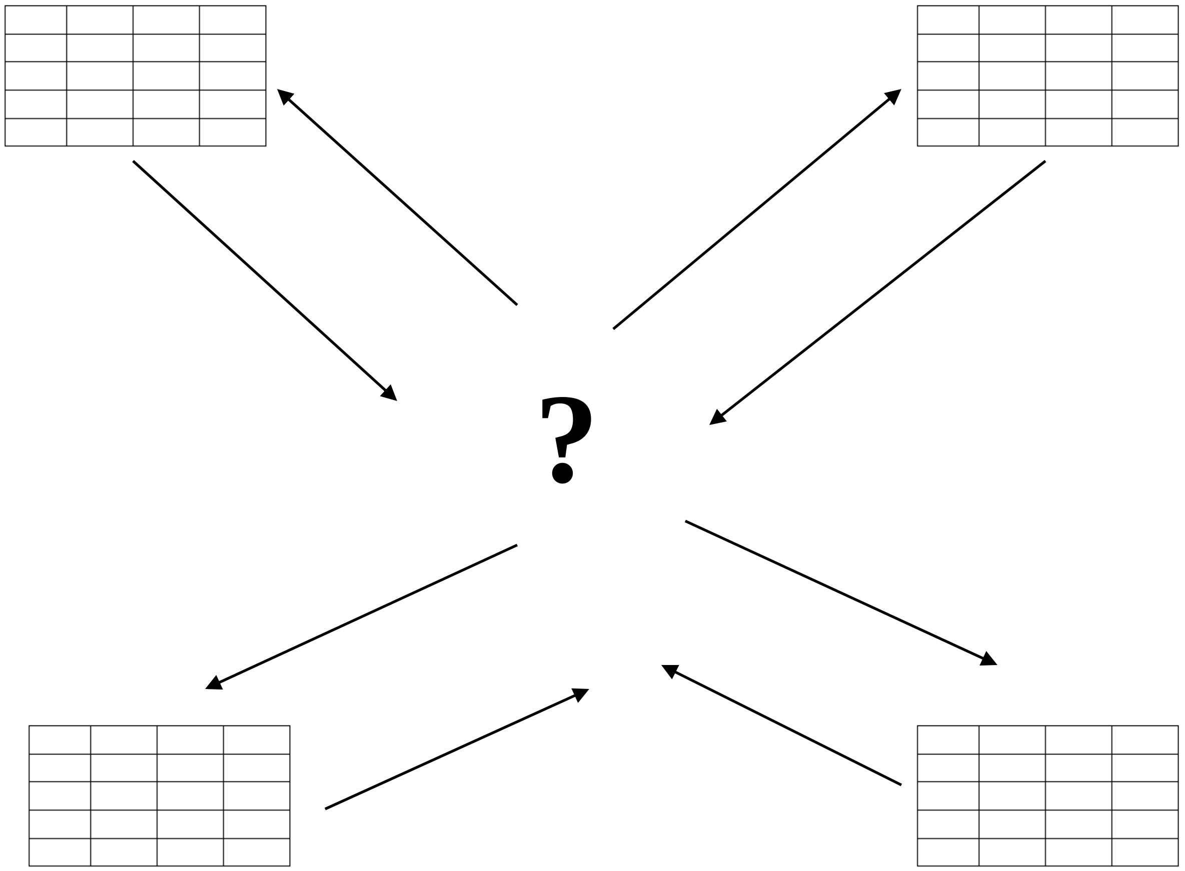
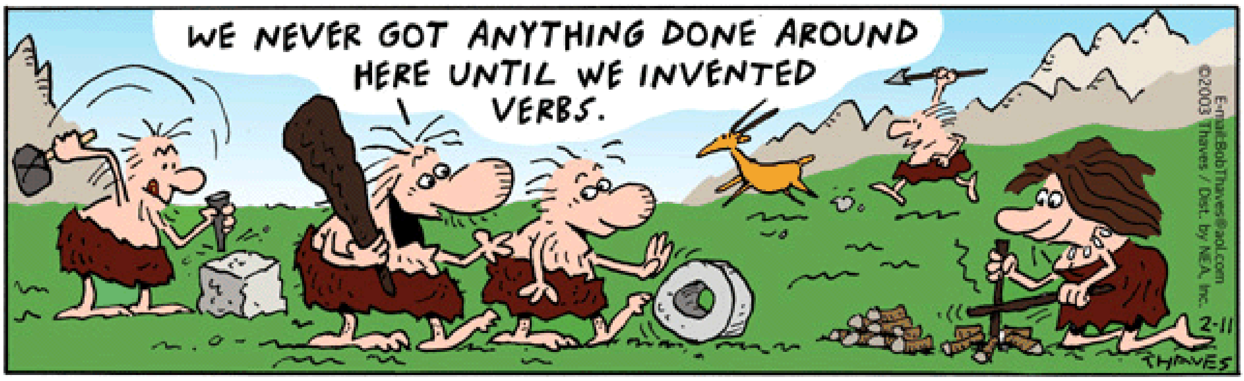
