

## 1) Single functioned

- An embedded system usually executes a specific program repeatedly.

- Example: A pager is always a pager.

- An desktop system executes a variety of programs like spreadsheets, word processors, video games with new programs added frequently.

- There are exceptions.

- One case is where an embedded system's program is updated with a newer program version.

### 1) Consumer Electronics

- Cell phones
- Pagers
- Digital cameras
- Camcorders
- Videocassette
- Recorders
- Portable video games
- Calculators
- Personal digital assistants

### 3) Office Automation

For machines

### 2) Home Appliances

- Microwave Ovens
- Answering machines
- Thermostats
- Home Security Systems
- Washing machines
- Lighting Systems

### 4) Business Equipment

- Cash Registers
- Curbside check-in

- Portable video games
- Calculators
- Personal digital assistants

### 3) Office Automation

- Fax machines
- Copiers
- Printers
- Scanners

### 4) Business Equipment

- Cash Registers
- Curbside check-in
- Alarm Systems
- Card Readers
- Product Scanners
- Automated teller machine

Scanned by CamScanner



## Embedded System Overview

- Computing Systems are Everywhere. Most of us think of desktop computers like PC's, Laptops, Mainframes, Servers. But there's another type of Computing System called as Embedded Computing System.
- Embedded computing Systems are Computing Systems embedded within electronic devices.
- Any Computing System other than a desktop computer.
- Embedded Systems are found in a variety of common electronic devices such as

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& Home Appliances

## 5). Automobiles

- Transmission Control
- Cruise Control
- Fuel injection
- Antilock brakes
- Active Suspension.

- The list of Embedded System goes on.

- By Seeing this we can say that any device that runs on electricity either already has or will soon have a computing system embedded within it.

Embedded Computers cost far less than desktop

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## Characteristics of Embedded Systems

Let us see few common characteristics of Embedded system that can be distinguished from other computing systems.

- 1) Single-functioned
- 2) Tightly constrained
- 3) Reactive & real time

- Commonly used metrics include .

1) NRE cost (non-recurring engineering cost):

- The one-time monetary cost of designing the System .  
financial cost is cost of capital

- Once the System is designed, any number of units can be manufactured without incurring any additional design cost, hence the term nonrecurring.

2) Unit cost:

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