

# DFD Example - Lemonade Stand



# Creating Data Flow Diagrams

## Steps:

1. Create a list of activities
2. Construct Context Level DFD  
(identifies external entities and processes)
3. Construct Level 0 DFD  
(identifies manageable sub process )
4. Construct Level 1- n DFD  
(identifies actual data flows and data stores )
5. Check against rules of DFD

# DFD Naming Guidelines

- External Entity → Noun
- Data Flow → Names of data
- Process → verb phrase
  - a system name
  - a subsystem name
- Data Store → Noun

# Creating Data Flow Diagrams

## Lemonade Stand Example



# Creating Data Flow Diagrams

## Example

The operations of a simple lemonade stand will be used to demonstrate the creation of dataflow diagrams.



## Steps:

1. Create a list of activities
  - Old way: no Use-Case Diagram
  - New way: use Use-Case Diagram
2. Construct Context Level DFD  
(identifies sources and sink)
3. Construct Level 0 DFD  
(identifies manageable sub processes )
4. Construct Level 1- n DFD  
(identifies actual data flows and data stores )

# Creating Data Flow Diagrams

## Example

Think through the activities that take place at a lemonade stand.



### 1. Create a list of activities

Customer Order  
Serve Product  
Collect Payment  
Produce Product  
Store Product

# Creating Data Flow Diagrams

## Example

Also think of the additional activities needed to support the basic activities.



### 1. Create a list of activities

Customer Order  
Serve Product  
Collect Payment  
Produce Product  
Store Product  
Order Raw Materials  
Pay for Raw Materials  
Pay for Labor

# Creating Data Flow Diagrams

## Example

Group these activities in some logical fashion, possibly functional areas.



### 1. Create a list of activities

Customer Order  
Serve Product  
Collect Payment

Produce Product  
Store Product

Order Raw Materials  
Pay for Raw Materials

Pay for Labor



# Creating Data Flow Diagrams

## Example

Create a context level diagram identifying the sources and sinks (users).

Customer Order  
Serve Product  
Collect Payment

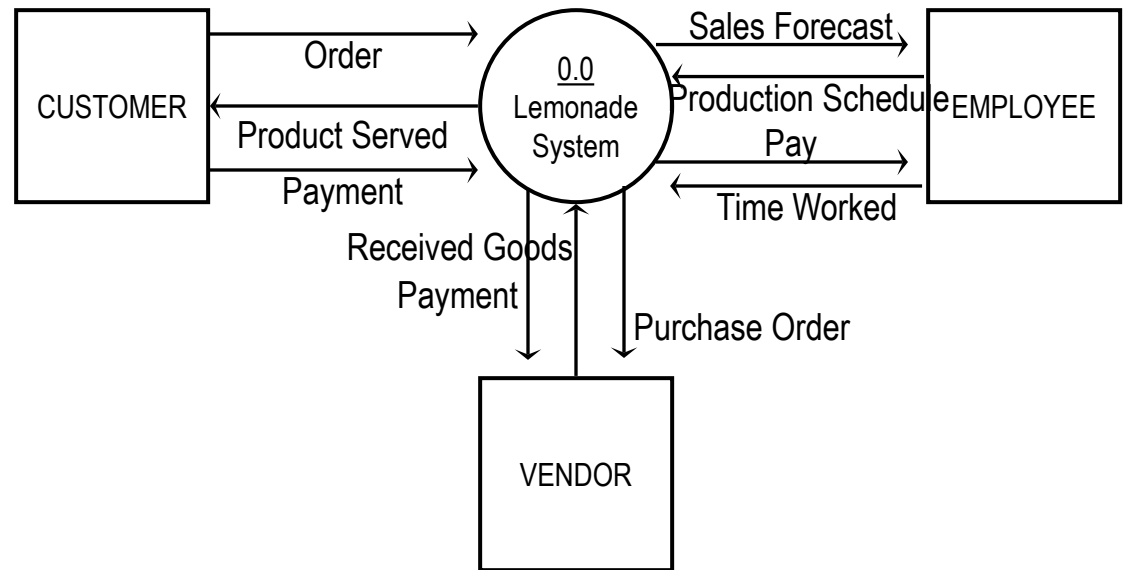
Produce Product  
Store Product

Order Raw Materials  
Pay for Raw Materials

Pay for Labor

## 2. Construct Context Level DFD (identifies sources and sink)

### Context Level DFD



# Creating Data Flow Diagrams

## Example

Create a level 0 diagram identifying the logical subsystems that may exist.