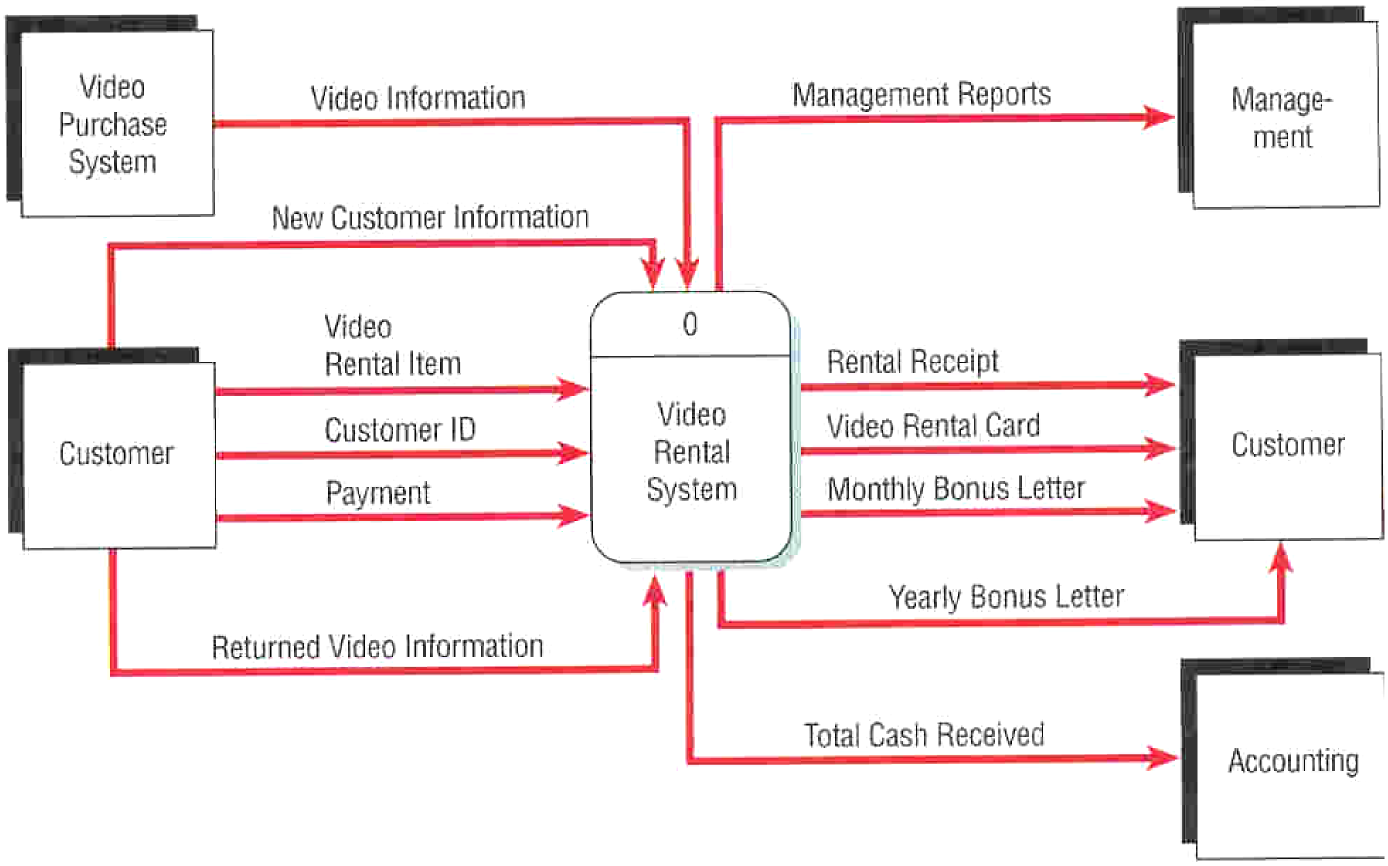
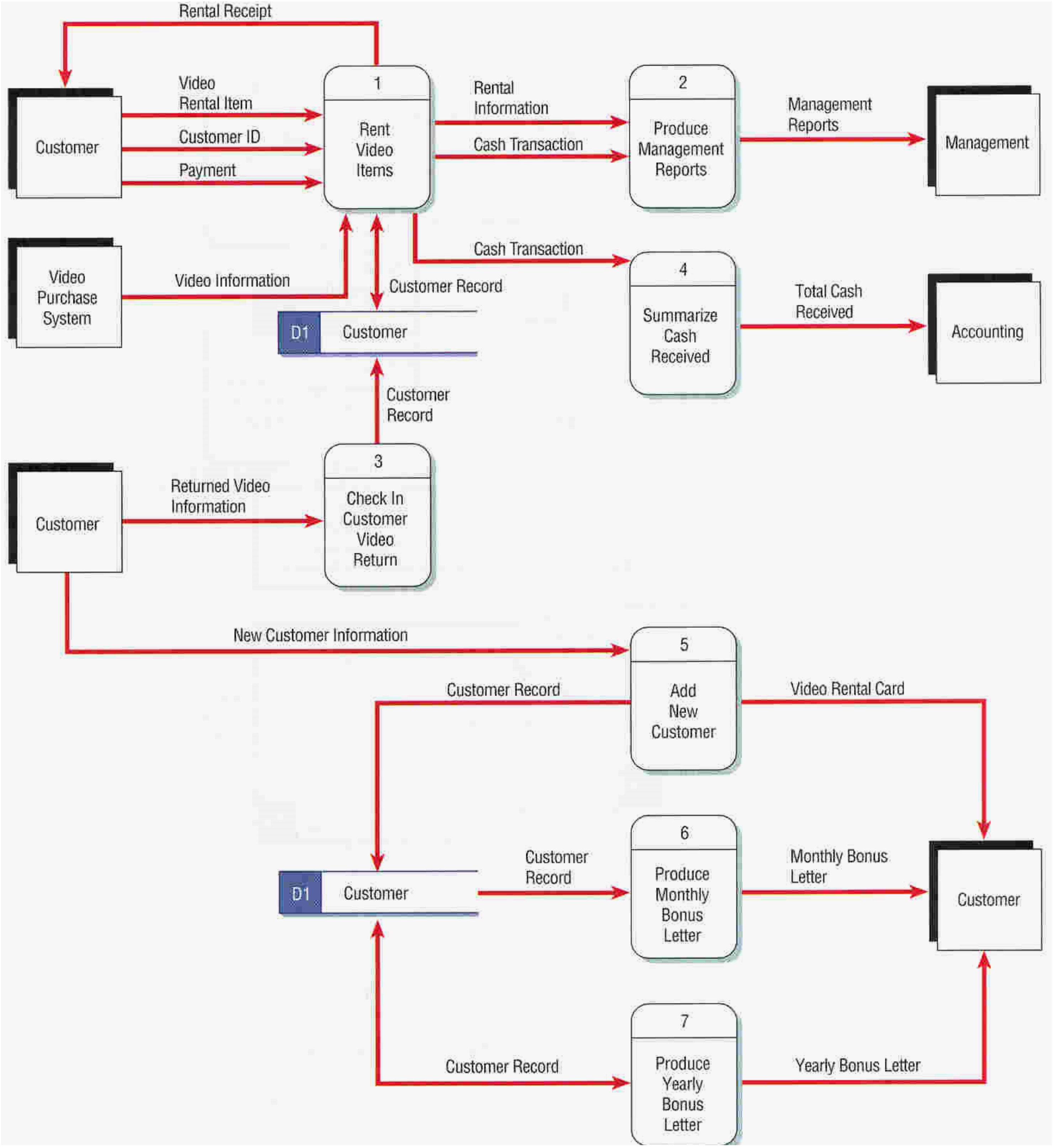

