## Visio's Flowchart shapes

Visio comes with some shapes for use in flowcharts, over the years in the various forums there have been questions about what some of these shapes are for and how should they be used. The details of the shapes has changed over the various versions of Visio, here we discuss the shapes that are in Visio 2003, Visio 2007 and Visio 2010.

## General comments

#### How to find these shapes

When you start a new Visio diagram of type Flowchart the Basic Flowchart Shapes stencil is opened automatically, otherwise you can open this stencil using:  
(Visio 2003/2007): menu File -> Shapes -> Flowchart -> Basic Flowchart Shapes  
(Visio 2010): Shapes Window -> More Shapes -> Flowchart -> Basic Flowchart Shapes  
  
As usual there are metric and US customary units versions, the filenames for each being BASFLO\_M.VSS and BASFLO\_U.VSS.

#### Shape text

Almost all of the shapes here should have text added to show what the shape is representing. This is usually done by double-clicking the shape but in some cases may have to be done with the Text Tool.

#### Connection points

All these shapes have connection points at appropriate places, except, of course, in Visio 2010 you can't even see them until you try to attach a connector to the shape.

#### Themes

Visio 2007/2010 onwards have "Themes" as a feature and all shapes in those versions are themes enabled.

## The shapes

#### Process

|  |  |
| --- | --- |
| process | This is the most basic shape in a flowchart; it may also be called a Task, Activity or Processing step. Here you would add text like, "increment widget count", "state = left 3 characters of data" or "initialise printer". |

#### Decision

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| --- | --- |
| decision | Without decisions a flowchart is not very interesting! Also called a Condition (or Conditional) it is used to make a choice, often a Yes/No or True/False but can also be used to show a choice of more than 2 options (a Case). Connectors normally enter a Decision shape from the top and exit from the bottom, right or left corners. The exiting connector will usually show the value of the tested condition, i.e. where a test is for "widget count > 15" there will be two exit connectors, one labelled True and one labelled False. |

#### Document

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| --- | --- |
| document | A rectangle with a wavy line bottom (to represent the edge of the paper) is used to show that some reference to a document is being made, this used to be a paper document but now it might be an electronic one. |

#### Data

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| --- | --- |
| data | This parallelogram shape is more normally called an Input or Output shape, used to read data or output data. |

#### Predefined process (Visio 2010 - Subprocess)

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| predefined process | More usually called a "Subroutine" or "Function" this shape is similar to a Process but has two extra vertical edges. "Predefined" is not a good description for this shape, it might be predefined, it might not, it might be defined later in the design process, with late or dynamic linking it might not exist at all! Visio 2010 - it appears that this shape has now changed name - to Subprocess. |

#### Stored data (Visio 2010 - External Data)

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| stored data | This shape, a rectangle with curved side edges, represents data storage, a general purpose shape that doesn't indicate how or where the data is stored. This shape has been renamed to External Data in Visio 2010. |

#### Internal storage

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| internal storage | Somewhat reminiscent of a core store type of shape this shape represents data stored internally, so use this to show data stored with internal memory. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Sequential data

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| --- | --- |
| sequential data | This was a common shape when mass data storage came in the form of paper tape and magnetic tape and had to be read sequentially. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Direct data (Visio 2010 - Database)

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| direct data | This shape, a representation of a magnetic drum memory, shows data that can be read in a random-access manner. This doesn't mean that the data is in anyway random, just that data can be read from any location at any time without having to read other data first (see Sequential data). This shape has been renamed to Database in Visio 2010. |

#### Manual input (Visio 2010 - Custom 1)

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| manual input | A rectangle with a sloping top (like the side view of a sloping desk) is used to show that input from the user is required. This shape has been renamed to Custom 1 in Visio 2010. |

#### Card (Visio 2010 - Custom 3)

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| --- | --- |
| card | This is a shape that was appropriate until the 1970s or early 80s but is no longer required (unless you use punched cards). Ignore it. This shape has been renamed to Custom 3 in Visio 2010. |

#### Paper tape

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| --- | --- |
| paper tapepaper tape | This is a shape that was appropriate until the 1970s or early 80s but is no longer required (unless you still use paper tape). Ignore it. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Display

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| display | Representing a CRT based display unit this shape is used to show data output on a screen. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Manual operation (Visio 2010 - Custom 2)

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| manual operation | A trapezoidal shape is used to show that some manual operation is required. This shape has been renamed to Custom 2 in Visio 2010. |

#### Preparation (Visio 2010 - Custom 4)

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| preparation | This is supposed to be used to show some operation in preparation for doing a Conditional test. This shape has been renamed to Custom 4 in Visio 2010. |

