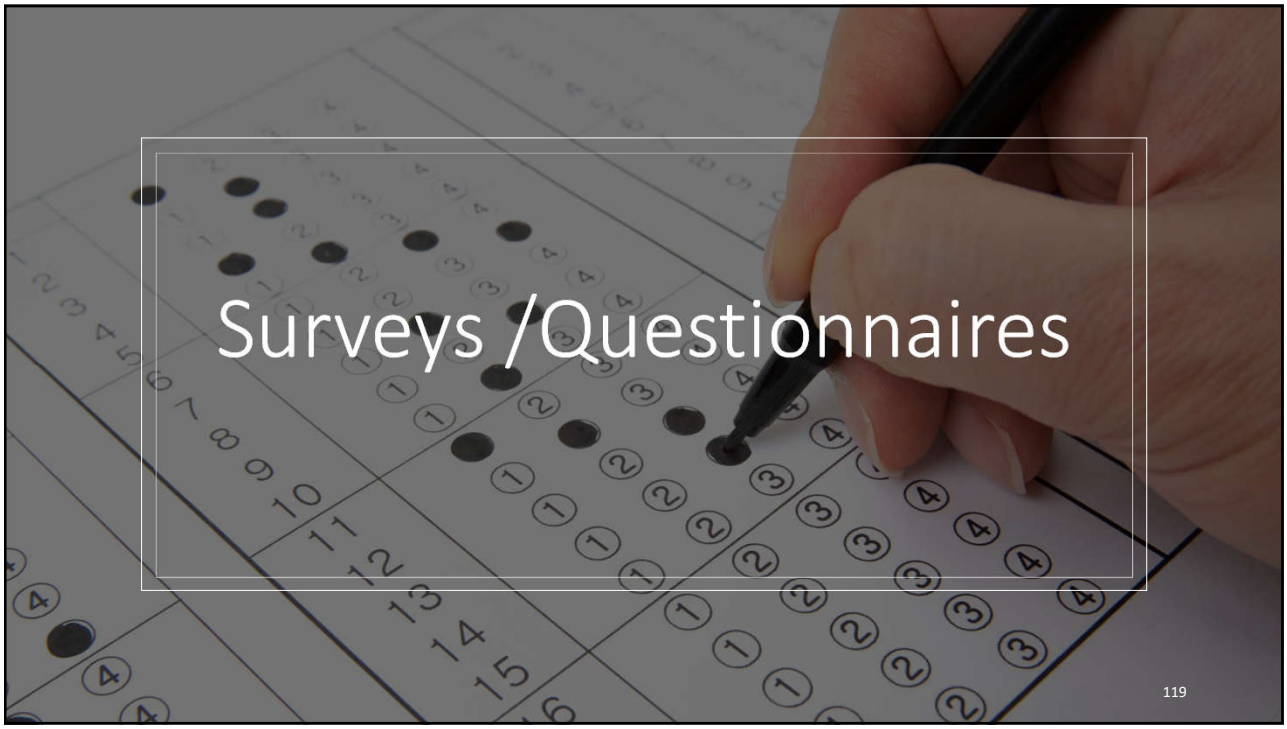

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Introduction

- Questionnaires are useful in gathering information from key organization members about:
  - Attitudes: what people in the organization say they want.
  - Beliefs: what people think is true.
  - Behaviors: what organizational members do.
  - Characteristics: properties of people or things.

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Surveys /Questionnaires

- The ideal approach to this technique is by making a basic Google Form and offering it to the correct individuals, and whenever required, determining a due date.
- You must know what you are attempting to accomplish precisely with the study, and the questions must not to be uncertain.
- Misunderstanding of inquiries can prompt useless and pointless answers.

