For the following scenarios; Draw ER diagram. For this lab you may use MS Visio or Lucid chart’s Crow’s Foot Notation. Make sure your diagram is complete in all respects. Please create a rough draft on paper first then map it on to the tool.

Process of Developing ERD:

• Identify the entity

• Identify the entity's attributes

• Identify the Primary Keys

• Identify the relationship between entities

• Identify the Cardinality constraint

• Draw the ERD

• Check the ERD

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# Scenario 1:

A Trainer trains one or many horses and a horse is trained by no more than one Trainer. A given horse competes in a particular race ridden by a particular jockey on a specific date and the position (i.e. 1 st,2nd etc) in which a horse finishes is recorded.

# Scenario 2:

The dealership sells both new and used cars, and it operates a service facility. Base your design on the following business rules:

* A salesperson may sell many cars, but each car is sold by only one salesperson.
* A customer may buy many cars, but each car is bought by only one customer.
* A salesperson writes a single invoice for each car he or she sells.
* A customer gets an invoice for each car he or she buys.
* A customer may come in just to have his or her car serviced; that is, a customer need not buy a car to be classified as a customer.
* When a customer takes one or more cars in for repair or service, one service ticket is written for each car.
* The car dealership maintains a service history for each of the cars serviced. The service  records are referenced by the car’s serial number.
* A car brought in for service can be worked on by many mechanics, and each mechanic may work on many cars.
* A car that is serviced may or may not need parts (e.g., adjusting a carburetor

or cleaning a fuel injector nozzle does not require providing new parts).

# Scenario 3:

A manufacturing company produces products. The following product information is stored: product name, product ID and quantity on hand. These products are made up of many components. Each component can be supplied by one or more suppliers. The following component information is kept: component ID, name, description, suppliers who supply them, and products in which they are used.

# Scenario 4:

GAP store is located on Queens Mary Road, Liverpool city center opposite McDonalds. This store has a ground floor for men’s wear, 1st floor for lady’s wear and 2nd floor for children wear. Each floor has two cash tills and cashiers are always present on tills. For each shift manager is responsible for opening the till and startup cash for the till. Cash consists of mainly coins and 10, 20-pound notes. Each floor has 6 sales persons, serving the customer. The shop is managed by a single manager whose job is to open and close the shop, report cash in the till at the end of each day, manage cashiers and sales persons.

Products are maintained by the store and each product comes in 4 sizes i.e. small, medium, large and xtra large. Quantity, cost price, sales price and sale%off (if any) are maintained by the system. Products are entered in the system by sales manager only.

System maintains complete report of each sale in order to generate total sale per day, sale per month reports etc. In case of any returns, manager is responsible for making the return transactions.

You need to automate this system by developing software for them that manages staff and products.

# Scenario 5:

UPS prides itself on having up-to-date information on the processing and current location of each shipped item. To do this, UPS relies on a company-wide information system. Shipped items are the heart of the UPS product tracking information system. Shipped items can be characterized by item number (unique), weight, dimensions, insurance amount, destination, and final delivery date. Shipped items are received into the UPS system at a single retail center. Retail centers are characterized by their type, uniqueID, and address. Shipped items make their way to their destination via one or more standard UPS transportation events (i.e., flights, truck deliveries). These transportation events are characterized by a unique scheduleNumber, a type (e.g, flight, truck), and a deliveryRoute. Please create an Entity Relationship diagram that captures this information about the UPS system. Be certain to indicate identifiers and cardinality constraints.