## Details about embedded systems including different hardware platforms.(Shihab Ud Doula)

Embedded system can be defined as “A combination of computer

hardware and software, and perhaps additional mechanical or

other parts, designed to perform a dedicated function. In some cases,

embedded systems are part of a larger system or product, as in the case

of an antilock braking system in a car.”

Embedded systems are special purpose systems where the system is fully encapsulated by the device it controls. Such system performs one or more predefined tasks, usually with very specific requirements.

Essential Parts of an Embedded System

* Memory
* CPU
* Hardwired unit (Application of specific logic timers,A/D,D/A)
* Sensors
* Actuators

Possible Hardware Platforms

* General purpose microprocessor: CISC are Intel 386, RISC are IBM RS6000, EPIC is IA-64 (Intel Architecture-64), etc.
* Highly integrated microprocessor: Microcontrollers, microprocessors, and FPGAs
* Single-chip microcomputer: I/O, Rom, RAM, …
* Single-chip microcontroller: microcomputer with realtime clock, A/D and D/A converters, …
* Digital signal processor: Thermometer,Analog/digital clock, smartwatch.
* Mixed-signal processor: The system may be implemented in the form of a printed circuit board, hybrid microcircuit, or a single integrated circuit chip.

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