

Choosing gates, Schematic Diagrams and Logic Gates Code

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Abstract: Schematic diagrams that express an output depending on the design and inputs involved. These logic gates have 3 or more inputs and an output. The first input is for the choice and the next inputs are for the choices. Other variations of the choosing gates may be established. Polygons are the symbols for the choosing gates: diamond for three inputs, pentagon for four inputs, hexagon for five inputs stage so on and so forth. A line is connected per vertex to represent inputs and outputs. This be used in logic, computer science and electrical and electronics industry. Also, in addition, there is an optional code that will perform a specified logic operation.

Keywords: Choosing, Codes, Logic Gates, Polygons, Schematic Diagrams

I. Introduction

There are many logic gates which are not, or, and, nor, xor, xnor, nand, ... Basically they have one or two inputs and could be added together to have the desired output. (Anonymous 2016a) The choosing gates are influenced by a computer flowchart symbol, diamond.

Conditional (or decision), represented as a diamond (rhombus). These typically contain a Yes/No question or True/False test. This symbol is unique in that it has two arrows coming out of it, usually from the bottom point and right point, one corresponding to Yes or True, and one corresponding to No or False. The arrows should always be labeled. More than two arrows can be used, but this is normally a clear indicator that a complex decision is being taken, in which case it may need to be broken-down further, or replaced with the "pre-defined process" symbol. (Anonymous 2016b)

There are inventions which includes a plurality of inputs. (Ku & Eaton 2004 &)
 This is an addition to the existing logic gates.

II. Technical Field

A	not input 1(opposite value)	E	or	I	xor
B	not input 2(opposite value)	F	and	J	xnor
C	not input 1 but input 2	G	nor		
D	not input 2 but input 1	H	nand		

Figure 1: Logic Gates Code

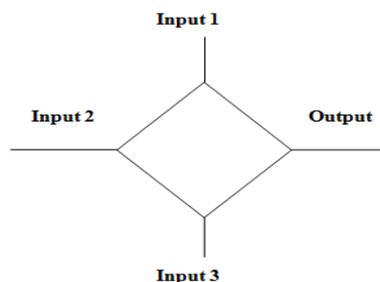


Figure 2: three-input choosing gate or the diamond choosing gate.

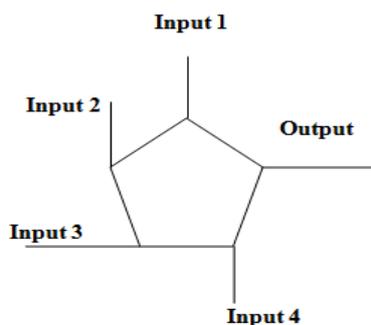


Figure 3: four-input choosing gate or pentagon choosing gate

How to Use the Choosing Gates Schematic Diagrams (Steps)

1. These schematic diagrams are used in logic, computer science and electrical and electronics industries. Primarily this be used in industry of digital electronics.
2. A choice of a choosing gate must be made and inputs are required.
3. The first input is for the choice; the next inputs are for the choices.

Figure 4: Truth Table for three inputs

Input 1	Input 2 = 0	Input 3 = 1	Output
0	0	0	0
1	0	0	0
0	1	0	1
1	1	0	0
0	0	1	0
1	0	1	1
0	1	1	1
1	1	1	1

Figure 5: Truth Table for four inputs

Input 1	Input 2 = A	Input 3 = B	Input 4 = C	Output
A	0	0	0	0
B	0	0	0	0
C	0	0	0	0
A	0	0	1	0
B	0	0	1	0
C	0	0	1	1
A	0	1	0	0
B	0	1	0	1
C	0	1	0	0
A	1	0	0	1
B	1	0	0	0
C	1	0	0	0
A	0	1	1	0
B	0	1	1	1
C	0	1	1	1
A	1	0	1	1
B	1	0	1	0
C	1	0	1	1
A	1	1	0	1
B	1	1	0	1
C	1	1	0	0
A	1	1	1	1
B	1	1	1	1
C	1	1	1	1

Note: For inputs more than 4, you can easily make a truth table by inserting tables making the necessary adjustments just following the steps.

Description

General Appearance (Schematic Diagrams are Drawings or Symbols.)
 Polygons are used. Diamond for three inputs, pentagon for four inputs, ...
 One line is connected to every vertex to represent the inputs and output.
 CODE (A code may be applied in the first input.)

III. Conclusion

A choosing gate schematic diagram having three inputs and an output, represented by a diamond with a line to each of its vertex, would be called the three-input choosing gate or the diamond choosing gate. Choosing gates schematic diagrams having four or more inputs and an output, represented by polygons with a line to each of its vertex, would be called depending on the inputs: four inputs are four-input choosing gate or pentagon choosing gate, five inputs are five-input choosing gate or hexagon choosing gate so on and so forth. There is an optional code which can be used to have a logic gate operation.

References

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