MIS 2101/2901 EXAM 1 REVIEW SESSION

Michelle Purnama
Diamond Peer
michelle.purnama@temple.edu

EXAM FORMAT

25 Multiple Choice Questions

- First 5 from assigned readings
- Next 10 from assigned videos & lectures
- Next 10 from Mini Case

Topics:

Intro to MIS, Systems Analysis, Swimlane, ERD, Business Rules, Decision Trees, Conceptual Architecture Diagram

Reminder:

Bring a #2 pencil and highlighters!

1.

Introduction to MIS

What is MIS

- Discipline of professionals who understand, develop, and leverage IT in an organization
- Use technology to solve day-to-day business problems
- Ties business functions together & uses technology to make them work

Accounting

Finance

Sales

Human Resources

Production

Information Systems, Computer Science, Information Technology

IS	CS	IT
• Use information that systems provide to define and achieve goals • Implement and improve business processes using IT • Bridge between technical and management communities • Found in business schools	• Ranges from theory, to programming, to new development of solutions • Design/build new software, design ways to solve computing problems, devise new ways of using computers • Spawned other majors/career paths such as IT	• Term refers to all computing • Undergraduate degree: prepares students to meet computer needs of organizations • Knowledge and hands-on expertise to take care of organization's IT infrastructure

BIG CONCEPT

MIS is **solution-driven!**

it focuses on solving **business** problems
by leveraging **technology**

2.1

Analyzing Organizations as Systems and Processes

Systems

- Mix of people, process, technology
- Manipulate info to create value
- MIS professionals create, manage, and implement these “Systems”
- Can be simple or complex
  - Simple - don’t use much technology
  - Complex - use lots of technology

Hamilton Beach

Hamilton Beach 22623 Cool Wall 2-Slice Toaster, Red

431 customer reviews | 19 answered questions

Price: $44.98 & FREE Shipping

Note: Not eligible for Amazon Prime.

Only 2 left in stock.

Get it as soon as Jan. 31 - Feb. 3 when you choose **Standard** at checkout.

Ships from and sold by Max.Store in easy-to-open packaging.

Systems Analysis

- Problem solving technique
- Decomposes a system into component pieces to study how well those parts work & interact to accomplish a business goal
- Analyze business processes that need to be supported by a given system

Systems Architecture

- Conceptual model
- Formal representation of system & components and their interactions
- Provides a plan form which solutions to business problems can be developed

BIG CONCEPT

Systems Analysis → Systems Architecture:

Once systems analysts **understand** the business problem, they **architect** a solution

2.1.1
Process Modeling with Swimlane Diagrams

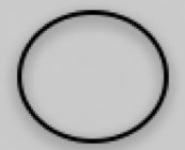
Process Mapping

- Visual representation of processes
- Exercise to identify **ALL** steps & decisions in a process
- Draw **AS IS,** not what we prefer to be
- Purposes:
  - Get everyone on the same page!
  - Change without full understanding = costly mistakes, further problems
  - Measure efficiency & identify problem areas (bottlenecks, hands off)
- Basis for developing solutions

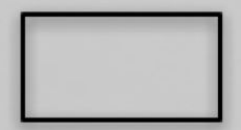
Swimlane Diagram

- Process flow diagram with divisions or “lanes”
  - Horizontal / Vertical
  - Each lane represents an **actor** responsible for processes & decisions described in their lane
  - Actor: individual, department, division, group, machine, entity
- Sequential
- Answer questions like:
  - Who does what and when?
  - How?
  - What happens before/after?

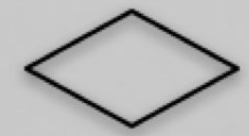
Swimlane Diagram



A circle signifies the **start**ing and **end**ing of an event in the process



A rectangle represents an **activity** in the process.