?


WE NEVER GOT ANYTHING DONE AROUND HERE UNTIL WE INVENTED VERBS.
E-mail:BobThaves@aol.com
©2003 Thaves / Dist. by NEA, Inc.
2-11
THAVES

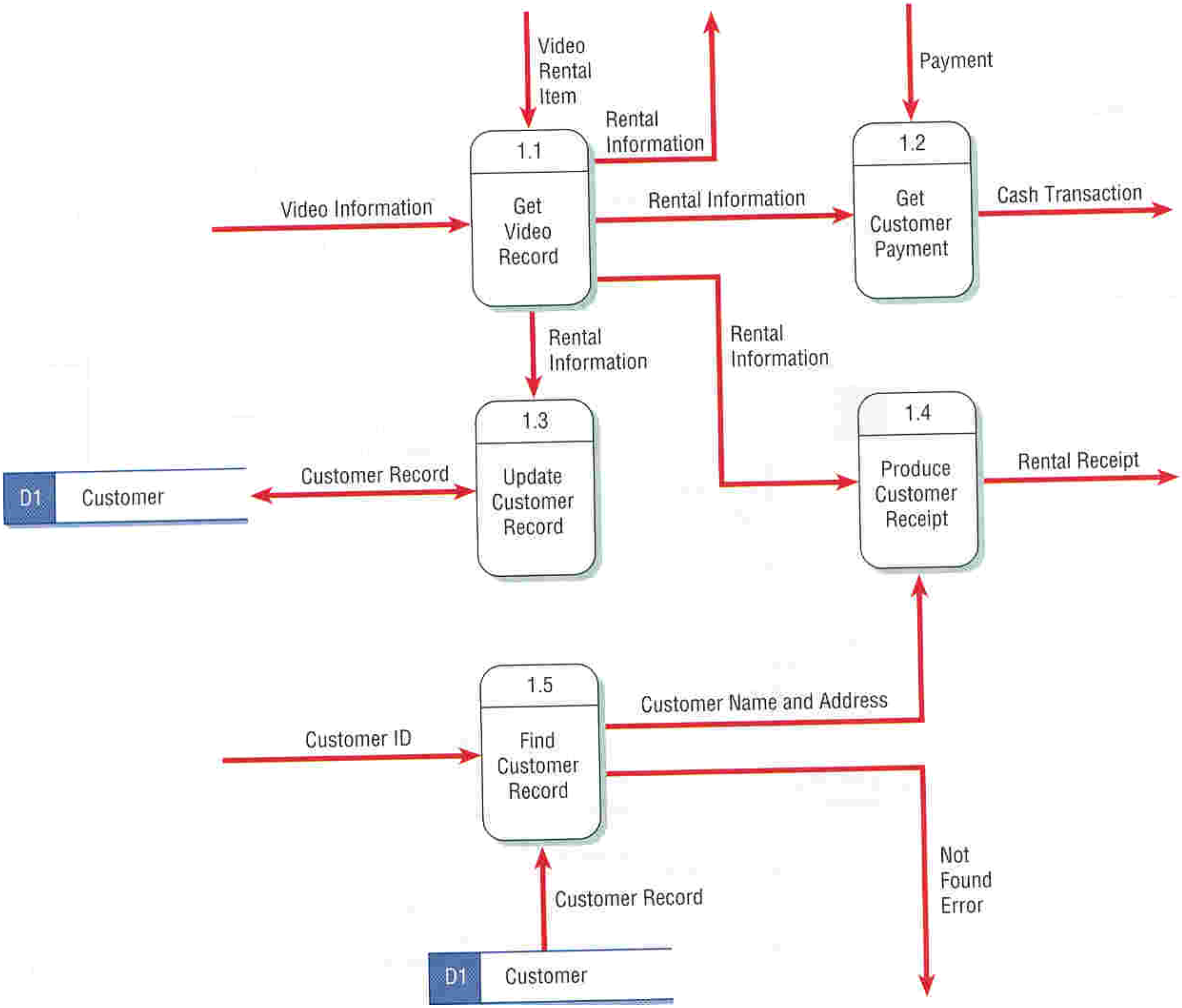
Context Diagram



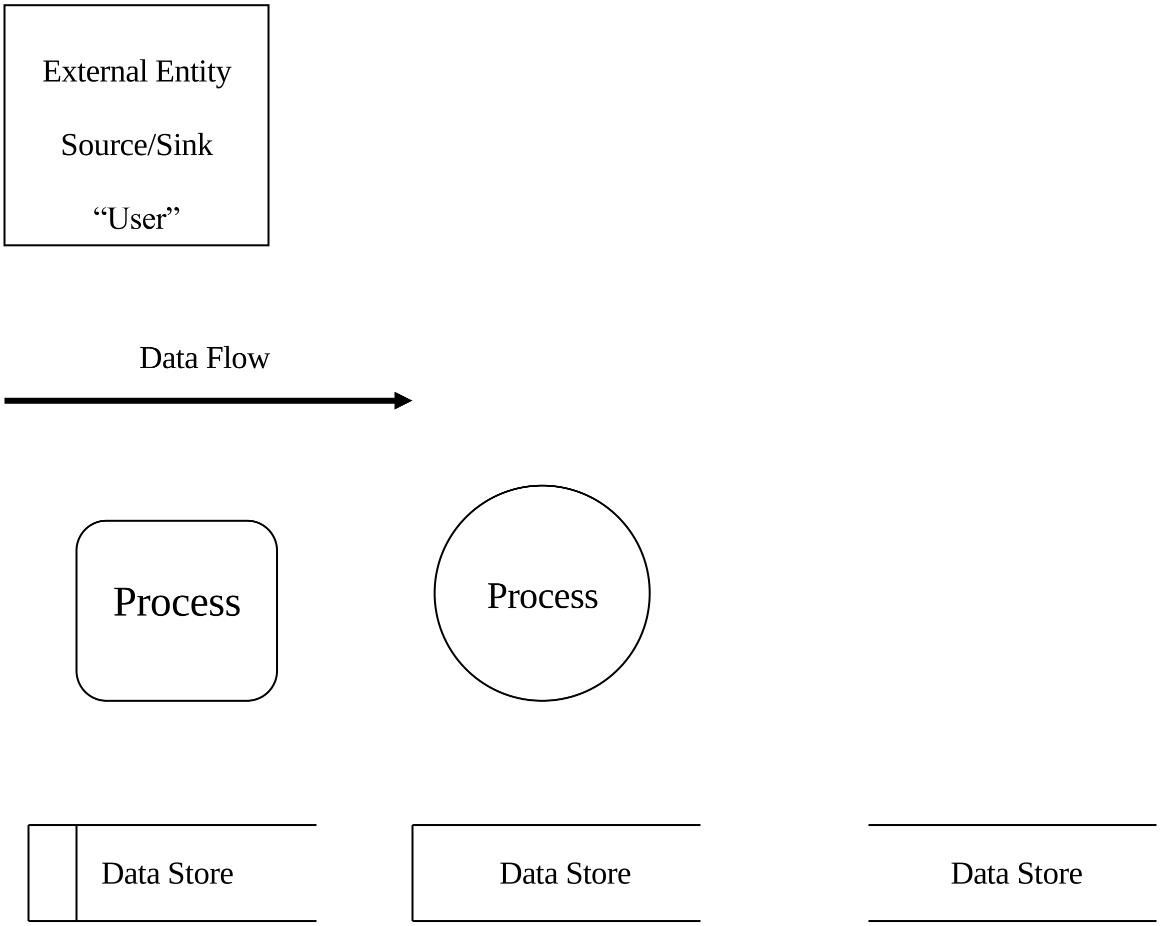
Level 1 Diagram



Level 2 Diagram



DFD Symbols



Rule for naming a process: *The “Joe Test”*
A process must be named in such a way that it can complete the following sentence correctly.
When we hired Joe, we told him: ***“Joe, your job is to ______________”***.

Example: “calculate net pay” is correct phrasing because it can correctly complete the above statement.