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Questionnaire Language

- **Simple –** Use the language of the respondents whenever possible.
- **Specific –** work at being specific rather then vague in wording.
- **Short –** keep questions short
- **Not patronizing –** do not talk down to participants through low-level language choices.
- **Free of bias –** also means avoiding objectionable questions.
- **Measurement Scales:** Scaling is the process of assigning numbers to an attribute for the purpose of measuring that attribute or characteristic.
- **Reliability** of scales refers to consistency in response
- **Validity** is the degree to which the question measures what the analyst intends to measure.

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The format for Questionnaires

- **Fixed Format:**
  - Fixed format surveys consist of questions that need a variety of predefined responses from people.
  - Respondents have to choose an answer from a series of answers provided.
  - A reply from this format of the questionnaire is a lot simpler to interpret.
  - In any case, then again, it is increasingly latent; respondents can't give their answers or opinion other than presented in the survey.
- **Free Format:**
  - Free format surveys will enable users to answer openly for each inquiry.
  - A question is proposed, and the respondent enters the appropriate response in the space given after the query.

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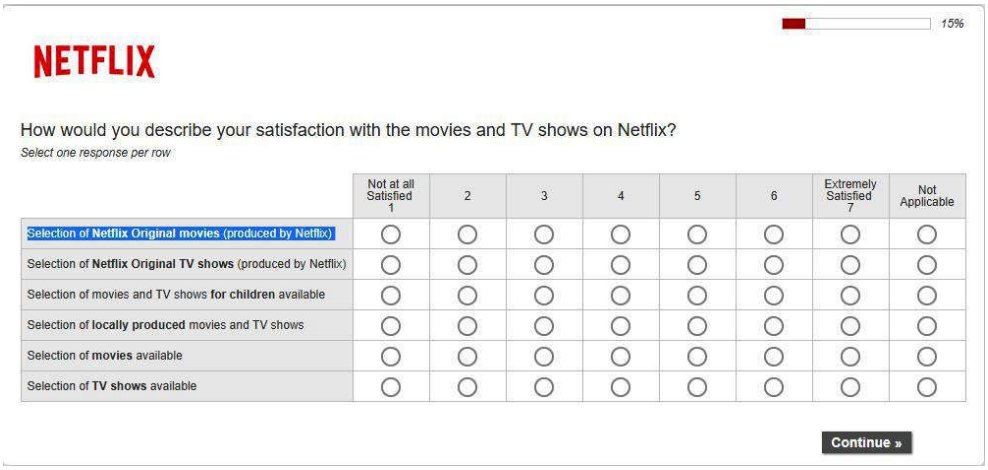
Fixed Format



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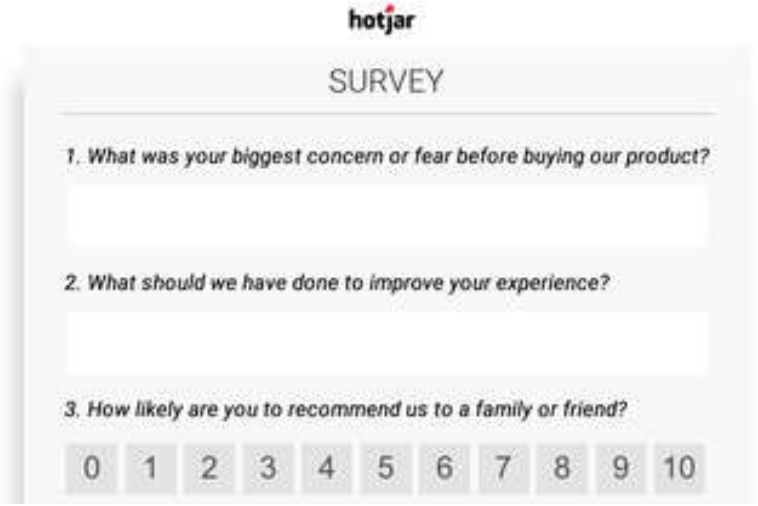
Free Format



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Observation

- Observing the decision maker; and the decision maker's physical environment; and their interaction with their physical, ergonomic environment are important unobtrusive methods.
- Observation provides insight on what organizational members do.
- Help confirm what has been found through other methods.