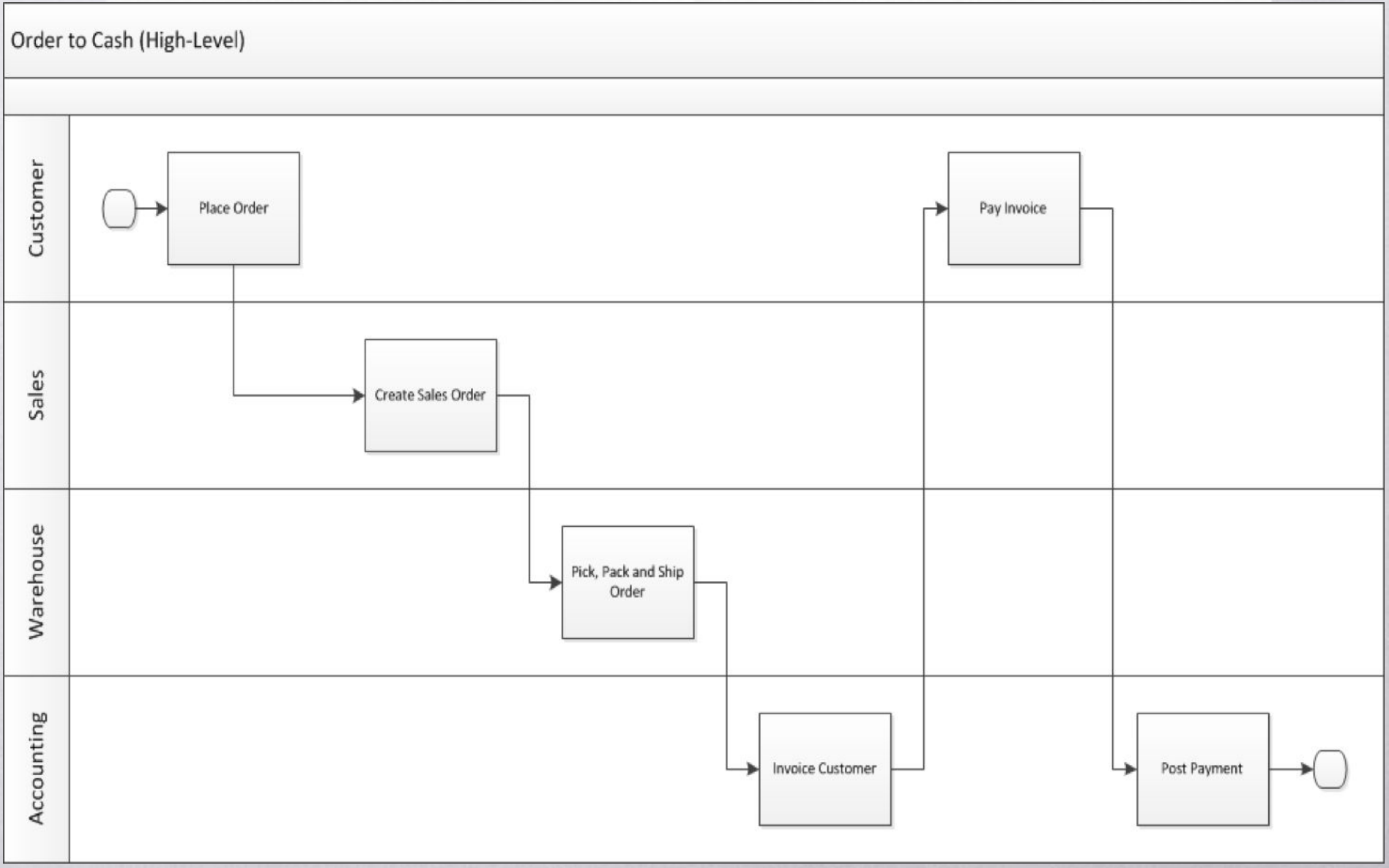


A diamond represents a **decision** that must be made.

