

# Database Management Systems

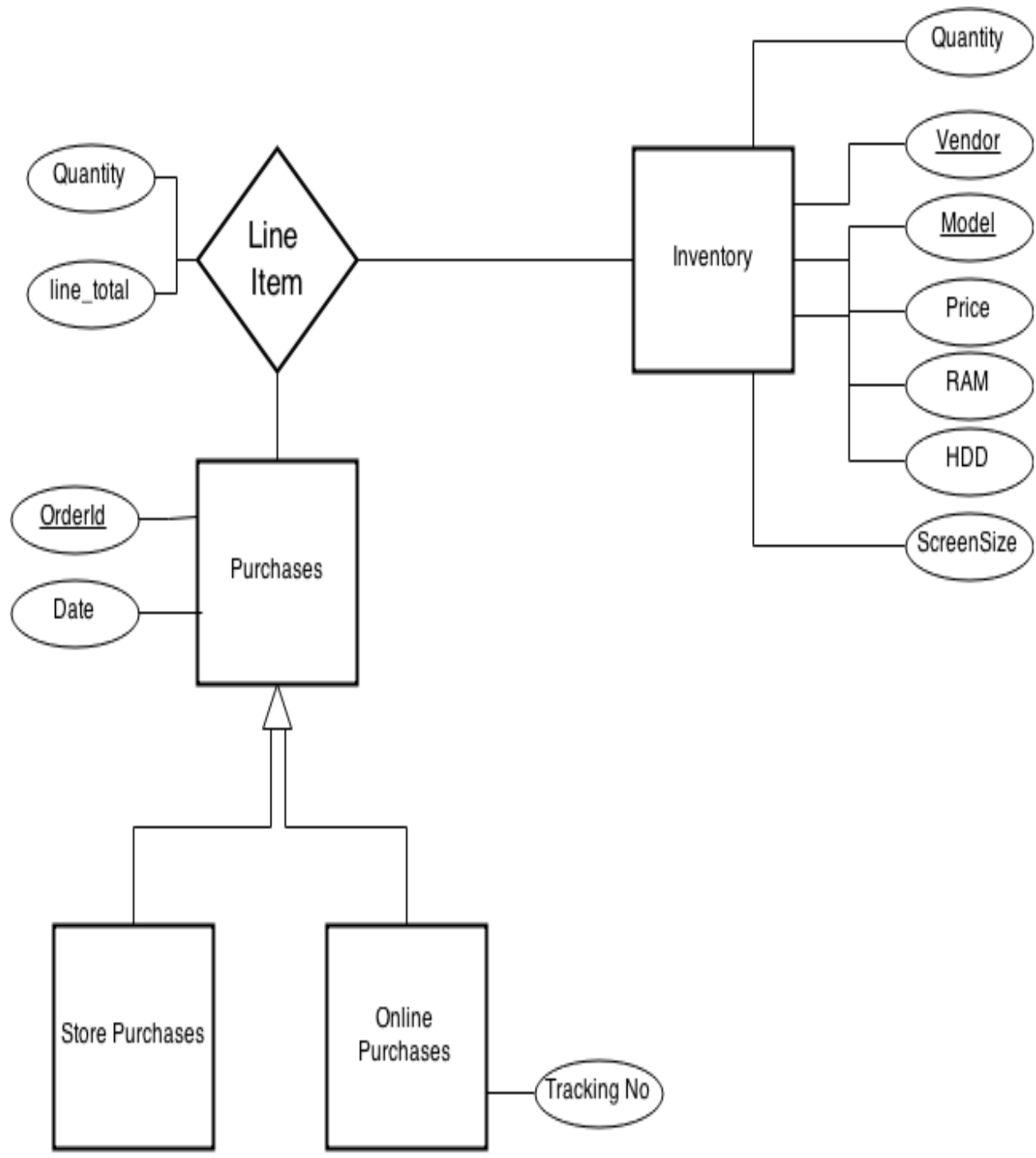
## Assignment 2

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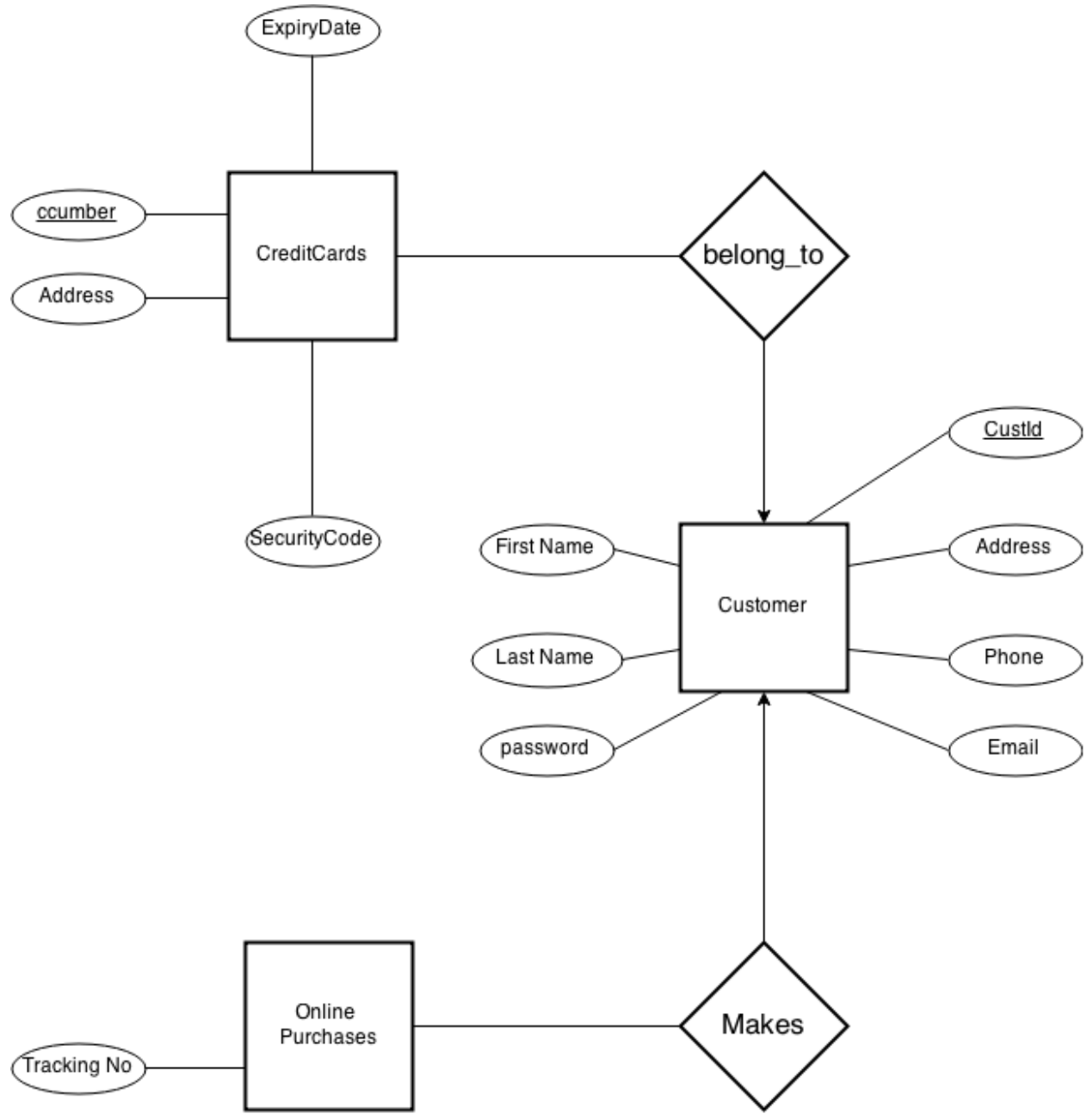
4/14/2015

## Entity Relationship Diagrams

### ERD1 – Branch Database



## ERD 2 – Online/Central Database



## Pre-Normalized Table Relations

creditcards(ccnumber, SecurityCode, Address, ExpiryDate)

Customer(CustID, First Name, Last Name, Phone, Email, Address)

Inventory(Vendor, Model, Quantity, Price, RAM, HDD, ScreenSize)

Line\_Item(Quantity, Line\_Total)

Online\_Purchases(Tracking No.)

Store\_Purchases()

## Functional Dependencies

ccnumber → Address, Expiry Date, Security Code

CustID → Address, Email, First Name, Last Name, Password, Phone

Model → Vendor

(Vendor, Model) → Hdd, Ram, Screensize, Price

OrderID → Tracking No., Date

## Normalized Table Relations

### Branch Database

- inventory(Vendor, Model, quantity, ram, hdd, screensize, price)
- line\_item(Vendor, Model, Order Id, quantity, line\_total)
- store\_purchases(OrderId, purchase\_date)

### Online Database

- online\_purchases(OrderId, TrackingNo, CustId, purchase\_date)
- line\_item(Vendor, Model, Order Id, quantity, branch\_id, line\_total)
- customer(CustId, Name, Address, Phone, Email, password)
- creditcards(ccnumber, address, securitycode, expirydate, CustId)

## Data Dictionary

Table/Attributes	Description
<b>Credit_Cards</b>	Title of table
Address	The mailing or billing location of the card owner.
ExpiryDate	The date at which the credit card becomes invalid for use.
<u>ccnumber</u>	The numerical string identifying a credit card.
SecurityCode	The numerical string provided by the card distributor for card verification during online purchases.
