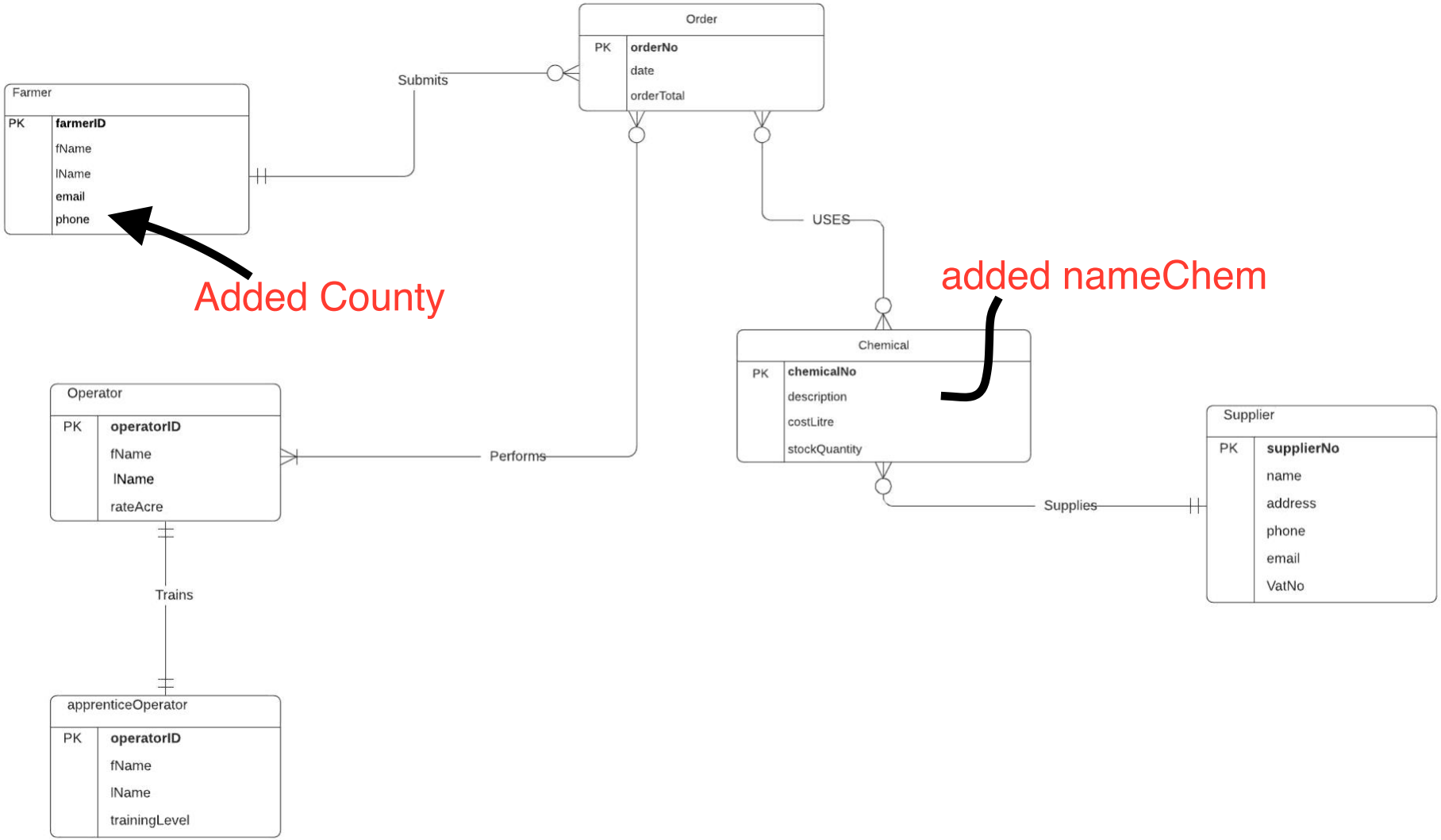
Each farmer will submit 0 or more orders, each order will involve one farmer.

Chemical will be bought from one supplier, who can supply quiet a lot of different chemicals on the market, assume many.

Every order is performed by at least one operator, every operator will perform 0 or more orders.

An order will use 0 or more chemicals, and a chemical can be used in one or more orders.

Enhanced ER diagram



Logical Design

Farmer(farmerID,
fName, lName, email, phone)
Primary Key (farmerID)

Order (orderNo, date, orderTotal, farmerID)
Primary Key orderNo
Foreign Key farmerID referemces Farmer(farmerId)

Operator (operatorID, fName, lName, rateAcre,
Primary Key (operatorID)

Supplier (supplierNo, name, address, phone, email, vatNo,
Primary Key (supplierNo)

Chemical (chemicalNo, description, cost, quantity, supplierNo)
Primary Key (chemicalNo)
Foreign Key supplierNo references Supplier(supplierNumber)

Chemical (chemicalNo, description, cost, quantity, supplierNo)
Primary Key (chemicalNo)
Foreign Key supplierNo references Supplier(supplierNumber)

apprenticeOperator (operatorID, fName, lName, trainingLevel)
Primary key (operatorID, fName, lName,)

Performs(operatorId, orderNo, acres)
Primary Key operatorId, orderNo
Foreign Key operatorId references Operator(operatorId)
Foreign key orderNo references order(orderNo)

Uses(orderNo, chemiclaNumber, volumeLitre)
Primary Key orderNo, chemicalNo
Foreign Key orderNo references Order(orderNo)
Foreign Key chemicalNo references Chemical(chemicalNo)

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