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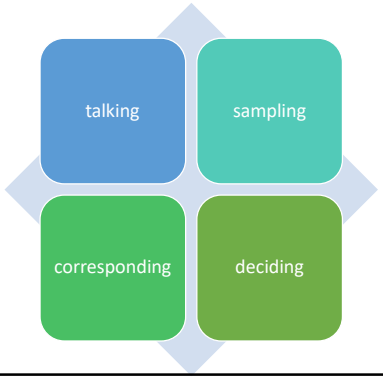
Analyst's Playscript

- Involves observing the decision-makers behavior and recording their actions using a series of action verbs for example



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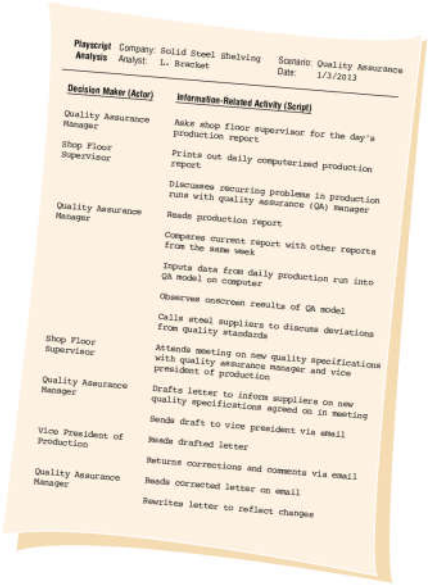

Playscript Analysis
Company: Solid Steel Shelving
Analyst: L. Bracket
Scenario: Quality Assurance
Date: 1/3/2013

Decision Maker (Actor)	Information-Related Activity (Script)
Quality Assurance Manager	Asks shop floor supervisor for the day's production report
Shop Floor Supervisor	Prints out daily computerized production report
	Discusses recurring problems in production runs with quality assurance (QA) manager
Quality Assurance Manager	Reads production report
	Compares current report with other reports from the same week
	Inputs data from daily production run into QA model on computer
	Observes onscreen results of QA model
	Calls steel suppliers to discuss deviations from quality standards
Shop Floor Supervisor	Attends meeting on new quality specifications with quality assurance manager and vice president of production
Quality Assurance Manager	Drafts letter to inform suppliers on new quality specifications agreed on in meeting
	Sends draft to vice president via email
Vice President of Production	Reads drafted letter
	Returns corrections and comments via email
Quality Assurance Manager	Reads corrected letter on email
	Rewrites letter to reflect changes

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Data Flow Diagrams (DFD)

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Data Flow Diagram (DFD)

- Graphically characterize data processes and flows in a business system.
- Depict:
  - System inputs
  - Processes
  - Outputs

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Advantages of the Data Flow Approach

- Freedom from committing to the technical implementation too early
- Understanding of the interrelatedness of systems and subsystems
- Communicating current system knowledge to users
- Analysis of the proposed system

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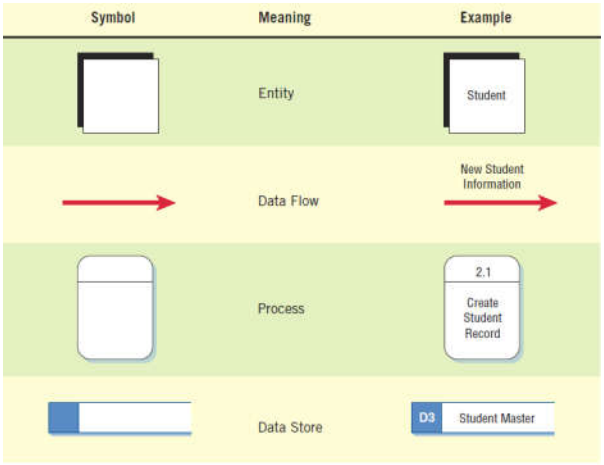
Basic Symbols



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External Entities

- An external entity sends data or receives data from the system.
- A source or destination of data, outside the boundaries of the system
- Should be named with a noun
- The same entity may be used more than once on a given data flow diagram.
- Represent another department, a business, a person, or a machine.