The following are NOT grammatically correct phrasings:

- calculating net pay
- net pay calculation
- calculates net pay

DFD Concepts

Leveling/Exploding:

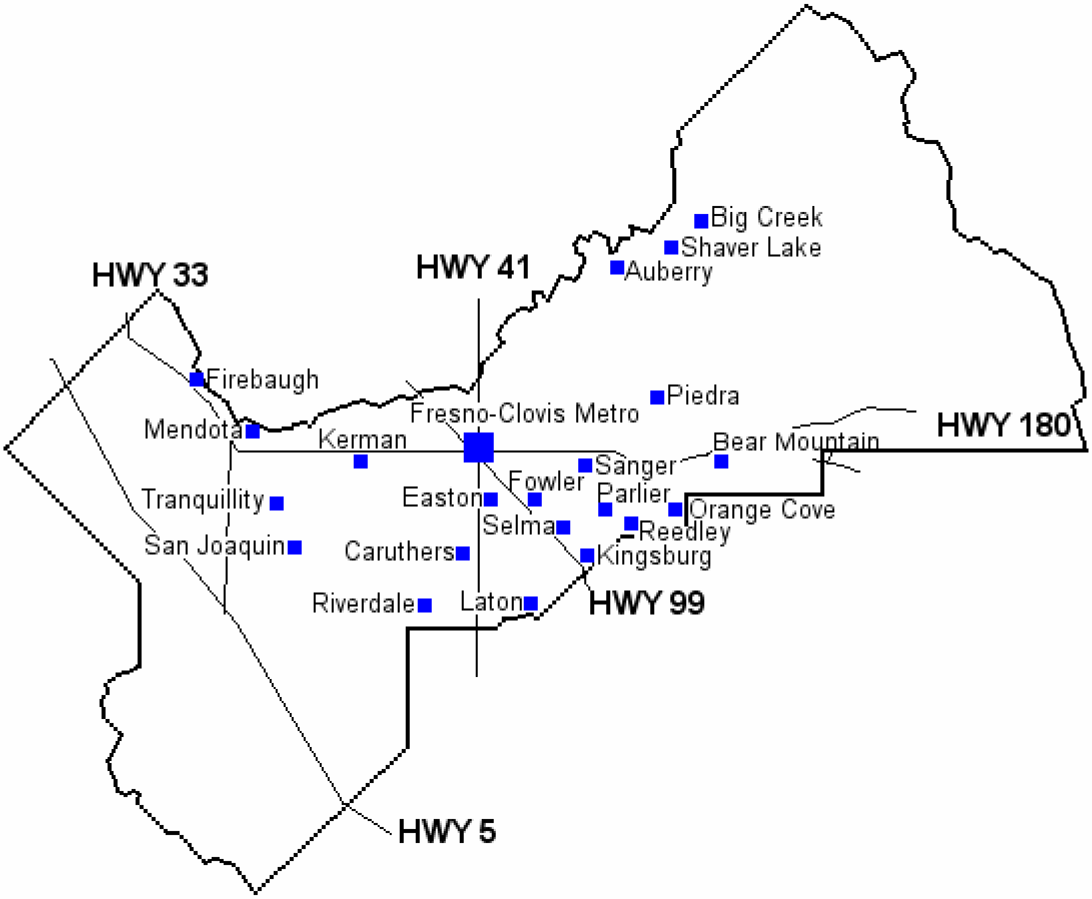
Showing the details of a higher-level process in a lower-level diagram

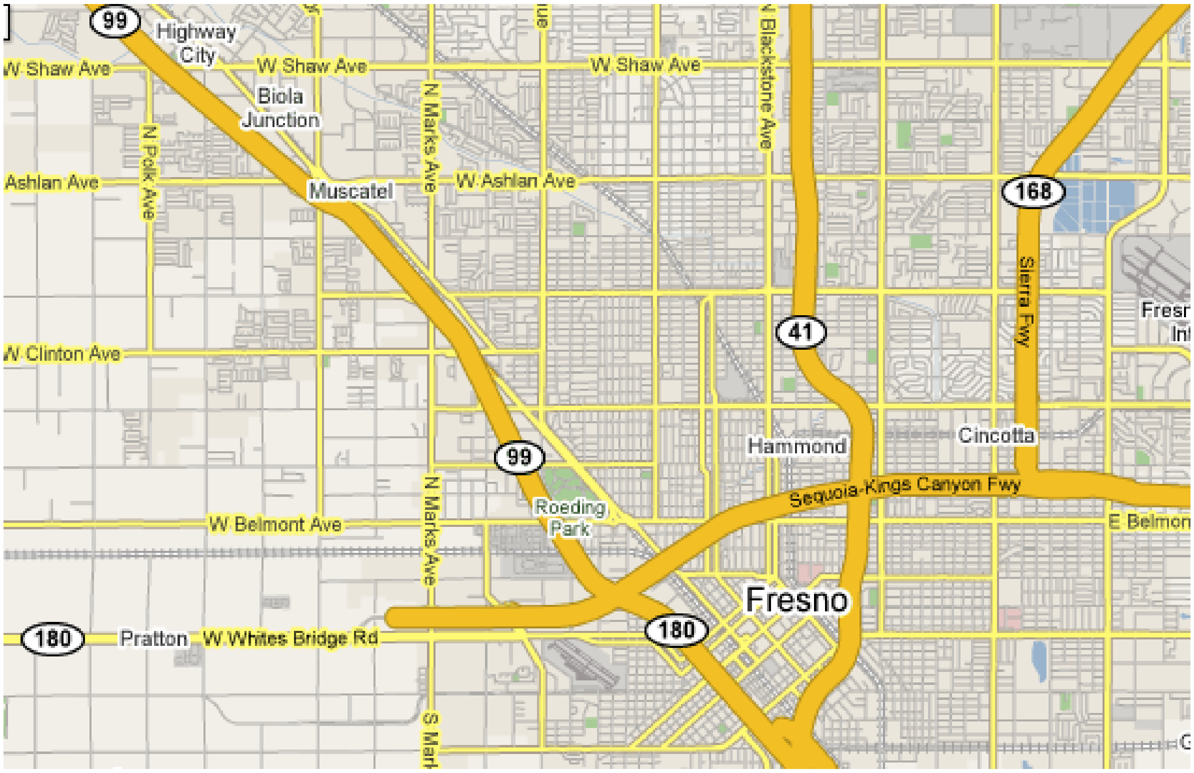
Balancing:

Consistency between diagrams on two levels in terms of input/output

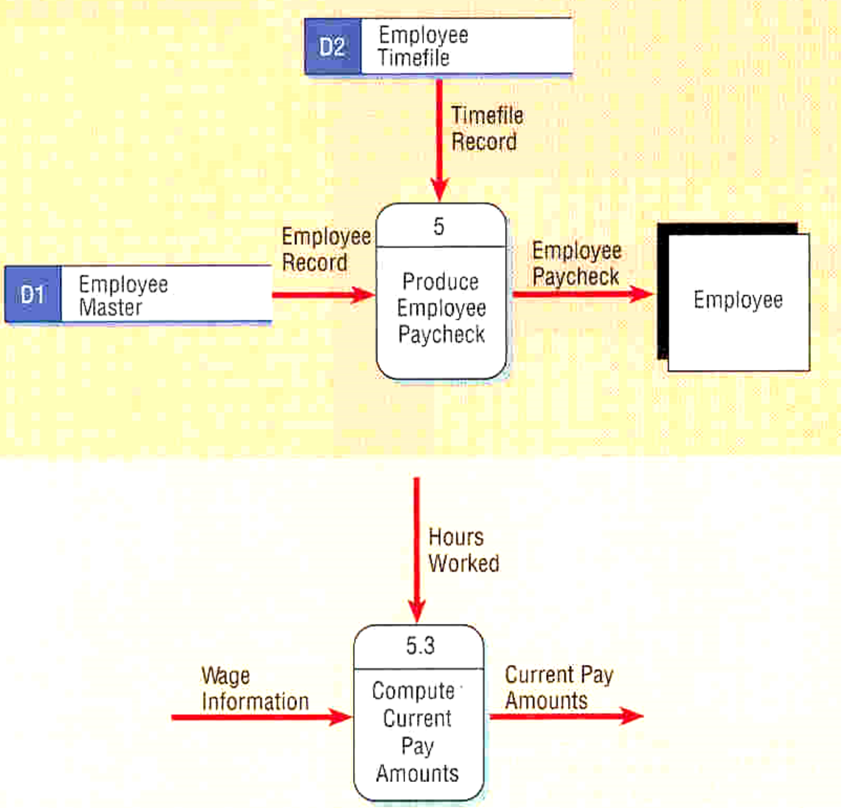
- Each higher input is shown on the lower diagram
- Each higher output is shown on the lower diagram
- Each lower input is shown on the higher diagram
- Each lower output is shown on the higher diagram