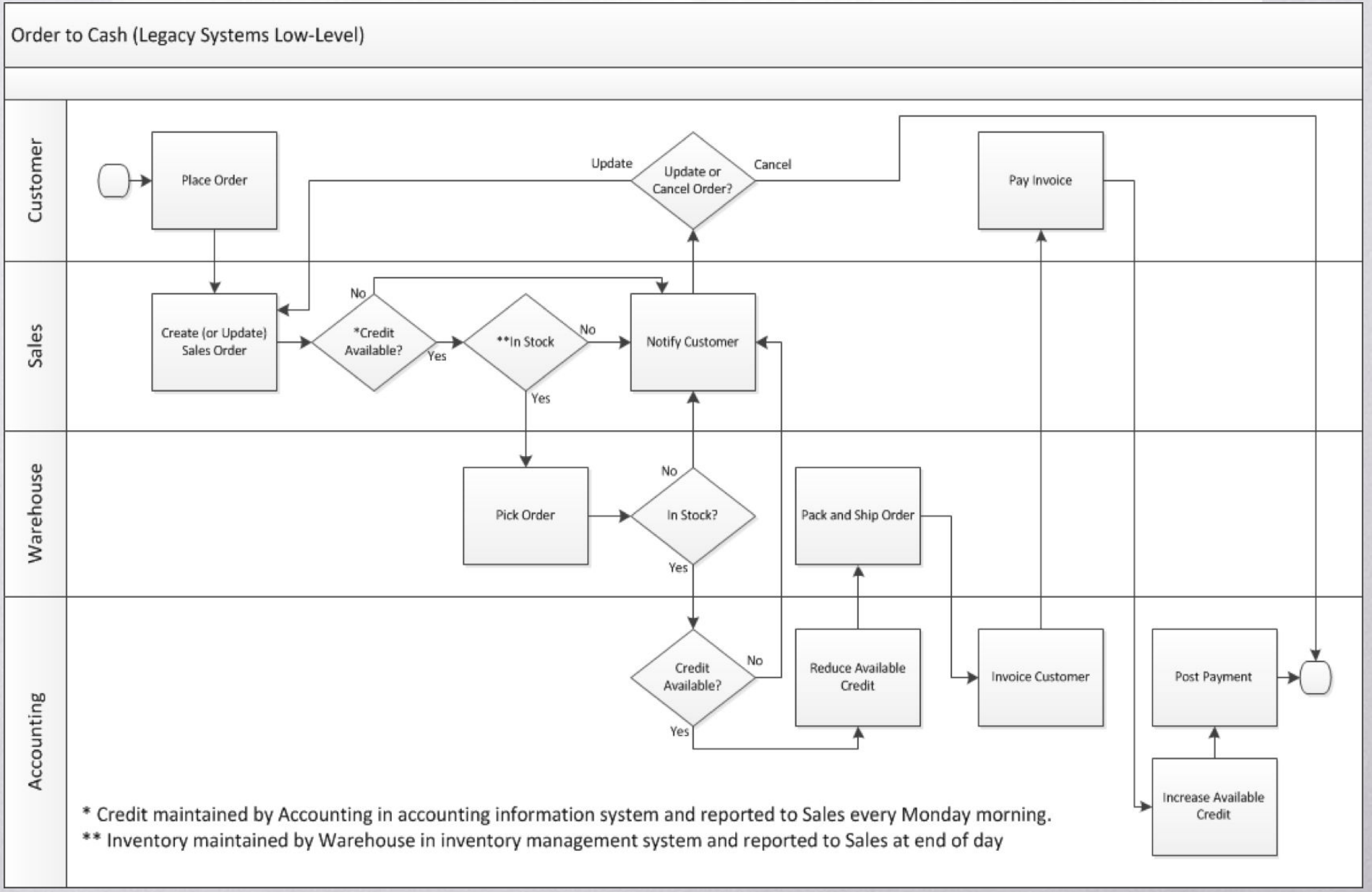
Arrows indicate the **flow** of the process.

A cylinder represents **stored data.**

Who does what and when?



LOW-LEVEL Diagram



BIG CONCEPT

Swimlane Diagram is a **communication** tool to improve systems by modeling **current processes**

2.1.2

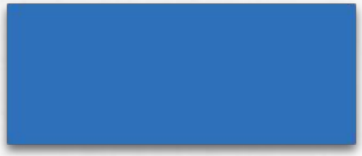
Data Modeling with ERD

Entity Relationship Diagrams

- Visual representation of different **data** and describing how these data relate to each other
- Supplement swimlane diagram
  - Business processes require information to perform them!