Customer Order  
Serve Product  
Collect Payment

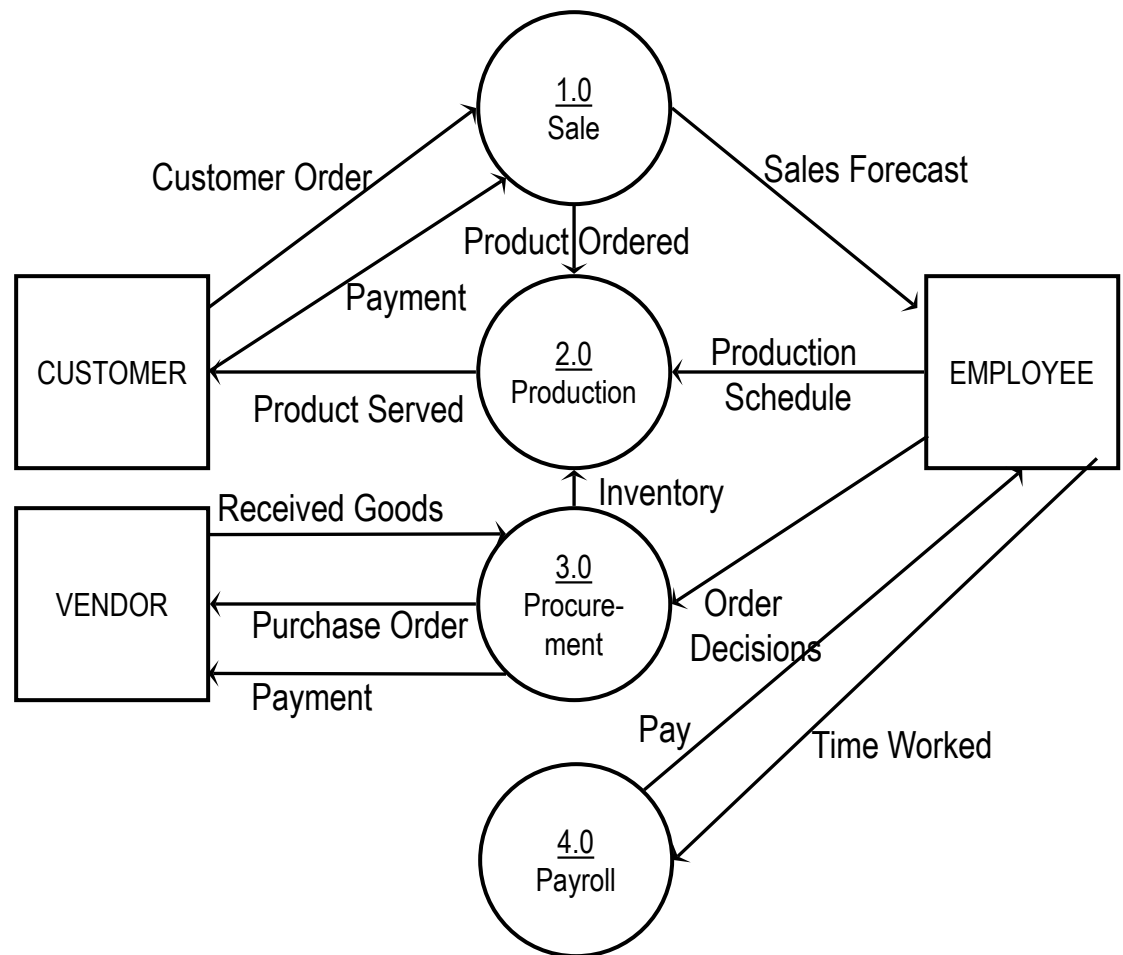
Produce Product  
Store Product

Order Raw Materials  
Pay for Raw Materials

Pay for Labor

3. Construct Level 0 DFD  
(identifies manageable sub processes )

## Level 0 DFD



# Creating Data Flow Diagrams

## Example

Create a level 1 decomposing the processes in level 0 and identifying data stores.