#### Parallel mode

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| parallel mode | Often called "Concurrent operation", Fork or Join this shape (two parallel lines) is used to indicate two or more simultaneous operations or processing paths. The Visio shape indicates that it should be used to join two shapes that are concurrent, but this is not standard nomenclature. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Loop limit

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| --- | --- |
| loop limit | This shape is supposed to be used to show the start and end of loops. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Terminator (Visio 2010 Start/End)

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| terminator | This is the shape that would normally be called Start or End. When used as a Start symbol it is quite useful to put a name into the shape to indicate the purpose of this part of the chart. Visio 2010 - maybe someone at Microsoft reads my scribblings! This shape has been renamed to Start/End. |

#### On-page reference

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| --- | --- |
| on page reference | A circle shape is used to show a link to another part of the page, there must be at least two of these shapes on the page, one (or more) with a connecting line coming in from the top and only one with a connecting line leaving from the bottom. The first are Goto shapes, the text within the shape indicating the destination; the second are Destination shapes. |

#### Off-page reference

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| off page reference | Used to indicate that flow now moves to another page within the document. This is a special Visio shape which invokes an add-on, when the shape is dropped on the page the add-on asks the user where the destination will be. If the document currently has only one page then you will be asked if you want to connect to a new page (defaults to "Page-2", if more that one page exists then you can select which page to connect to. Just clicking the OK button at this point creates two shapes, the one you just dropped and one on the destination page. These shapes are normally linked together; hover the mouse over one of the shapes and you will see the mouse cursor change to indicate that the shape contains a hyperlink, double-clicking the shape will take you to the destination of your off-page reference. The destination page and shape is now selected, double-click this and you will be returned to the original page and shape. The add-on gives you a few options:   1. Drop off-page reference shape on page: (normally on) this option turns controls dropping the shape on the destination page. This can be useful if all you need is to show is a destination page in general. 2. Keep shape text synchronized: (normally off). The shapes dropped on the page do not normally have any text. However, if this box is ticked then any text added to one box gets automatically added to the other. 3. Insert hyperlink on shape(s): (normally on) unticking this box stops the hyperlink being added to the shape(s). Not a very useful option.  Adding text to this shape If the shape has a hyperlink then you can't add text to the shape by the usual method of double-clicking the shape as double-clicking activates the hyperlink. Instead select the shape and use the Text Tool. This will highlight the shape's text and allow it to be edited. Turn off text editing by clicking the Pointer Tool. |

#### Flowchart shapes

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| --- | --- |
| flowchart shapes | This shape is four-shapes-in-one! Drop one of these on your page then right-click it, you will see a menu to allow you to select Process, Decision, Document or Data. There are four geometry sections in this shape; the menu enables/disables each section. This is an excellent example of how to create a clever shape of this type. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Auto-height box

|  |  |
| --- | --- |
| auto-height box | Nothing especially to do with flowcharts but useful anyway. Enter the text you want, you can change the shape's width and the height adjusts itself automatically to just nicely fill the box. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Dynamic connector

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| --- | --- |
| dynamic connector | A connector with straight lines 90° angles. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Line-curve connector

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| --- | --- |
| line curve connector | A curved connector. This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Control transfer

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| --- | --- |
| control transfer | Who knows what this is for! This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |

#### Annotation

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| annotation | Also know as a Comment, this shape is a holder for text that can be used to explain any aspect of the flowchart. This is a grouped shape, one part being the text container together with part of a box to bracket the text, and a connector type part that can be used to join the text area to another shape. This shape has a few interesting aspects that are worth investigating:   * Move endpoint: There are two of the handles, one at either end of the connector part of the shape. Let's refer to these two handles as the left and right-hand handles (this handedness can be changed as discussed below). The left-hand handle moves the end point of the connecting line, use this to glue the annotation line to another shape. If this handle is moved over to the right-hand side of the shape then the whole connector part as well as the bracket part of the shape will move to the right-hand side, and back to the left-hand side if the handle is moved back. The right-hand handle is used to move the annotation text area without disconnecting the left-hand handle from any connected shape. * Resize shape: At the right-hand end of the text area is a green handle, moving this allows the width of the text area to be changed. There appears to be no maximum size but the minimum can be set to very close to 0. As the width gets close to 0 the handle locks up and you will lose control of it. * Bracket Length: This yellow control allows the user to change the width of the horizontal part of the text bracket. The size of the bracket is limited to a minimum of zero and a maximum of the width of the text area, even though the control itself can be moved beyond this area.   This shape is no longer available in the Visio 2010 flowchart shapes but may be available elsewhere. |