- External entities may be
  - A person, such as CUSTOMER or STUDENT
  - A company or organization, such as BANK or SUPPLIER
  - Another department within the company, such as ORDER FULFILLMENT
  - Another system or subsystem, such as the INVENTORY CONTROL SYSTEM

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Data Flow

- Shows movement of data from one point to another
- Described with a noun
- Arrowhead indicates the flow direction
- Represents data about a person, place, or thing
- Data flows occurring simultaneously can be depicted doing just that using parallel arrows.

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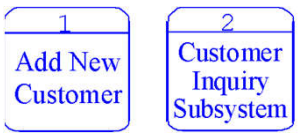
Process

- Denotes a change in or transformation of data
- Represents work being performed in the system
- Naming convention:
  - Assign the name of the whole system when naming a high-level process.
  - To name a major subsystem attach the word subsystem to the name.
  - Use the form verb-adjective-noun for detailed processes.



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Data Store

- A depository for data that allows examination, addition, and retrieval of data
- Named with a noun, describing the data
- Data stores are usually given a unique reference number, such as D1, D2, D3
- Represents a:
  - Database
  - Computerized file
  - Filing cabinet

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Steps in Developing Data Flow Diagrams

- Data flow diagrams can and should be drawn systematically.
- To begin a data flow diagram, collapse the organization's system narrative into a list with four categories of external entity, data flow, process, and data store. This list helps determine the boundaries of the system. Next begin drawing the context diagram.

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Creating the Context Diagram

- The highest level in a data flow diagram
- Contains only one process, representing the entire system
- The process is given the number 0
- All external entities, as well as major data flows are shown

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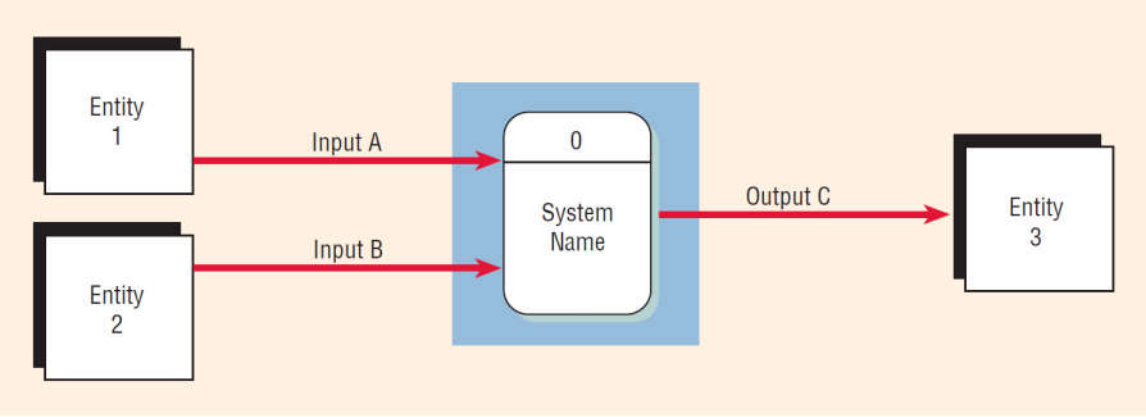
Context Diagram



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Drawing Diagram 0

- The explosion of the context diagram.
- May include up to nine processes.
- Each process is numbered.
- Major data stores and all external entities are included.

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Drawing Diagram 0 (Cont)

- Start with the data flow from an entity on the input side.
- Work backwards from an output data flow.
- Examine the data flow to or from a data store.
- Analyze a well-defined process.
- Take note of any fuzzy areas.