**Customer Order**  
**Serve Product**  
**Collect Payment**

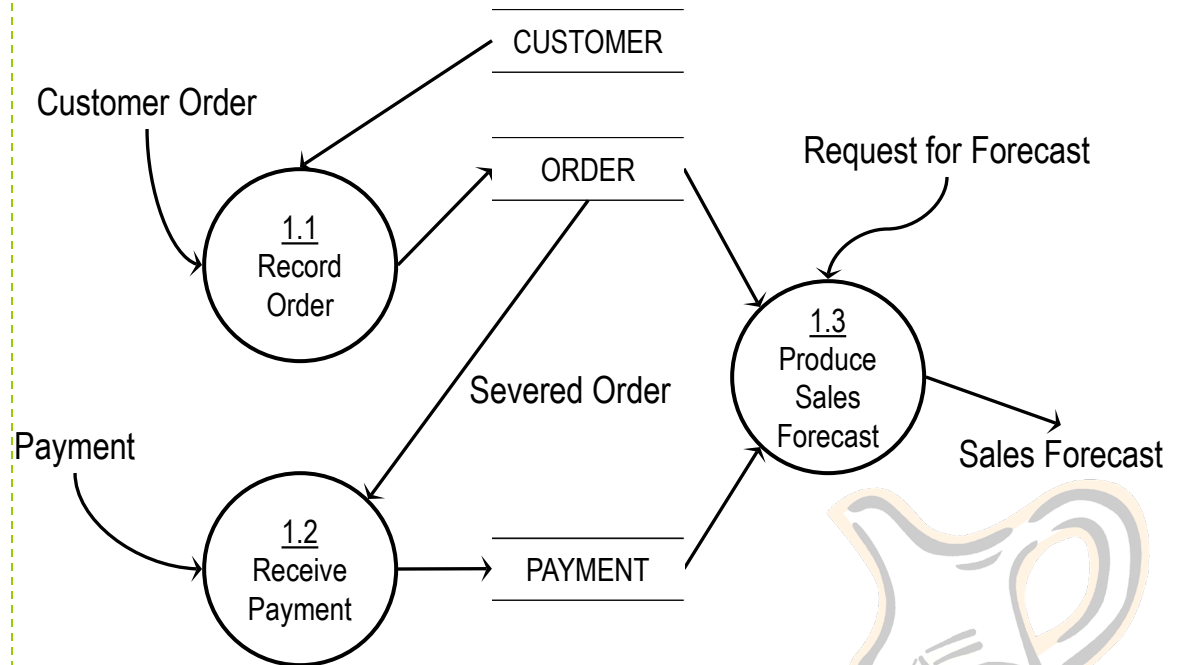
**Produce Product**  
**Store Product**

**Order Raw Materials**  
**Pay for Raw Materials**

**Pay for Labor**

4. Construct Level 1- n DFD (identifies actual data flows and data stores )

## Level 1 DFD



# Creating Data Flow Diagrams

## Example

Create a level 1 decomposing the processes in level 0 and identifying data stores.

