

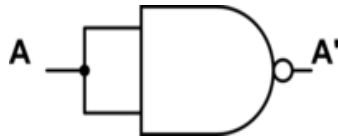
UNIVERSAL GATES

NAND and NOR logic gates are also known as universal gates. Any combinational and sequential logic can be implemented using NAND and NOR gates. Even the flip flop circuits are constructed using universal gates.

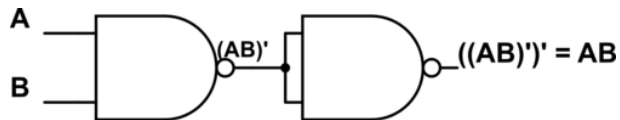
NAND

The equivalent operations of NOT, AND and OR gates using NAND gates are shown below

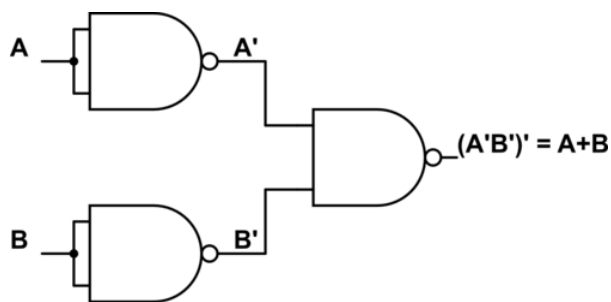
NOT using NAND



AND using NAND



OR using NAND



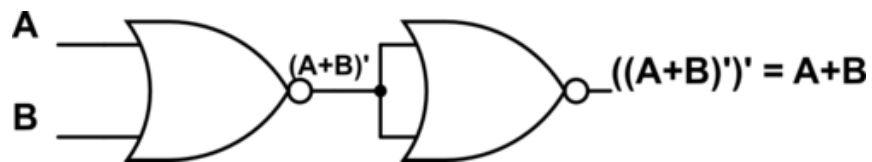
NOR

The equivalent operations of NOT, OR and AND gates using NOR gates are shown below

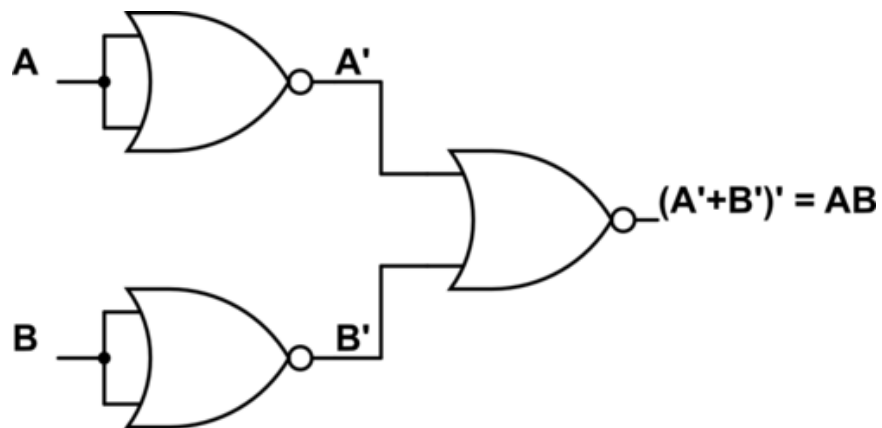
NOT using NOR



OR using NOR



AND using NOR



Source: <http://www.knowelectronics.org/universal-logic-gates-nand-nor/>