Primary ERD Symbols

CHEN's Database Notation



- Entity = Noun
  - ex. shopper, item

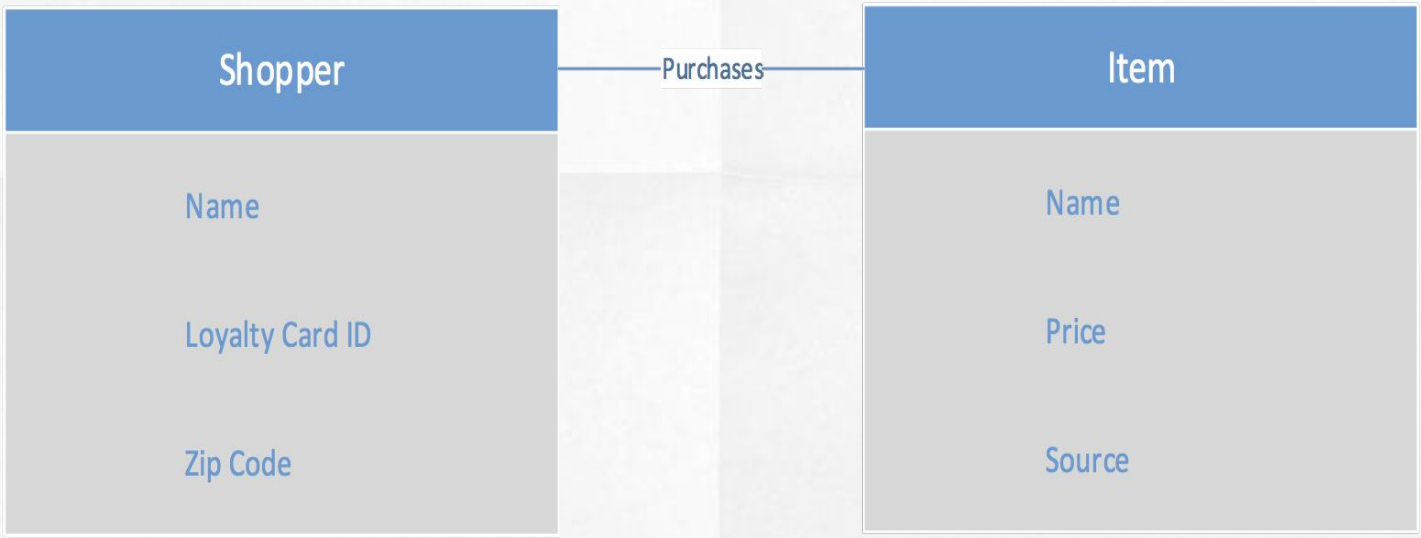
- Attribute = Characteristic
  - ex. Item price