**Customer Order**  
**Serve Product**  
**Collect Payment**

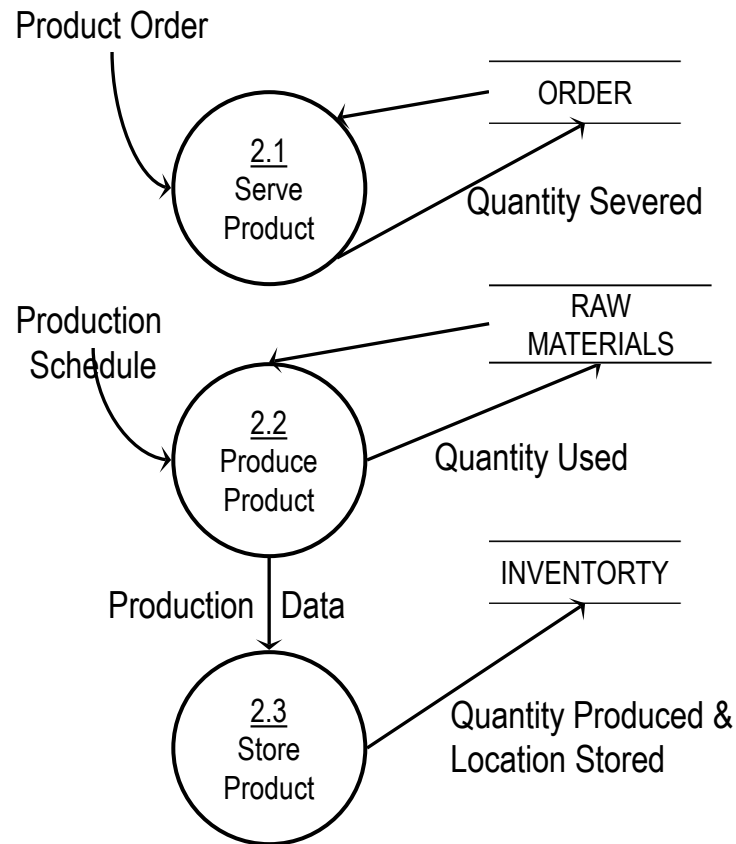
**Produce Product**  
**Store Product**

**Order Raw Materials**  
**Pay for Raw Materials**

**Pay for Labor**

## 4. Construct Level 1 (continued)

### Level 1 DFD



# Creating Data Flow Diagrams

## Example

Create a level 1 decomposing the processes in level 0 and identifying data stores.

Customer Order  
Serve Product  
Collect Payment

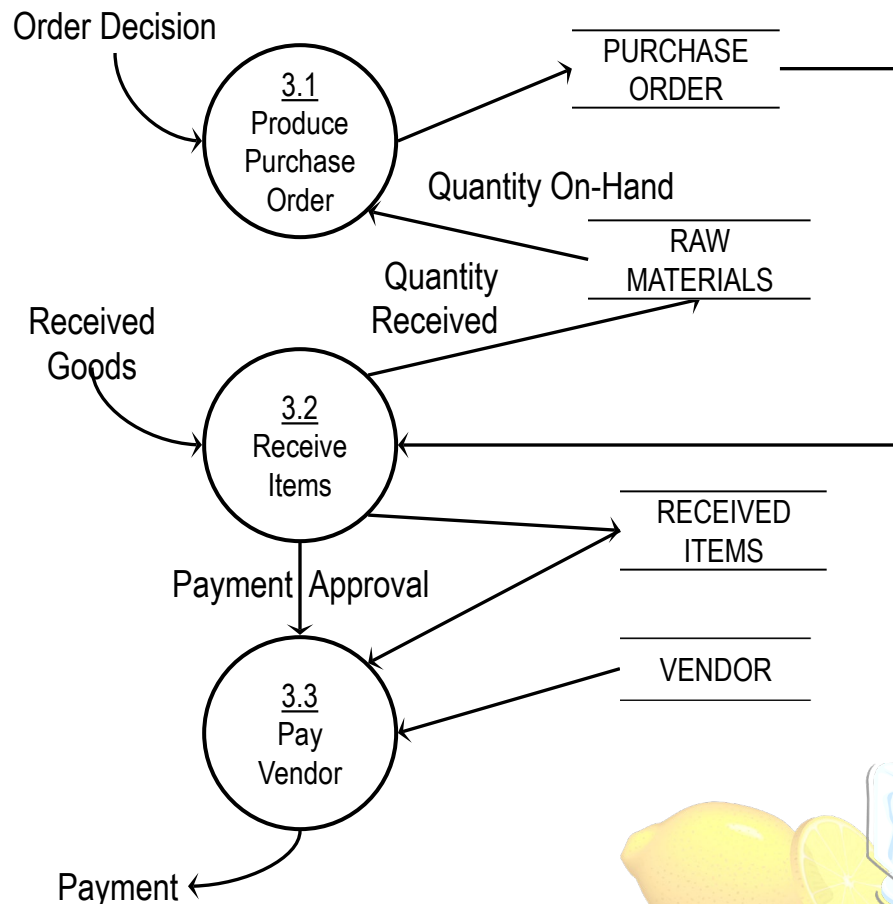
Produce Product  
Store Product

Order Raw Materials  
Pay for Raw Materials

Pay for Labor

## 4. Construct Level 1 (continued)

### Level 1 DFD



# Creating Data Flow Diagrams

## Example

Create a level 1 decomposing the processes in level 0 and identifying data stores.

