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# Introduction to Computer Hardware

Introduction

Computer systems have been developed for a variety of functions and purposes. General-application desktop machines are the most common. They run a variety of software applications, such as word processing, financial management and data processing. They have all but replaced the typewriter as a necessary business tool. Computers are also present in automobiles, appliances, airplanes and all types of controllers and electromechanical devices.

Despite the differences among these computer systems, they all share fundamental components and design. The purpose of this chapter is to provide an understanding of the fundamental components of a computer system. A conceptual presentation regarding the elements of every computer system is made with sufficient detail to establish a foundation for these concepts. The concepts will then be extended to the HC11 hardware.

1.1 Elements of Every Computer

All computers are made up of a group of three fundamental elements: a central processor, memory, and input/output devices. Figure 1.1 shows a block diagram of a computer that includes these three elements. The examination of any kind of desktop computer, workstation or computer control system will reveal at least this minimum structure. Many computing devices will have multiple processors, multiple memory types, and numerous input/output devices. In many cases, the input/output devices contain all three elements as a unit. Video cards for personal computers, for example, always contain a video processor and memory in addition to their inherent input/output capability.
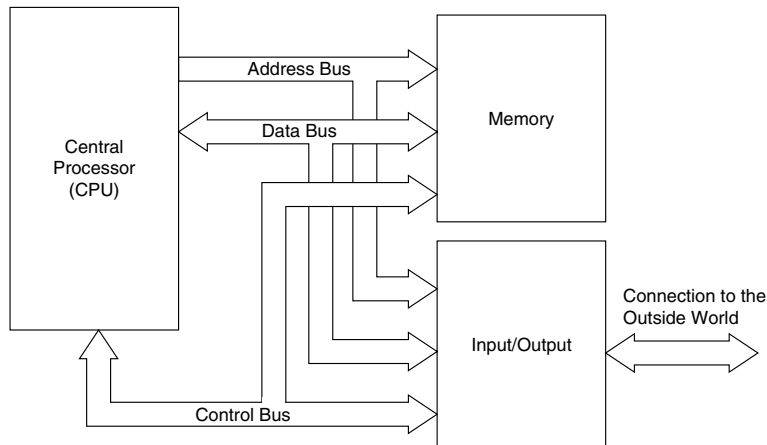
Figure 1.1 Fundamental Block Diagram of a Computer