Flow Chart

A Pictorial Representation of
Logic and Reasoning Flow

Introduction

- A flowchart is simply a graphical representation of steps. It shows steps in sequential order and is widely used in presenting the flow of algorithms, workflow or processes. Typically, a flowchart shows the steps as boxes of various kinds, and their order by connecting them with arrows.

Introduction

- A flowchart is a graphical representations of steps. It was originated from computer science as a tool for representing algorithms and programming logic but had extended to use in all other kinds of processes.
- Nowadays, flowcharts play an extremely important role in displaying information and assisting reasoning. They help us visualize complex processes, or make explicit the structure of problems and tasks.
- A flowchart can also be used to define a process or project to be implemented.

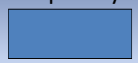
Requirements of Flow Chart

- It helps to clarify complex processes.
- It identifies steps that do not add value to the internal or external customer, including delays; needless storage and transportation; unnecessary work, duplication, and added expense; breakdowns in communication.
- It helps team members gain a shared understanding of the process and use this knowledge to collect data, identify problems, focus discussions, and identify resources.
- It serves as a basis for designing new processes.

Symbols

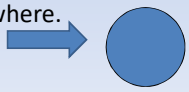
- The **Terminator Symbol** represents the starting or ending point of the system.
  - Sign 
- **Data or Input / Output Symbol** 
  - The Input / Output Symbol represents data that is available for input or resulting from processing (i.e. customer database records)
  - It represents information entering or leaving the system. An input might be an order from a customer. Output can be a product to be delivered.

Symbols

- The **Process Symbol** represents any process, function, or action and is the most frequently used symbol in flowcharting.
  - Sign 
- The **Document Symbol** is used to represent any type of hard copy input or output (i.e. reports)
  - Sign 

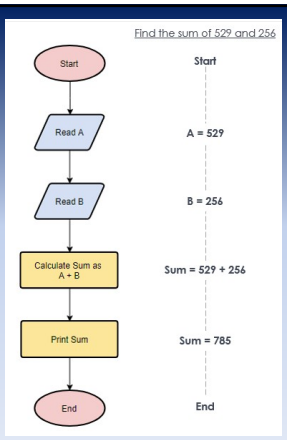
Symbols

- Decision Symbol
  - A diamond represents a decision or branching point. Lines coming out from the diamond indicates different possible situations, leading to different sub-processes.
- The **Connector Symbol** represents the exit to, or entry from, another part of the same flow chart. It is usually used to break a flow line that will be continued elsewhere.



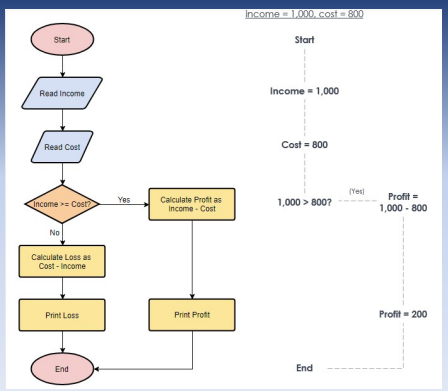
Secondary Symbols

- On-Page Reference
  - This symbol would contain a letter inside. It indicates that the flow continues on a matching symbol containing the same letter somewhere else on the same page.
- Off-Page Reference
  - This symbol would contain a letter inside. It indicates that the flow continues on a matching symbol containing the same letter somewhere else on a different page.
- Delay or Bottleneck
  - Identifies a delay or a bottleneck.
- Flow
  - Lines represent the flow of the sequence and direction of a process.