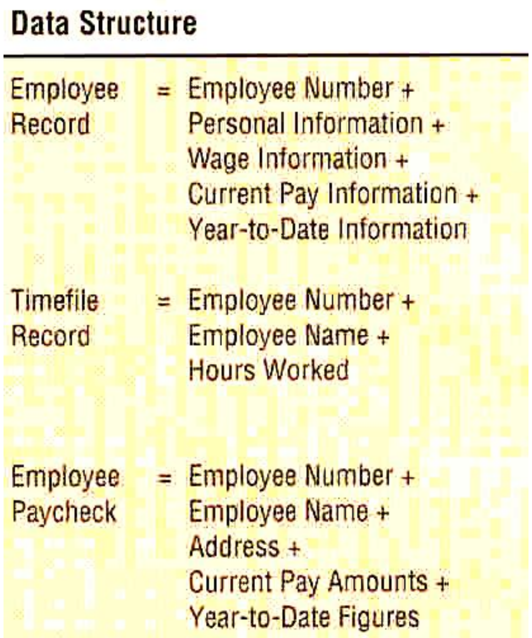
Fresno County, California


HWY 33
HWY 41
HWY 180
HWY 99
HWY 5
Big Creek
Shaver Lake
Auberry
Firebaugh
Piedra
Fresno-Clovis Metro
Mendota
Kerman
Bear Mountain
Sanger
Fowler
Parlier
Tranquillity
Easton
Orange Cove
Selma
Reedley
San Joaquin
Caruthers
Kingsburg
Riverdale
Laton


99
Highway City
W Shaw Ave
W Shaw Ave
W Shaw Ave
Biola Junction
N Polk Ave
N Marks Ave
Ashlan Ave
Muscatel
W Ashlan Ave
N Blackstone Ave
168
Sierra Fwy
Fresn
Int
41
W Clinton Ave
Hammond
Cincotta
99
Sequoia-Kings Canyon Fwy
Roeding Park
W Belmont Ave
N Marks Ave
E Belmon
Fresno
180
Pratton
W Whites Bridge Rd
180
S Mark

Data Dictionary Keyed to Data Flow Diagram



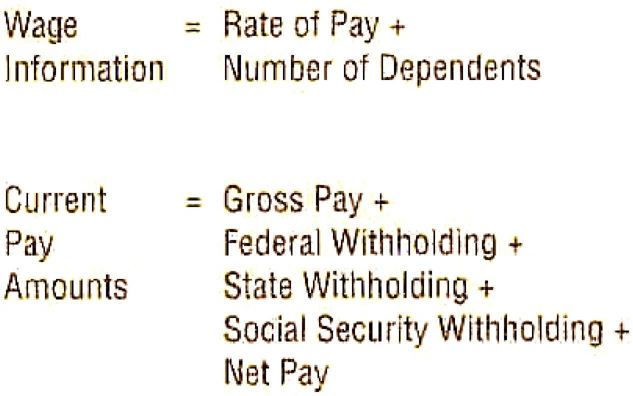


Data Structure

Employee Record = Employee Number +
Personal Information +
Wage Information +
Current Pay Information +
Year-to-Date Information

Timefile Record = Employee Number +
Employee Name +
Hours Worked

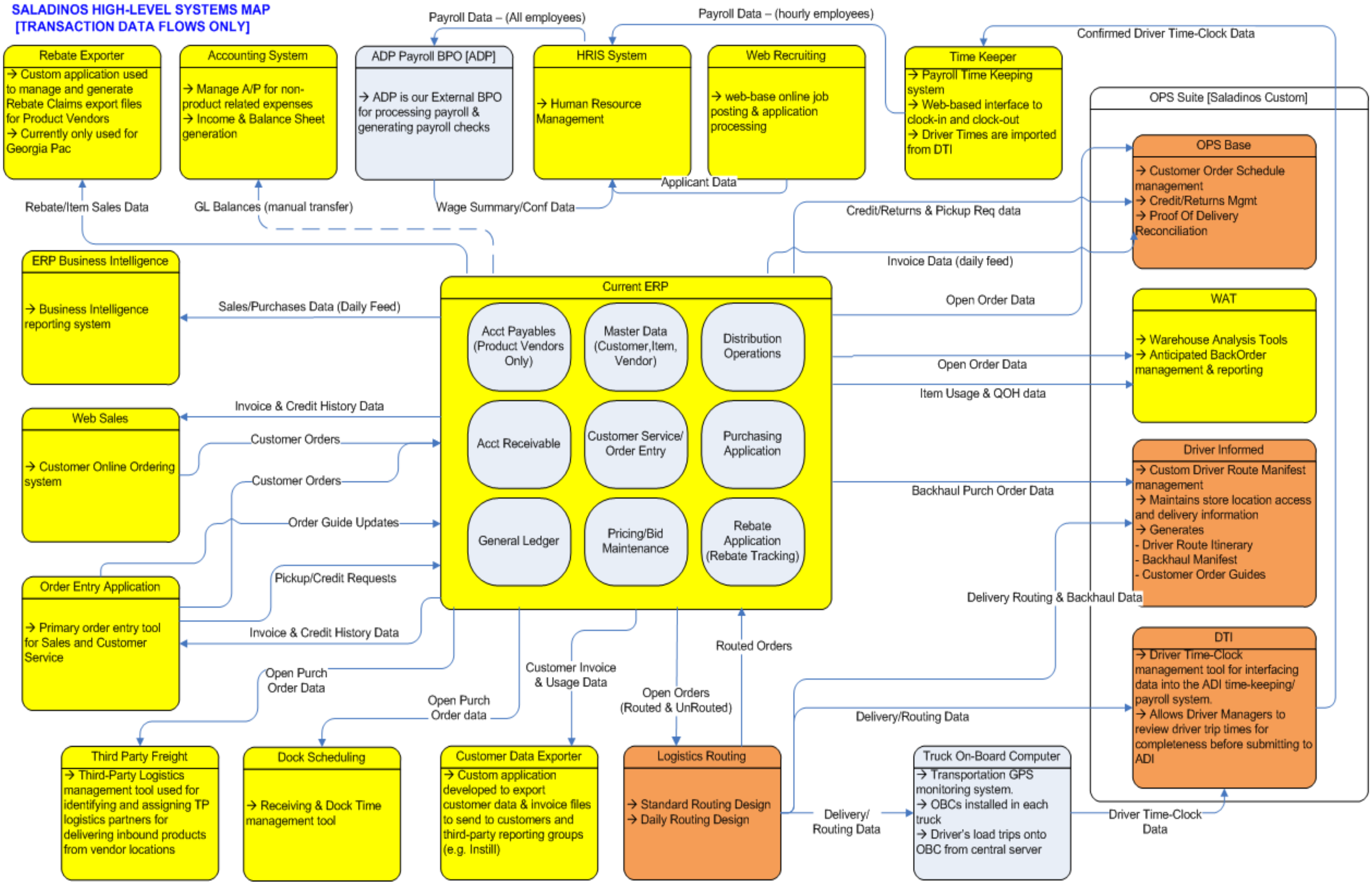
Employee Paycheck = Employee Number +
Employee Name +
Address +
Current Pay Amounts +
Year-to-Date Figures



