Introduction to Embedded Systems

An Embedded system is a computer that has been built to solve only a few very specific problems and is not easily changed. In contrast, a general-purpose computer can do many different jobs and can be changed at any time with new programs for new jobs.

Modern embedded systems are often based on microcontrollers (i.e. CPUs with integrated memory and/or peripheral interfaces) but ordinary microprocessors (using external chips for memory and peripheral interface circuits) are also still common, especially in more complex systems.

Features of Embedded System

- Embedded systems are designed to do a specific task, unlike general-purpose computers.
- Many embedded systems must be able to do things in real-time - in a short amount of time (almost instantly from a human view).
- Many embedded systems must be very safe and reliable, especially for medical devices or avionics controlling airplanes.
- Starts very quickly. People don't want to wait a minute or two for their car to start or emergency equipment to start.
- It uses a special operating system (or sometimes a very small home-made OS) that helps meet these requirements called a real-time operating system, or RTOS.

- They run with limited computer hardware resources: little memory, small or non-existent keyboard and/or screen.
- Embedded systems are not always standalone devices. Sometimes they are built as a set, like the various parts of a car - the radio, the throttle control, the pollution control, etc.

Text Resource

- https://www.elprocus.com/basics-of-embedded-system-and-applications/

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In this module, we got a basic idea of embedded systems. In the next module, we will know what microprocessors and microcontrollers are and the basic difference between them.

Happy Learning!