

CHAPTER 4

- **Analog:** Containing values that may take on any continuous value.
- **Binary numbering system:** A system of numbers made out of two values: 0 and 1.
- **Bistable environment:** An electronic setup that requires distinguishing two electric states from each other and maintaining the two separate states.
- **Bits:** Binary digits; a set of individual binary digits, each of which is 1 or 0.
- **Boolean expression:** An expression that evaluates to true or false and is constructed from true-false predicates and Boolean operations.
- **Boolean logic:** A logical system that describes rules for working with two values: true and false.
- **Circuit:** A collection of gates that together computes something.
- **Control circuits:** Circuits whose purpose is to control the order or choice of what a computer is doing.
- **Data compression:** A process of reducing the amount of space required to store large data files, with or without loss of detail.
- **Decoder:** A control circuit that turns on one of its outputs when given an input that matches it.
- **Digitize:** To transform analog data into a digital format.
- **Hardware design:** The process of designing circuits and other physical computer systems.
- **Magnetic core:** A form of memory storage from the past that used small iron disks to generate magnetic fields in response to electric currents.
- **Mantissa:** The base value of a decimal number written in scientific notation.
- **Multiplexor:** A control circuit that selects one of its input values to pass through to its output, depending on a code passed in along selector lines.
- **Pixel:** A single point sampled from a photographic image and stored in the digital format.
- **Sampling:** The process of reading values from analog data at regular intervals and using the sampled data to represent the analog version.
- **Sum-of-products algorithm:** A process for determining a circuit by starting with its truth table and then generating a Boolean expression for it.
- **Transistor:** A solid-state electronic device that may or may not let a current through and changes state in response to an electronic control input.
- **Truth table:** A table showing the truth values of a Boolean expression for every possible combination of inputs.