<b>Customer</b>	Title of table
Address	The mailing location of a customer.
<u>CustID</u>	(Customer Identification) Numerical identification of the card holder within the table.
Email	The electronic mailing address of a customer.
First Name	The given name of a customer.
Last Name	The surname of a customer.
Password	A string required by a customer for system logins.
Phone	The numerical string for contacting a customer.
<b>Inventory</b>	Title of table
<u>Model</u>	A string representing the make identification of vendor's computer
<u>Vendor</u>	The name of a computer manufacturer/distributor.
Hdd	Numerical value representing the size of a hard drive for a given model
Ram	Numerical value representing the size of a model's random access memory.
Screensize	Numerical value representing the size of model's screen.
Quantity	Numerical value stating how much of an item is in stock
<b>Line_Item</b>	Title of table
Quantity	Numerical value stating how much of an item is in stock
<u>Vendor</u>	The name of a computer manufacturer/distributor.
<u>Model</u>	A string representing the make identification of vendor's computer

<u>Order Id</u>	The order identification for a requested list of items.
branch_id(online database only)	Contains the branch_id of where the laptops are being sourced from
line_total	Total cost for this line_item

<b>Online_Purchases</b>	Title of table
<u>OrderID</u>	The order identification for a requested list of items.
Tracking No.	Tracking number. Used to identify the state of delivery for a specific order.
Date	Date of Purchase
<b>Store_Purchases</b>	Title of table
<u>OrderID</u>	The order identification for a requested list of items.
Date	Date of Purchase