KEY TERMS

arithmetic and logic unit
basic input/output system (BIOS)
bus
bus interface unit
central processing unit (CPU)
clock
complex instruction set computer (CISC)
computer architecture
control unit
e-mail
execution unit
floppy disk
hard disk
hardware
input
instruction decode unit
instruction fetch unit
instruction set
integrated circuit
interact
Internet
megahertz
microprocessor
modem
motherboard
network
output
primary storage
random-access memory (RAM)
read-only memory (ROM)
reduced instruction set computer (RISC)
registers
secondary storage
Toolbox
volatile

SUMMARY

- The history of computers shows that calculating tools evolved from manually-operated devices, to more complex mechanical devices, to electromechanical devices, and finally to electronic computers.
- Today computers are everywhere. Some computers are designed to perform specific tasks and some are designed to be programmable general-purpose computers.
- The equipment that makes up a computer is called hardware. Each piece of hardware is involved in input, output, processing, or storage.
- Computer architecture is a term used to describe the way a computer is put together. RAM is the computer's primary storage for currently running programs and current data. ROM is memory that has data permanently stored on it. ROM is used by the computer to store startup procedures and data that the system needs to operate.
- The microprocessor does the computing and controls everything that goes on in the computer. The commands the microprocessor understands are called its instruction set.
- There are two categories of microprocessors: CISC and RISC. Typically CISC processors have a more complex instruction set. RISC processors have fewer instructions than CISC processors. RISC processors are generally faster than CISC processors.
- The bus is the system that connects the components of the computer. The bus is divided into power lines, data lines, address lines, and control lines.
- RAM is the computer's primary storage. Hard disks and floppy disks are usually used as secondary storage.
- Networks are groups of computers that are connected by some communications link that allows them to share data or resources. The Internet is a well-known network.

PROJECTS

PROJECT 1-1

Write a short report on one of the computers developed prior to 1960 or one of the people involved with the early computers.

PROJECT 1-2

Research and write a report about the abacus which includes a brief history and then focuses on how to use an abacus.

PROJECT 1-3

Write a report about one of the computers from the timeline in Section 1.1. Include the specifications of the computer (such as amount of RAM, speed, etc.) if available. Also, include information about the computer's place in history. What computers preceded the one upon which you are writing your report and what computers are descendants of it?

PROJECT 1-4

Answer the following questions about the computer you will be using to program.

1. What microprocessor is in the computer?
2. What is the computer's clock speed?
3. Is the microprocessor a CISC or RISC processor?
4. How much RAM does the computer have?
5. What size is the computer's hard drive?
6. What is the capacity of the floppy disk drive?

PROJECT 1-5

Go to a store which sells computer software or locate a current software catalog. Investigate the hardware requirements for different kinds of software. Document your findings and determine what kinds of programs generally require the most powerful computers and why.