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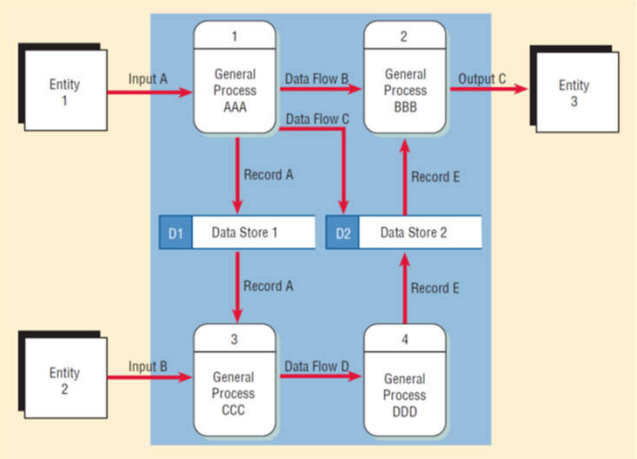
Greater Detail in Diagram 0



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Data Flow Diagram Levels

- Data flow diagrams are built in layers.
- The top level is the context level.
- Each process may explode to a lower level.
- The lower-level diagram number is the same as the parent process number.
- Processes that do not create a child diagram are called primitive.

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Creating Child Diagrams

- Each process on diagram 0 may be exploded to create a child diagram.
- A child diagram cannot produce output or receive input that the parent process does not also produce or receive.
- The child process is given the same number as the parent process.
  - Process 3 would explode to Diagram 3.

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Creating Child Diagrams (Cont)

- Entities are usually not shown on the child diagrams below Diagram 0.
- If the parent process has data flow connecting to a data store, the child diagram may include the data store as well.
- When a process is not exploded, it is called a primitive process.

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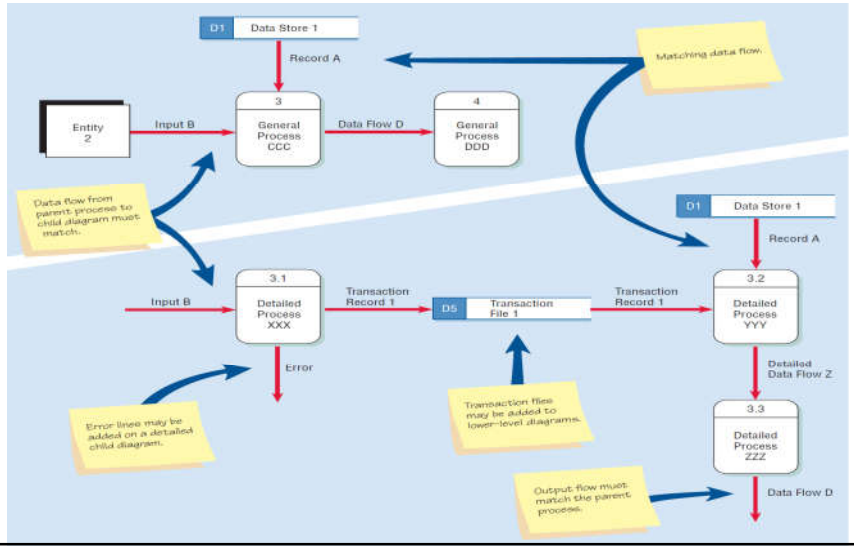
Child Diagram Example