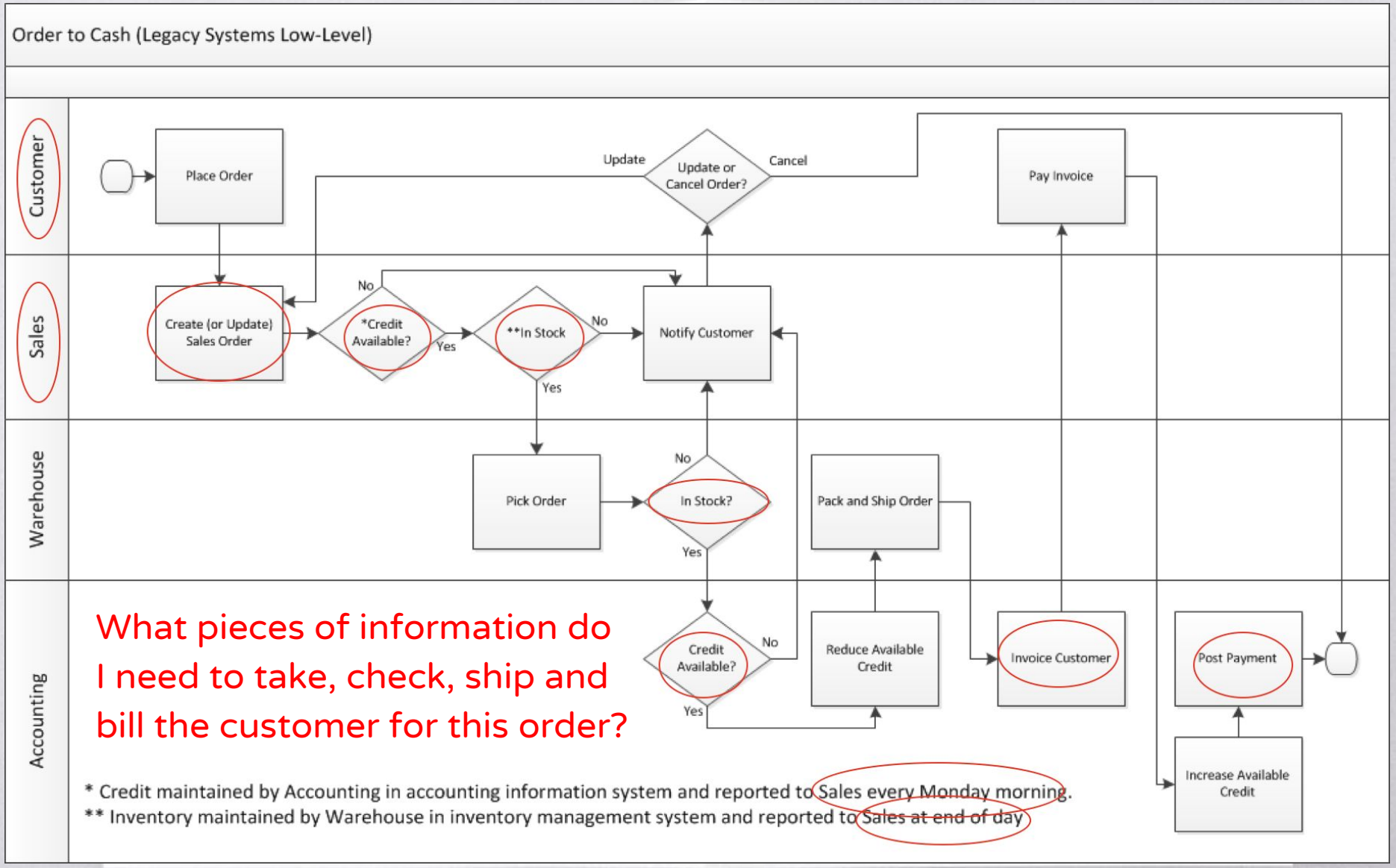
- Relationship = Verb
  - ex. buys

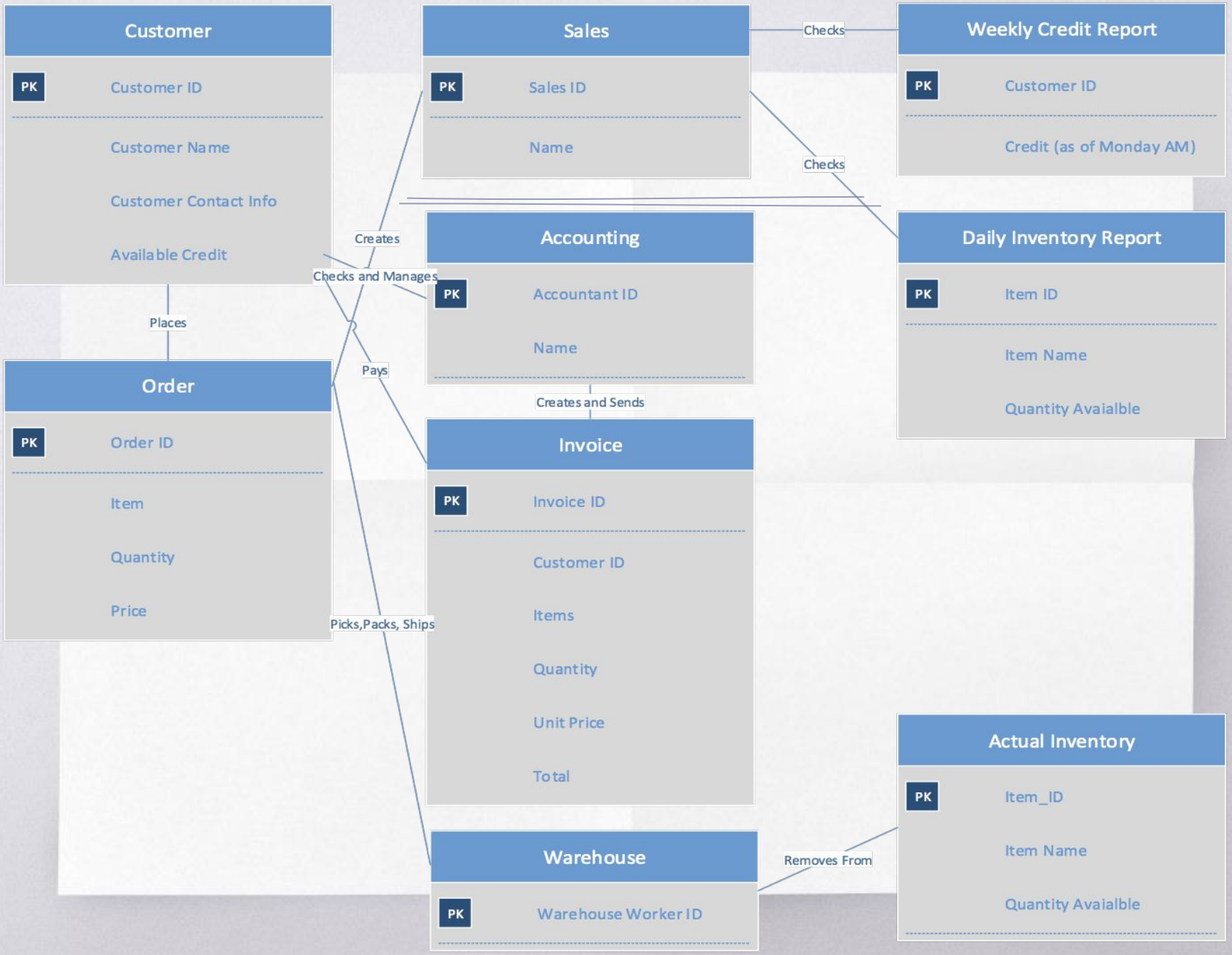
Primary ERD Symbols

CROW'S FOOT Database Notation

(aka what we use in this class!)




Order to Cash (Legacy Systems Low-Level)
Customer
Sales
Warehouse
Accounting
Place Order
Update
Update or Cancel Order?
Cancel
Pay Invoice
Create (or Update) Sales Order
No
*Credit Available?
Yes
**In Stock
No
Yes
Notify Customer
Pick Order
No
In Stock?
Yes
Pack and Ship Order
Credit Available?
No
Yes
Reduce Available Credit
Invoice Customer
Post Payment
Increase Available Credit
What pieces of information do I need to take, check, ship and bill the customer for this order?
* Credit maintained by Accounting in accounting information system and reported to Sales every Monday morning.
** Inventory maintained by Warehouse in inventory management system and reported to Sales at end of day


Customer
PK
Customer ID
Customer Name
Customer Contact Info
Available Credit
Sales
PK
Sales ID
Name
Weekly Credit Report
PK
Customer ID
Credit (as of Monday AM)
Checks
Checks
Creates
Checks and Manages
Accounting
PK
Accountant ID
Name
Daily Inventory Report
PK
Item ID
Item Name
Quantity Avaialble
Places
Pays
Creates and Sends
Order
PK
Order ID
Item
Quantity
Price
Invoice
PK
Invoice ID
Customer ID
Items
Quantity
Unit Price
Total
Picks,Packs, Ships
Warehouse
PK
Warehouse Worker ID
Removes From
Actual Inventory
PK
Item_ID
Item Name
Quantity Avaialble