Wage Information = Rate of Pay +
Number of Dependents

Current Pay Amounts = Gross Pay +
Federal Withholding +
State Withholding +
Social Security Withholding +
Net Pay

Retirement Systems Landscape
Saladino's



SALADINOS HIGH-LEVEL SYSTEMS MAP
[TRANSACTION DATA FLOWS ONLY]

Rebate Exporter
→ Custom application used to manage and generate Rebate Claims export files for Product Vendors
→ Currently only used for Georgia Pac

Accounting System
→ Manage A/P for non-product related expenses
→ Income & Balance Sheet generation

ADP Payroll BPO [ADP]
→ ADP is our External BPO for processing payroll & generating payroll checks

HRIS System
→ Human Resource Management

Web Recruiting
→ web-base online job posting & application processing

Time Keeper
→ Payroll Time Keeping system
→ Web-based interface to clock-in and clock-out
→ Driver Times are imported from DTI

OPS Suite [Saladinos Custom]

OPS Base
→ Customer Order Schedule management
→ Credit/Returns Mgmt
→ Proof Of Delivery Reconciliation

WAT
→ Warehouse Analysis Tools
→ Anticipated BackOrder management & reporting

Driver Informed
→ Custom Driver Route Manifest management
→ Maintains store location access and delivery information
→ Generates
- Driver Route Itinerary
- Backhaul Manifest
- Customer Order Guides

DTI
→ Driver Time-Clock management tool for interfacing data into the ADI time-keeping/ payroll system.
→ Allows Driver Managers to review driver trip times for completeness before submitting to ADI

ERP Business Intelligence
→ Business Intelligence reporting system

Web Sales
→ Customer Online Ordering system

Order Entry Application
→ Primary order entry tool for Sales and Customer Service

Current ERP
- Acct Payables (Product Vendors Only)
- Master Data (Customer,Item, Vendor)
- Distribution Operations
- Acct Receivable
- Customer Service/ Order Entry
- Purchasing Application
- General Ledger
- Pricing/Bid Maintenance
- Rebate Application (Rebate Tracking)

Third Party Freight
→ Third-Party Logistics management tool used for identifying and assigning TP logistics partners for delivering inbound products from vendor locations

Dock Scheduling
→ Receiving & Dock Time management tool

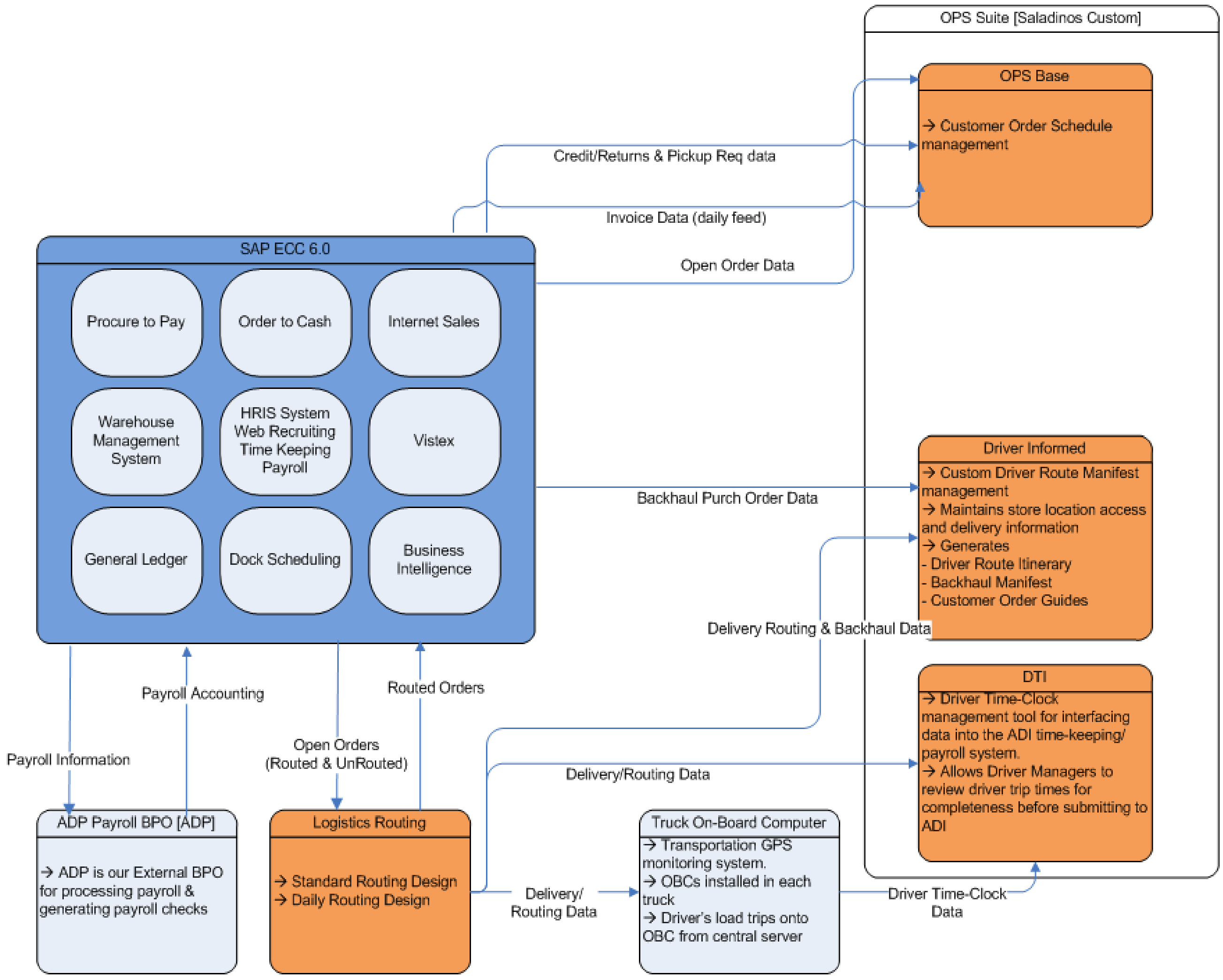
Customer Data Exporter
→ Custom application developed to export customer data & invoice files to send to customers and third-party reporting groups (e.g. Instill)