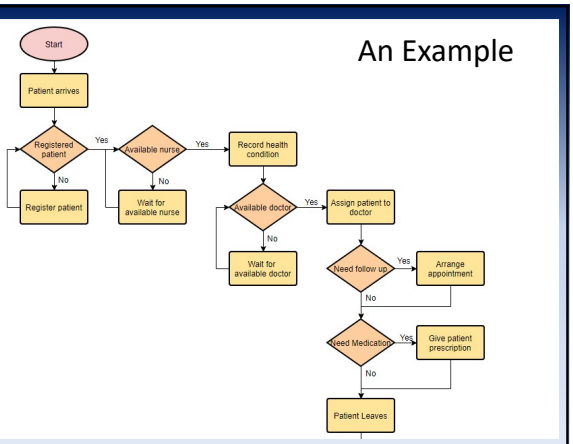


A Sequential Process

A Conditional Process



An Example



Data Flow Diagram

- A Data Flow Diagram (DFD) is a traditional way to visualize the information flows within a system.
- A neat and clear DFD can depict a good amount of the system requirements graphically. It may be used as a communications tool between a systems analyst and any person who plays a part in the system that acts as the starting point for redesigning a system.
- It can be manual, automated, or a combination of both.
- The purpose of a DFD is to show the scope and boundaries of a system as a whole.

DFD Levels

- DFD is usually beginning with a context diagram as level 0, a simple representation of the whole system.
- To elaborate further from that, we drill down to a level 1 diagram with lower-level functions decomposed from the major functions of the system.
- This could continue to evolve to become a level 2 diagram when further analysis is required.
- Progression to levels 3, 4 and so on is possible but anything beyond level 3 is not very common.
- The level of detail for decomposing a particular function depending on the complexity that function.

DFD Video

- https://www.youtube.com/watch?v=ztZsEI6C-mI&feature=emb_logo
- This video is about Data Flow Diagram (DFD) –
  - What is DFD?
  - How DFD works?
  - How to draw a DFD in Visual Paradigm?

DFD and Flow Chart

- The **main difference** between DFD and Flowchart is that **DFD is a graphical diagram that represents the data flow of a system while flowchart is a graphical diagram that represents the sequence of steps to solve a problem.**

Algorithm

- An **algorithm** is a step procedure to solve logical and mathematical problems. A recipe is a good **example** of an **algorithm** because it says what must be done, step by step.
- An **algorithm** is a set of instructions designed to perform a specific task. This can be a simple process, such as multiplying two numbers, or a complex operation, such as playing a compressed video file. ... In computer programming, **algorithms** are often created as functions.

Algorithm properties

- Input specified.
- Output specified.
- Definiteness.
- Effectiveness.
- Finiteness.

Input Process Output

- A computer program is useful for another sort of process using the input-process-output model receives inputs from a user or other source, does some computations on the inputs, and returns the results of the computations. The system would divide the work into three categories:
- A requirement from the environment (Input)
- A computation based on the requirement (Process)
- A provision for the environment (Output)

Input Process Output Model

- The input–process–output (IPO) model, or input-process-output pattern, is a widely used approach in systems analysis and software engineering for describing the **structure of an information processing program or other process**.
- Many introductory programming and systems analysis texts introduce this as the most basic structure for describing a process.

Label Generator

- The Label Designer allows you to create custom labels, and file cards to complement DBMS functionality.
- Use of Labels
  - Provides **Identification**. Label plays an efficient role in providing uniqueness & identity to products. ...
  - Provides Description. ...
  - Makes Products Comparison Easy. ...
  - Helps in Marketing. ...
  - Makes Products Grading Easy. ...
  - Protects Customers from Getting Cheated. ...
  - Provides Information As Per Law.

Report Generator

- A **report generator** is a computer program whose purpose is to take data from a source such as a database, XML stream or a spreadsheet, and use it to produce a document in a format which satisfies a particular human readership.
- Report generation functionality is almost present in database systems, where the source of the data is the database itself. It can also be argued that report generation is part of the purpose of a spreadsheet
- Information systems theory specifies that information delivered to a target human reader must be Timely, Accurate and Relevant. Report generation software targets the final requirement by making sure that the information delivered is presented in the way most readily understood by the target reader.

Query Session

Ask if Any …