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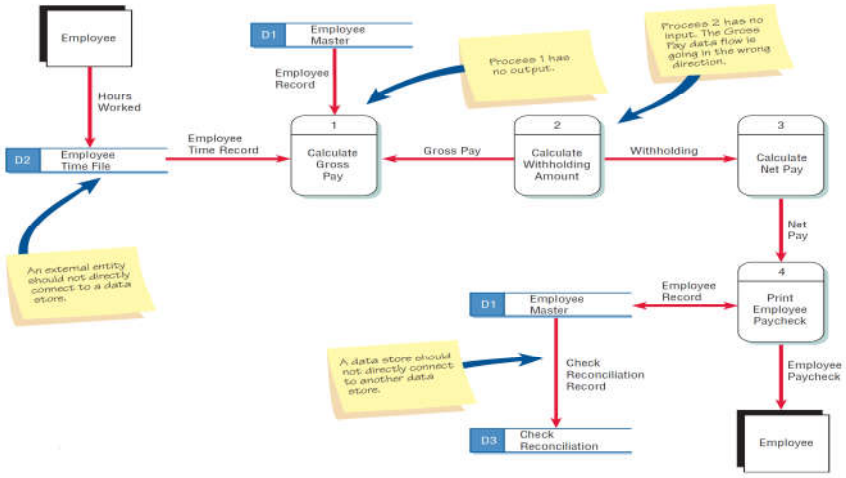
Typical Errors that Can Occur in a Data Flow Diagram



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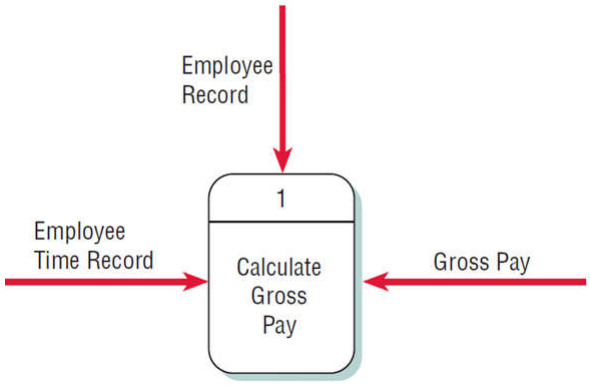
Checking the Diagrams for Errors



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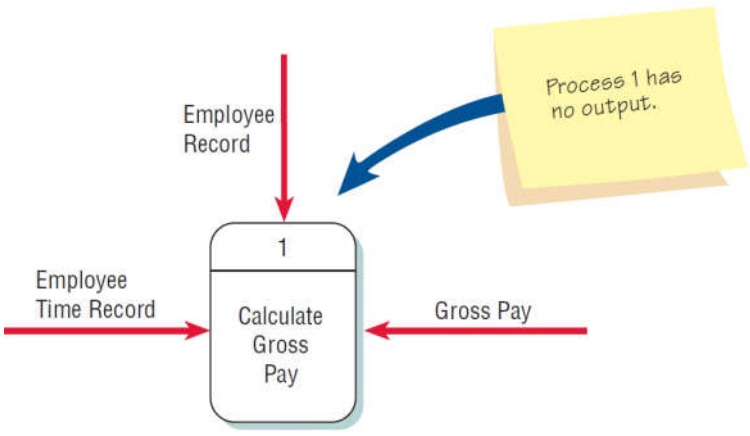
Checking the Diagrams for Errors



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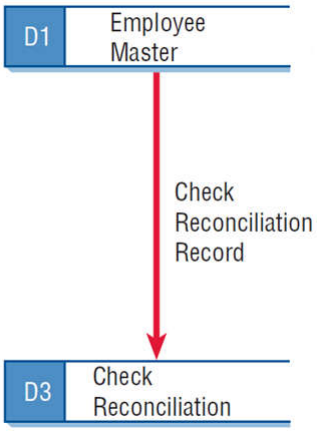
Checking the Diagrams for Errors



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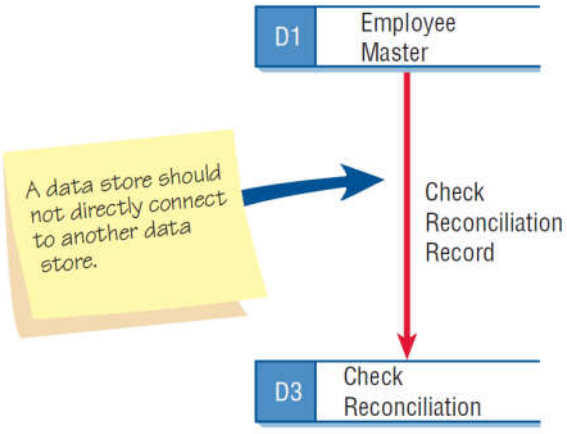
Checking the Diagrams for Errors