Logistics Routing
→ Standard Routing Design
→ Daily Routing Design

Truck On-Board Computer
→ Transportation GPS monitoring system.
→ OBCs installed in each truck
→ Driver's load trips onto OBC from central server

Payroll Data – (All employees)
Payroll Data – (hourly employees)
Confirmed Driver Time-Clock Data
Applicant Data
Rebate/Item Sales Data
GL Balances (manual transfer)
Wage Summary/Conf Data
Credit/Returns & Pickup Req data
Invoice Data (daily feed)
Sales/Purchases Data (Daily Feed)
Open Order Data
Open Order Data
Item Usage & QOH data
Invoice & Credit History Data
Customer Orders
Customer Orders
Order Guide Updates
Pickup/Credit Requests
Backhaul Purch Order Data
Delivery Routing & Backhaul Data
Invoice & Credit History Data
Open Purch Order Data
Customer Invoice & Usage Data
Open Purch Order data
Open Orders (Routed & UnRouted)
Routed Orders
Delivery/Routing Data
Delivery/ Routing Data
Driver Time-Clock Data

Future Systems Landscape
Saladino’s



OPS Suite [Saladinos Custom]

OPS Base

→ Customer Order Schedule management

Driver Informed

→ Custom Driver Route Manifest management
→ Maintains store location access and delivery information
→ Generates
- Driver Route Itinerary
- Backhaul Manifest
- Customer Order Guides

DTI

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→ Allows Driver Managers to review driver trip times for completeness before submitting to ADI

SAP ECC 6.0

Procure to Pay

Order to Cash

Internet Sales

Warehouse Management System

HRIS System
Web Recruiting
Time Keeping
Payroll

Vistex

General Ledger

Dock Scheduling

Business Intelligence

ADP Payroll BPO [ADP]

→ ADP is our External BPO for processing payroll & generating payroll checks

Logistics Routing

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Permissible DFD Flows

	External Entity	Process	Data Store
External Entity			
Process			
Data Store			

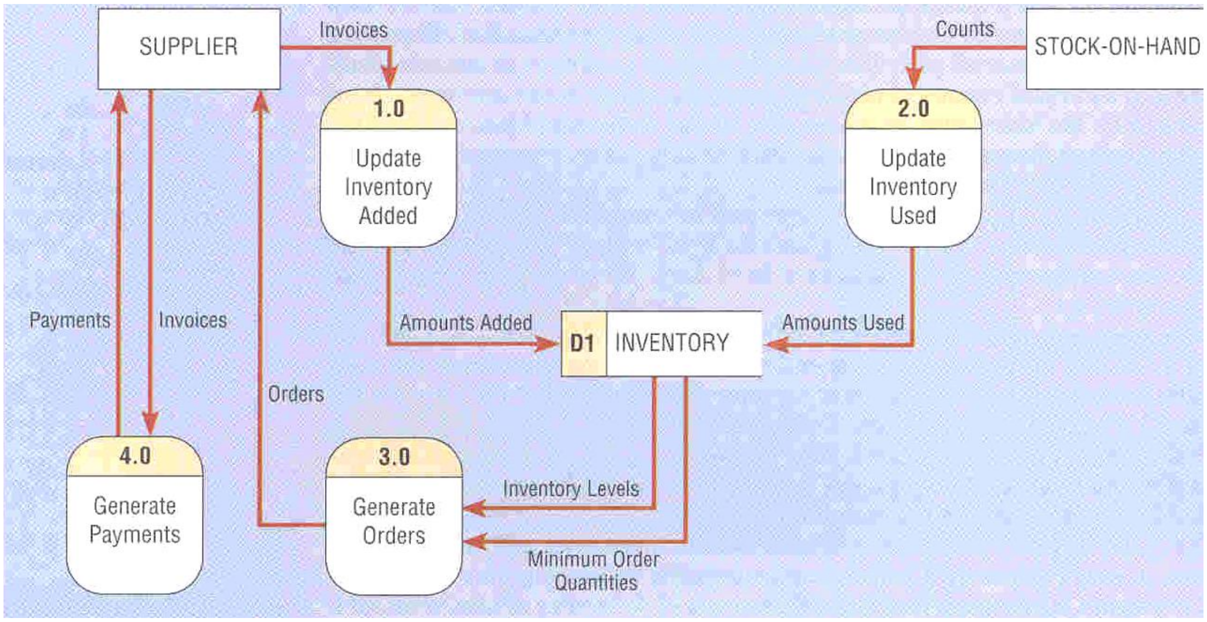
Permissible DFD Flows

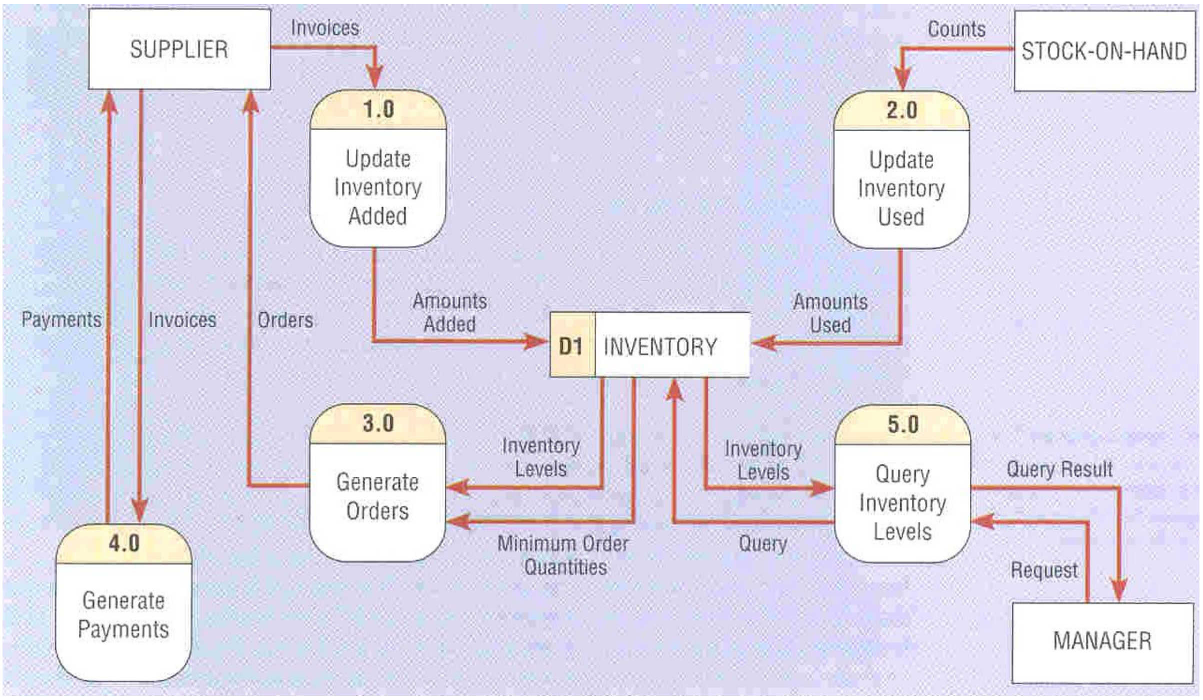
	External Entity	**Process**	**Data Store**
External Entity	✗	Input	✗
Process	Output	√ But not recommended	Update (Write)
Data Store	✗	Retrieve (Read)	✗

