Embedded Systems

An **Embedded System** is a computer custom built to serve a specific purpose. Some examples of special purpose computers are cash registers, calculators, smart thermostats, and engine monitors in vehicles. A general purpose computer is one designed to perform general tasks such as tablets, laptops, desktops, workstations and serves. Recently, smart phones have crossed over from being special purpose computers to general purpose computers performing lots of tasks such as browsing the internet, playing songs, watching films, gaming and taking photos. They are no longer limited to making and receiving phone calls.

Although the general purpose computers are almost ubiquitous and they can solve many problems associated with embedded computers. Yet the need for specialized microprocessors has increased dramatically. General purpose computers are not necessarily best when it comes to specialized needs. They are often cumbersome, expensive and not well suited to handle specific needs. For example, a smart thermostat, a calculator or security sensors are best left to specialized computers.

Embedded systems can be classified into three categories:

- **Subsystems** - Is part of a larger system. For example, the temperature sensor in refrigerators and freezers, the rain sensor in windshield wipers or a motion detector in a light. As a standalone, independent system, the subsystems are of little value, its only when they are incorporated into a large system that the bcome valuable.
- **Standalone Systems**
- **Networked Systems**

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