Introduction to embedded systems

Embedded systems, microprocessors and microcontrollers

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Embedded systems are a little bit hard to define. This is because the applications for embedded systems has changed over time and has become very broad.

If we say that embedded systems are computer systems that make part of bigger electronic or mechanical systems, and that they have a dedicated function or purpose, how many devices come to your mind?

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- Wearable Devices

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Think like this: if embedded systems have a dedicated function or purpose, is a cellphone or a tablet an embedded system?

They may fundamentally have components that many other embedded systems have, but they, in contrast to themselves in the past, have not just the purpose of communicating people via voice calls or messages, they are also entretainment devices, and have many more functionalities.

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Well, the initial definition in fact is not really wrong. It's just broad, but not wrong. Here is the initial definition and some others that we can find in selected books on embedded systems.

- An embedded system is a special-purpose computer system designed to perform one or a few dedicated functions, often with real-time computing constraints. It is usually embedded as part of a complete device including hardware and mechanical parts.