Data Flow Diagramming: From Existing to Required System

The 12 pure ways in which an existing DFD can be modified to yield the required one:

	External Entity	Process	Data Store	Data Flow
Add				
Change				
Delete				





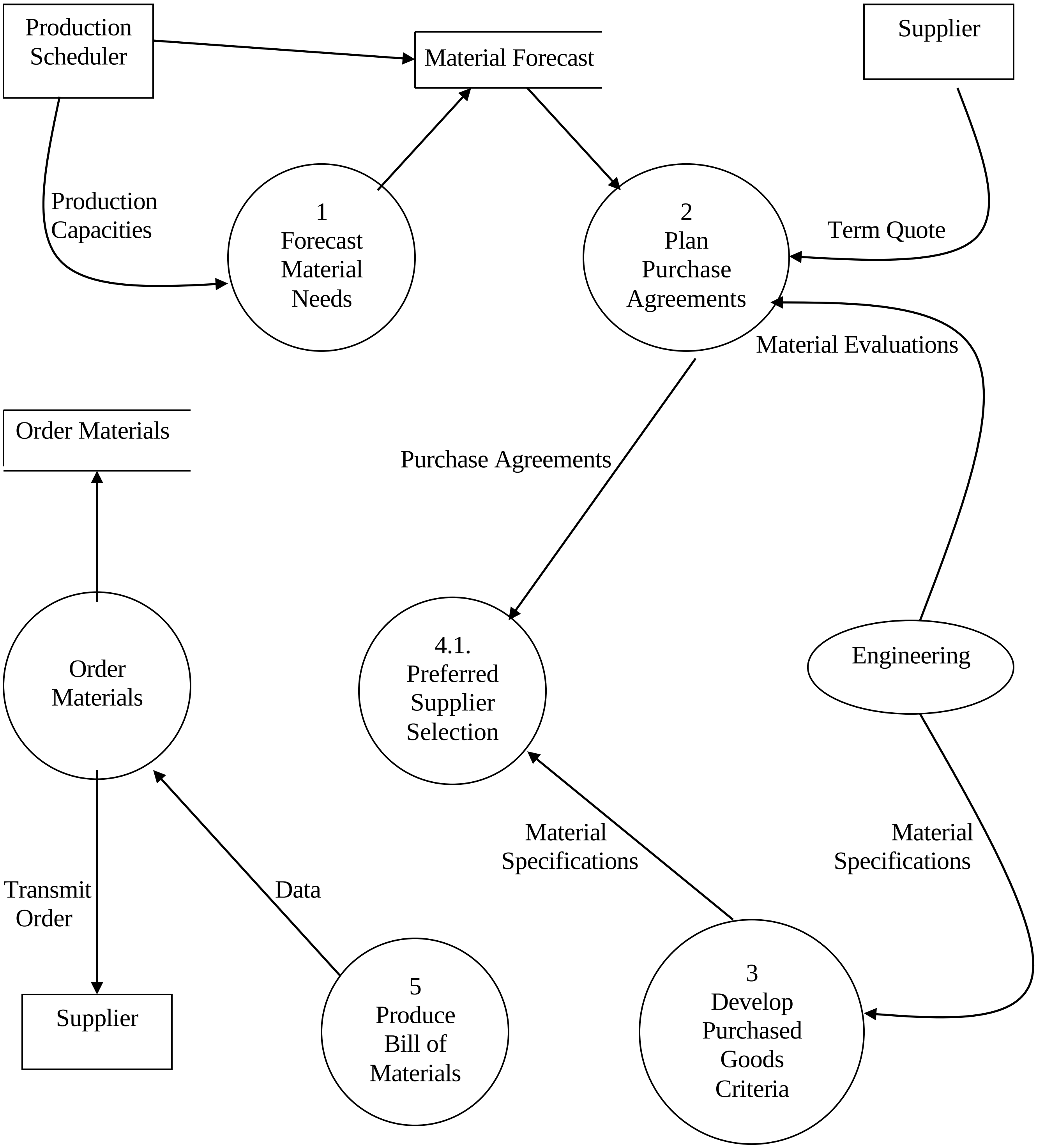
Assignment: DFD for Paying Telephone Bills

Draw a data flow diagram for the following accounts payable system.

When billing details are received from the telephone company, they are validated against a telephone usage file. For each call made, this file tracks usage details (date, time, duration, and phone number). Payment is then processed (this process reads balance from the payment file to assure it is sufficient) and sent to the phone company, and payment details (payment number, date, pay-to, amount, notes) are entered into the payment file.

Assignment: ***Don'ts*** ➔ ***Do's***

Identify and correct all the errors in the following diagram.



Data Flow Diagrams: A Quality Control Checklist

SOURCES/SINKS (EXTERNAL ENTITIES)

- □ Are shown on the context diagram.
- □ Are shown on all the other diagrams where there is an interaction with the outside.
- □ Are represented by squares/rectangles.
- □ Are named by nouns representing a type of person, a group of people, or another system.
- □ Are not linked directly to any other external entity.
- □ Are not linked directly to any data store.

DATA FLOWS

- □ Are represented by arrows.
- □ Carry ONLY data (not physical). If the label is physical, the data dictionary will specify that it is DATA ABOUT that physical object.
- □ Are named using ONLY nouns.
- □ The names are specific; "data", "information", and other vague terms are avoided.
- □ Error paths are not shown. Only normal processing paths are shown.

PROCESSES

- □ Have both inputs and outputs.
- □ Are represented by circles (or some other standard symbol).
- □ Perform data (not physical) transformations.
- □ Are named using specific verbs (usually followed by specific nouns), except on the context diagram. Vague names (such as "update data", "produce information") are avoided.
- □ Names are implementation-independent; they do not reveal whether a person or a machine is performing the task.
- □ No process has identical inputs and outputs.
- □ Each high-level process is decomposed into lower-level processes, until elementary (primitive) processes are reached. (“Leveling”)
- □ All processes are numbered hierarchically.
- □ The inputs/outputs on the parent diagrams are completely consistent with the input/outputs on the children diagrams. (“Balancing”)
- □ For each process, each input to it is necessary for performing that process; there are no idle inputs.
- □ For each process, all the inputs together are sufficient for performing that process; there are no missing inputs.

DATA STORES

- □ Are represented by open-ended rectangles.
- □ They store only data (not physical).
- □ All those internal to the system have both inputs and outputs; external ones may have only input or output.
- □ Are named using singular nouns, without unnecessary words added (such as "data", "data store", "information", "file").
- □ Names are implementation-independent.
- □ Are not linked directly to other data stores.
- □ Request for data is not shown.