BIG CONCEPT

After mapping a process using swimlane, we use ERD to model the **data** required to perform it

2.1.3

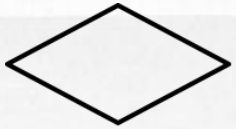
Modeling Business Rules with Decision Trees

Business Rules

- Rules organization follows when operating a business
- Defines or constraints some aspects of business operations
- Implemented within business processes

Decision Trees

- Model business rules
- Help with complex/detailed logic in process flows
- Help see necessary level of detail
- Trees help recognize if branch is missing



Condition (decision point)

Possible values

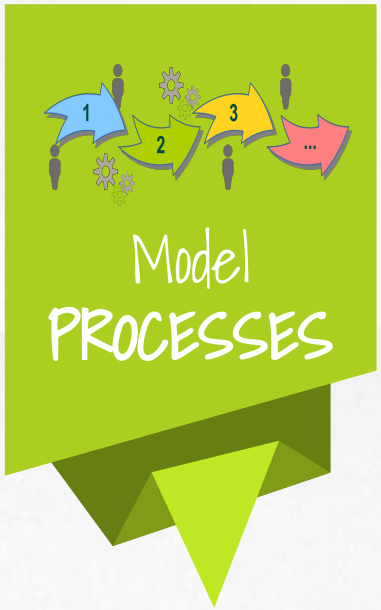
Actions (outcomes)

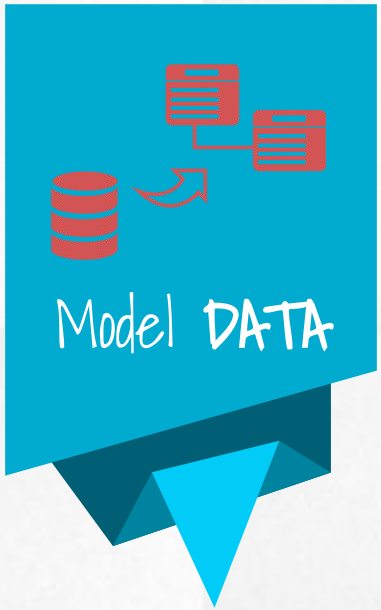
BIG CONCEPT

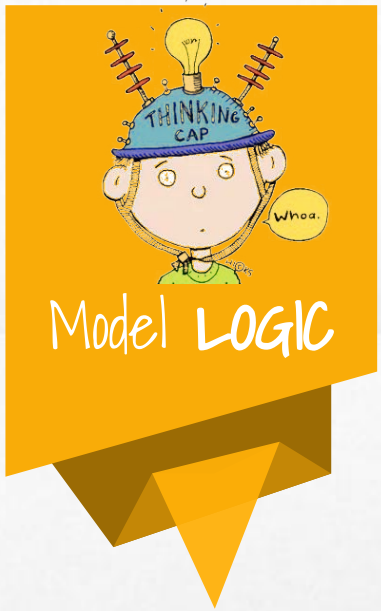
Decision trees are **logical:**
they model complex logic in process flows


Bringing all of
them together..