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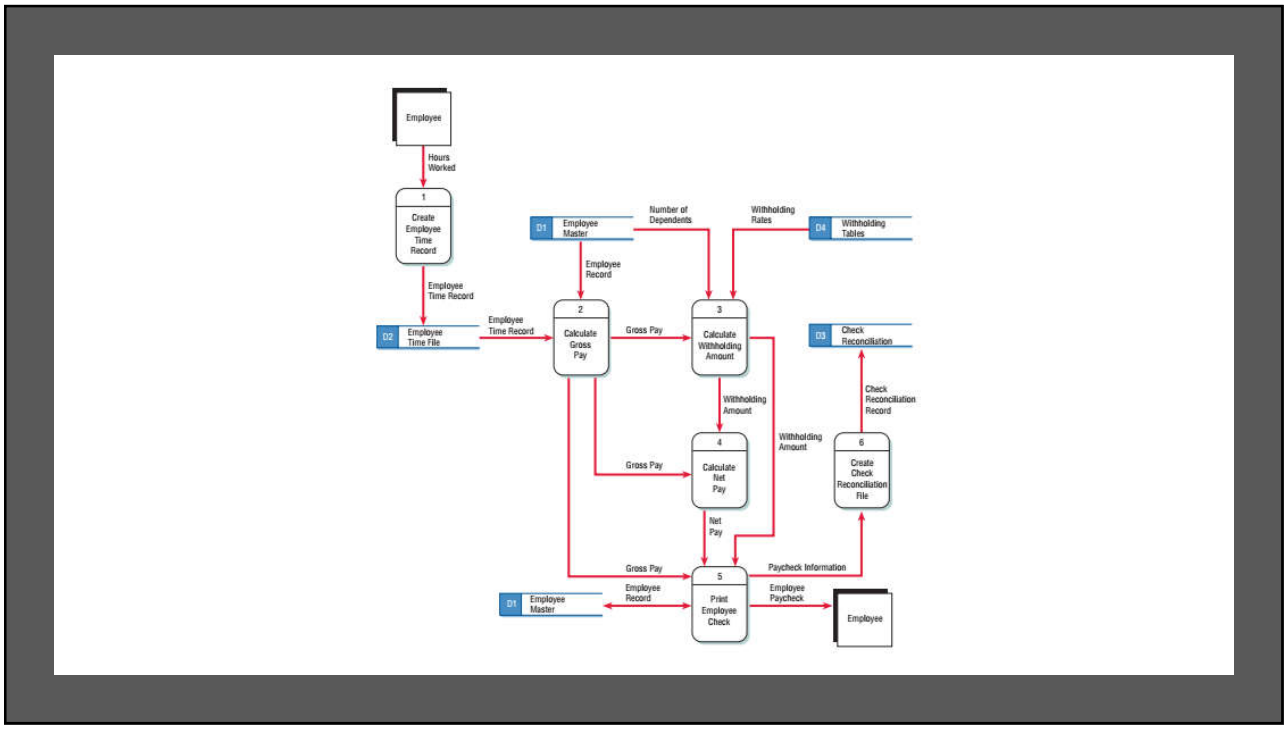
Employee
Hours Worked
1
Create Employee Time Record
Employee Time Record
D2 Employee Time File
Employee Time Record
2
Calculate Gross Pay
D1 Employee Master
Number of Dependents
Withholding Rates
D4 Withholding Tables
Employee Record
3
Calculate Withholding Amount
D3 Check Reconciliation
Check Reconciliation Record
Withholding Amount
4
Calculate Net Pay
Gross Pay
Withholding Amount
6
Create Check Reconciliation File
Net Pay
Gross Pay
Paycheck Information
D1 Employee Master
Employee Record
5
Print Employee Check
Employee Paycheck
Employee

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