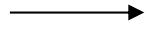
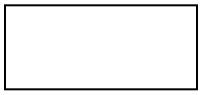
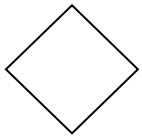
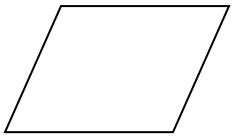
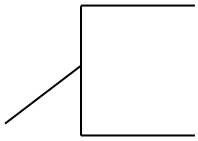
Flowchart

A flow chart is a graphical or symbolic representation of a process. Each step in the process is represented by a different symbol and contains a short description of the process step. The flow chart symbols are linked together with arrows showing the process flow direction. This diagrammatic representation illustrates a solution model to a given problem. Flowcharts are used in analyzing, designing, documenting or managing a process or program in various fields.

The first structured method for documenting process flow, the "flow process chart", was introduced by Frank and Lillian Gilbreth in the presentation "Process Charts: First Steps in Finding the One Best Way to do Work", to members of the American Society of Mechanical Engineers (ASME) in 1921.

Building Blocks

ANSI/ISO Shape	Name	Description
	Flow line (Arrowhead)	Shows the process's order of operation. A line coming from one symbol and pointing at another.
	Terminal	Indicates the beginning and ending of a program or sub-process. Represented as a stadium, oval or rounded (fillet) rectangle. They usually contain the word "Start" or "End", or another phrase signaling the start or end of a process, such as "submit inquiry" or "receive product".
	Process	Represents a set of operations that changes value, form, or location of data. Represented as a rectangle.
	Decision	Shows a conditional operation that determines which one of the two paths the program will take. The operation is commonly a yes/no question or true/false test. Represented as a diamond (rhombus).
	Input / Output	Indicates the process of inputting and outputting data, as in entering data or displaying results. Represented as a parallelogram.
	Annotation (Comment)	Indicating additional information about a step the program. Represented as an open rectangle with a dashed or solid line connecting it to the corresponding symbol in the flowchart.

	Predefined Process	Shows named process which is defined elsewhere. Represented as a rectangle with double-struck vertical edges.

Flowcharts are helpful for:

1. Aiding understanding of relationships among different process steps
2. Collecting data about a particular process
3. Helping with decision making
4. Measuring the performance of a process
5. Depicting the structure of a process
6. Tracking the process flow
7. Highlighting important steps and eliminating the unnecessary steps

Types of flowcharts

Different authors describe various types of flowcharts in different terms. These people include published experts such as Alan B. Sterneckert, Andrew Veronis, Marilyn Bohl and Mark A. Fryman.

Sterneckert, in his 2003 book "*Critical Incident Management*", listed four popular flowchart types, framed around the concept of flow controls rather than the flow itself:

- **Document Flowcharts:** These "have the purpose of showing existing controls over document-flow through the components of a system. … The chart is read from left to right and documents the flow of documents through the various business units."
- **Data Flowcharts:** These show "the controls governing data flows in a system. … Data flowcharts are used primarily to show the channels that data is transmitted through the system rather than how controls flow."
- **System Flowcharts:** These "show the flow of data to and through the major components of a system such as data entry, programs, storage media, processors, and communication networks."
- **Program Flowcharts:** These show "the controls placed internally to a program within a system.

How to plan and draw a basic flowchart

1. **Define your purpose and scope.** What do you hope to accomplish? Are you studying the right things with appropriate start and end points to accomplish that purpose? Be detailed enough in your research but simple enough in your charting to communicate with your intended audience.

2. **Identify the tasks in chronological order.** This might involve talking to participants, observing a process and/or reviewing any existing documentation. You might write out the steps in note form, or begin a rough chart.
3. **Organize them by type and corresponding shape,** such as process, decision, data, inputs or outputs.
4. **Draw your chart,** either sketching by hand or using a program such as Lucidchart.
5. **Confirm your flowchart,** walking through the steps with people who participate in the process. Observe the process to make sure you haven't missed anything important to your purpose.