

Structural Tools

① DFD (Data Flow Diagram)

Advantages

→ better method for organizing & representing information.

→ guidelines for accuracy checking of informⁿ.

→ understandability is easy for user

Disadvantages

→ requires a trained analyst

Data Flow → flow of data

Control flow → flow of PC (Program Counter) / CPU scheduling

Instruction Set (I.S) → set of instructions computer can perform
↳ If I.S is (↓)es, then cost (↓)es ⇒ operating speed (↑)es.

RISC system have less I.S (only required)

CISC " " more I.S.

In RISC, Real time system is used.

→ Others

Data flow architecture

→ its instruction is K/a VLIW (Very Large Instruction Word)

→ data is moving instead of process (like in control flow)

DFD

→ It is a graphical tool

→ to describe & analyze data flow in the system.

→ Created by "Larry Constantine"

→ Data Source, Processes, Data Sink, ^{→ final pos / dest}

↳ things included in DFD.

→ certain symbols used (like lines, bubbles, ...)

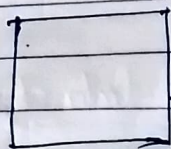
Data flow



&



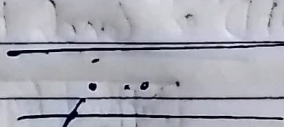
→ circular rectangle



→ Rectangle

Process

Data source/sink



→ Data Store

↳ Anything written b/w
1st lines

Physical DFD & Logical DFD

1) Physical DFD

→ used to model current system

→ used to ~~model~~ understand the current system clearly.

Eg data source/sink are actual department in university.

2) Logical DFD

→ used to model proposed system.

→ it represent data flow through system, i.e. b/w processes & in & out of data source.

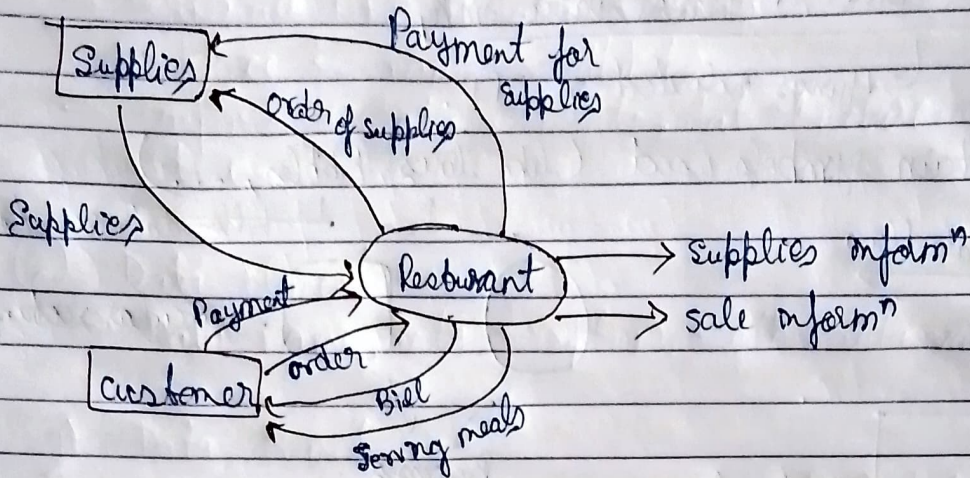
Making a DFD

→ start ~~from~~ level 0, then level 1, level 2, ...