Swimlane, ERD, Decision Trees





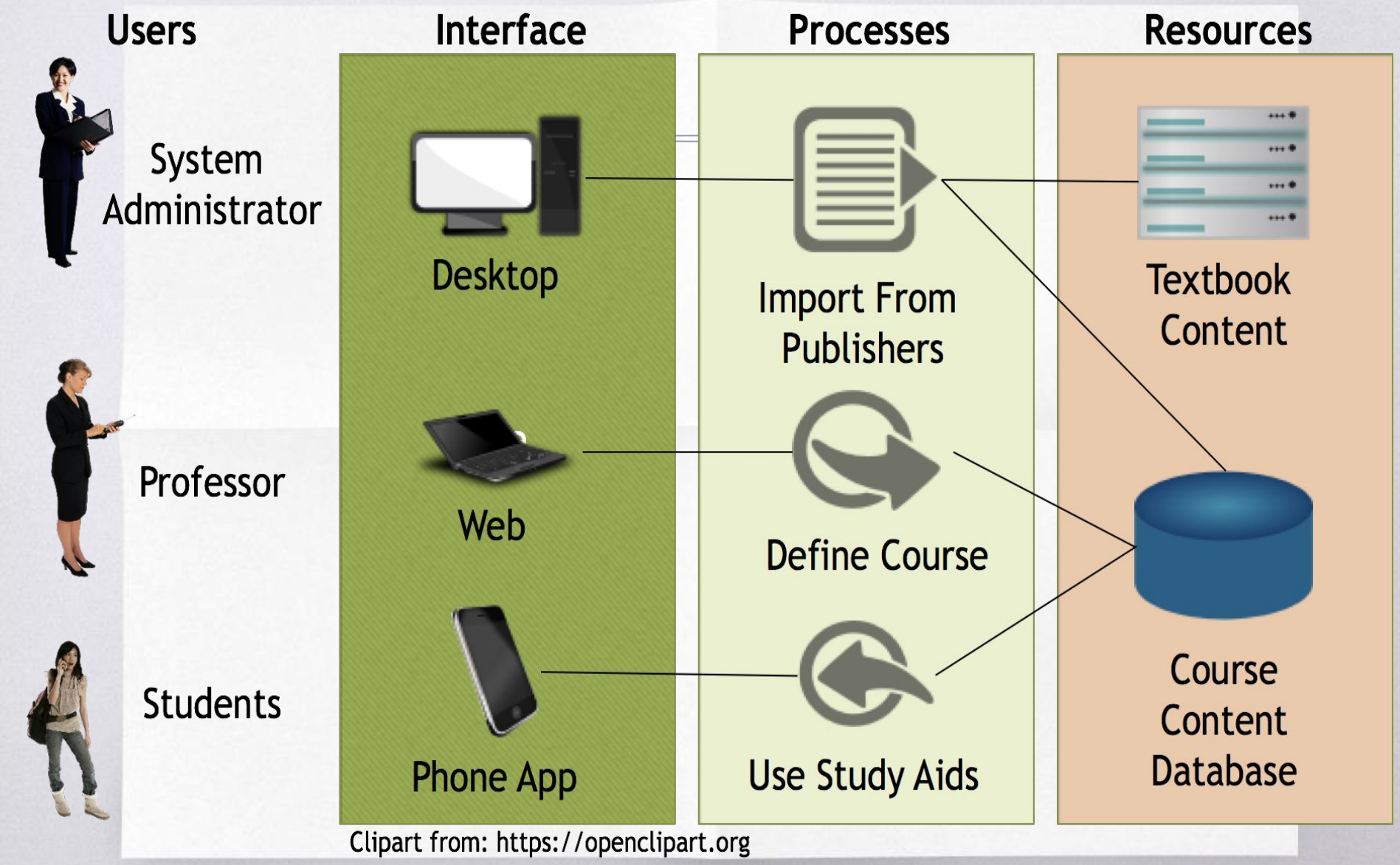


They are all **COMMUNICATION** tools utilized by MIS professionals to **MODEL** a system

2.1.4
Conceptual Architecture Diagramming

Conceptual Architecture Diagrams

- A **high-level diagram** communicating how a system works
- Flexible, marketable, all stakeholders
  - Marketing view - attention-grabbing
  - Lightweight - quickly draft to introduce design to stakeholders
  - Formal enough to guide architect in designing
- Guidelines:
  - Assume audience knows nothing
  - Big picture accuracy
  - Target to need



Clipart from: https://openclipart.org

BIG CONCEPT

Conceptual Diagramming is a process of **reducing a lot of text to images**.

We learn better with images!

Moving on..

Any Questions?

Email:
michelle.purnama@temple.edu

Office Hours:

- Monday 3:00-4:00pm
- Friday 9:00-10:00am
- Alter 602