Customer Order  
Serve Product  
Collect Payment

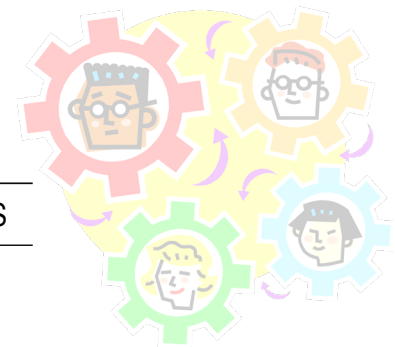
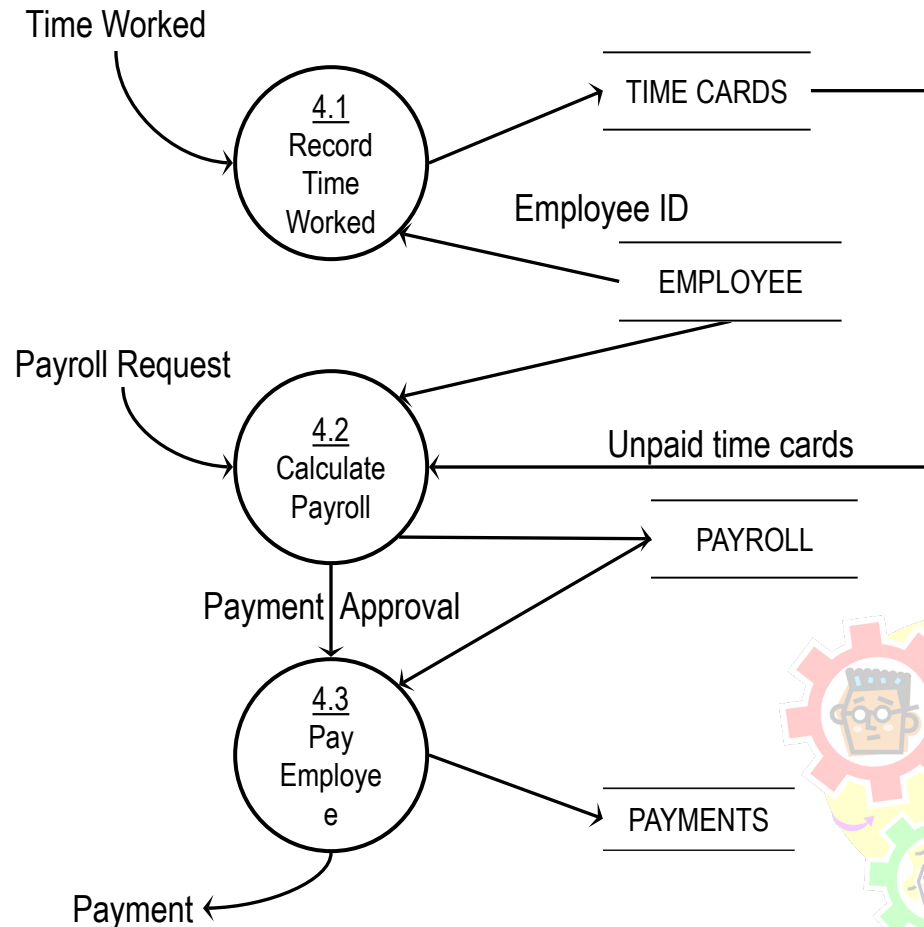
Produce Product  
Store Product

Order Raw Materials  
Pay for Raw Materials

Pay for Labor

## 4. Construct Level 1 (continued)

### Level 1 DFD



# Process Decomposition

