

BUS 362

Assignment 04 - Data Flow Diagrams

Ashton Charbonneau

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Data Flow Diagrams

Purpose

- Visual use case
 - Matches use cases exactly
 - Less information than a use case (does not have a notion of order, steps, triggers, or meta-info)
- How does information move and get transformed through the system?
- Non-temporal: order doesn't matter

Components

- Processes
- External entities
- Data stores
- Information flows
- Levels

Processes

- Use case name
- Rounded corners
- Verb-phrase
 - Eg. check grades, assign schedule, book rental
 - Active Verb -> Subject
- Numbered
 - Context: 0
 - Level 0: 1, 2, 3 ...
 - Level 1: 1.1, 1.2, 1.3 ... 2.1, 2.2, 2.3
 - Level 2: 1.1.1, 1.1.2 ... 1.3.1, 1.3.2 ... 3.2.1, 3.2.2
- Must have at least one input and one output (black hole/miracle process)

External Entities

- Use case information destination/source
- Squared corners
- Something external to the system
 - Eg. person (user, customer), database (weather), role (lawyer), organization (payment processor)
- Can only be connected to processes
- Typically has both inputs and outputs

Data Stores

- Use case information destination/source
- Squared corners, missing right side
- Numbered
 - D1, D2, D3 ... DB1, DB2, DB3
 - Starts at 1, unrelated to process numbers or level
- Part of the system, not external
- A place where data is stored (doesn't have to be digital, can be physical)
- Can only be connected to processes
- Must have at least one input and at least one output (black hole/miracle database)

Information Flows

- Use case information
- Typically between an external entity/data store and a process
- Rarely exists between two processes, used as a simplification for storing information
- All information flows on the DFD need unique names
- Name is a description of a noun
- Something you could print out and give to someone

Levels

- Top level: context diagram
- 2nd level: level 0 diagram
- 3rd level: level 1 diagram (and so on)
- Transforms a set of processes into one process
- All external entities are present on all levels
- All information flows between processes and external entities retained
- Data stores are not retained when moving to a higher level, but are retained when moving to a lower level

Textbook Pages

- 5th Edition: Chapter 5 - Process Modelling (183 - 220)
- 6th Edition: Chapter 5 - Process Modelling (153 - 186)

Example

Example

- TA assignment grading process
- Students, TAs, professors
- Grade assignments, grade tests
- Grades database, student database

Assignment

Instructions

Assignment

1. Create a context diagram and level 0 DFD for EZ-ship.
2. Save and submit as a PDF. Please make sure that it is possible to read all of the data flows.