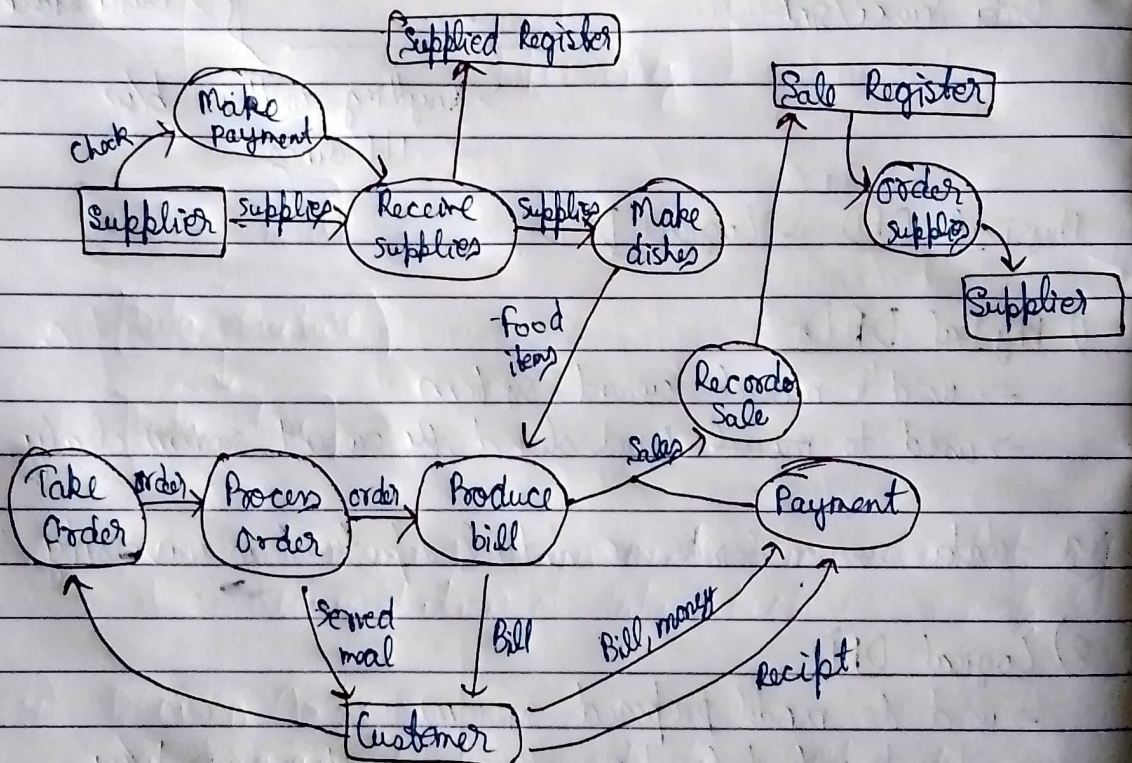
→ In most situation level 2 DFD is enough.

Eg^o Restaurant managing system.

i) Context Diagram or Level 0 DFD



ii) Physical DFD or Level 1 DFD



iii) Logical DFD or Level 2 DFD

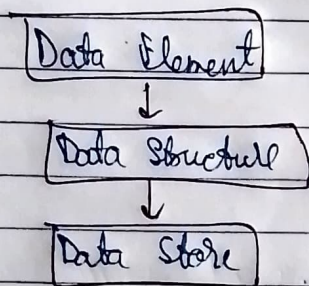
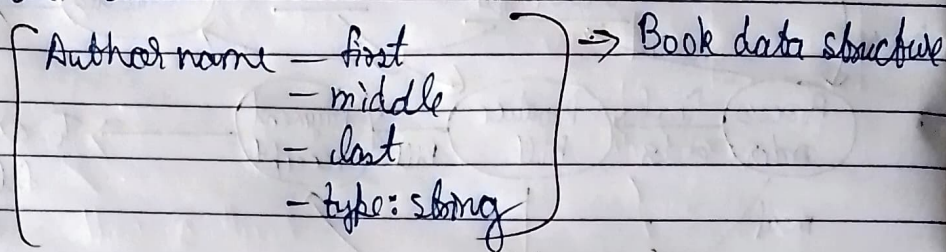
② Data Dictionary

- It is structured repository - data about data → meta data
- Defines all DFD data elements
- reference for names & attributes
- comprises of data elements, data structure, data store

③ Data Element

- Data name, data description, length, data values

Eg: Data Element



- we get memory requirement from data dictionary
- it is documentation of data structure & elements

④ Decision Tree

- a diagram that represents cond't actions
- gives the logic of system, while in DFD data flow is represented
- each to construct

