



BIF703

System Analysis & Design

Diagramming – Part I:

Mind Mapping

Organizational Charts /
Data Flow Diagrams (DFDs)

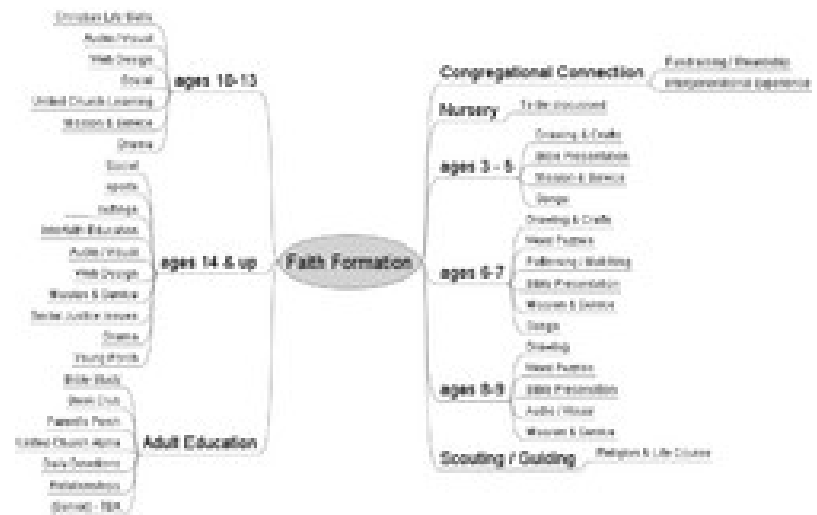
Diagramming

Mind Maps

A **mind map** is a diagram used to help visualize a set of related ideas. The mind map starts with a central idea or object, and then other sub-ideas or objects (called nodes) branch-out from the center.

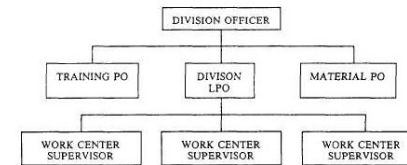
You can use a mind map to help develop projects, presentations, or simply use to help solve a problem...

Refer to “Resources – Week 10 Notes” on how to use the **Freemind** Mind Map Application...



Diagramming

Organizational Charts

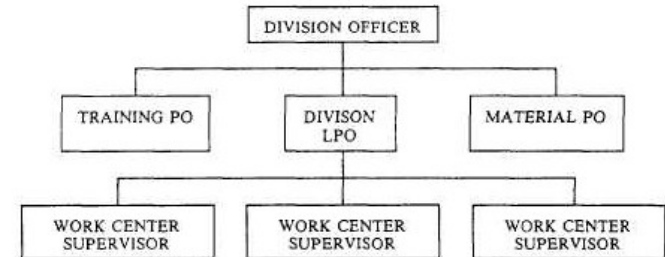


Organizational Charts (also known as a Hierarchical Diagram) is used to denote departments and areas of responsibility in an organization. After the observation/interviewing process, an organization chart can be created.

This chart will help to understand the different areas that may be using the computer system in order to generate other diagrams such as Data-Flow-Diagrams or System Flowcharts.

Diagramming

Organizational Charts



The chart starts with the highest area of responsibility (for example president, CEO, etc) and then proceeds down subsequent levels (such as Vice Presidents, Managers, Supervisors, etc)

Lines are used to connect between the different levels to show the direct relationships between the levels.

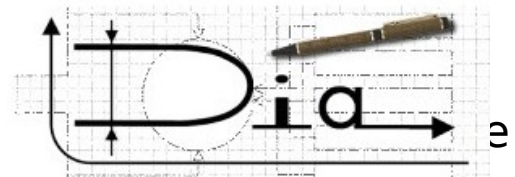


Diagramming

Organizational Charts

There are many software programs that can be used to create organizational charts such as Visio. Unfortunately, many of these packages are proprietary and require the user pay for the software.

There is an “open-source” diagramming tool called [Dia](#), that is available for free. This applica Windows and Linux OS platforms.



Refer to this week’s lab on how to install and use [Dia](#) on your MS Windows machine at home.



Diagramming

Data-Flow-Diagram (DFD)



Once areas of responsibility are properly defined, then follow-up interviews can be used to generate Data-Flow-Diagrams.

Data-Flow-Diagrams (DFDs) are an efficient method to “break-down” how data is processed into information. In this way, the diagram can show the “flow” of data through a system, including if the data needs to be stored...



Diagramming

Data-Flow-Diagram (DFDs)

DFDs require using systems to represent data, information, processing and storage.

There are two main diagramming conventions with their own types of symbols: The Gane and Sarson Convention and the Yourdan Convention. For simplicity, we will be using the Yourdan Convention



Diagramming

Data-Flow-Diagram (DFD)

DFD Symbols (Yourdan Convention)

 **Terminator** (used to represent data or information)

 **Data Storage** (storage of data or information)
(I will allow you to use  symbol)

 **Process** (step(s) required to process data)

 **Data Flow** (Direction of data Flow)



Diagramming

Data-Flow-Diagram (DFD)

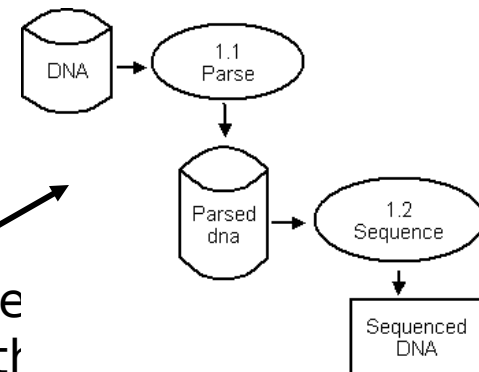
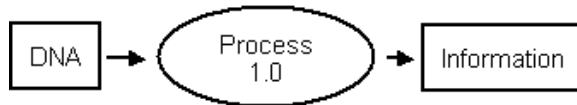
An interesting feature of DFDs is that they can be used to view data flow in a general context, but also a detailed context. These are referred to levels - level 0 is a very summary (general) level, and each subsequent level can provide more data flow (and processing details).

Data-Flow-Diagrams

Data-Flow-Diagram (DFD) – Example (Using Dia)

Level 0 DFD (General)

Level 1 DFD (More Detail)



You can “break-down” the diagram into many levels until the entire process has been displayed. This will help in the analysis phase...



Additional Resources

- Here are useful related links:

Definition of Organizational Charts:
http://en.wikipedia.org/wiki/Organizational_chart

Definition of Data-Flow-Diagrams:
<http://www.openworkbench.org/>

Dia (Free Diagramming Tool) Website:
<http://www.gnome.org/projects/dia/>