LECTURE 2

Classification of Embedded

Topics to be covered

- Embedded Controller
- Classification

Classification of Embedded System

Small Scale Embedded Systems: 8-16 bit microcontroller, little h/w and s/w complexities and involve board level design.

Usually, ‘C’ is used for developing these systems. The software has to fit within the

memory available in the system.

2. **Medium Scale** Embedded Systems:

- 16 or 32 bit Microcontroller.DSP or RISC

- H/W and S/W complexities

3. **Sophisticated** Embedded Systems:

- Enormous h/w and s/w complexities.

- may need scalable processors, configurable

processors.

Features of the Embedded System

1. Constituents of the embedded computer:

h/w and s/w

2. Timeliness: The controller must be able to

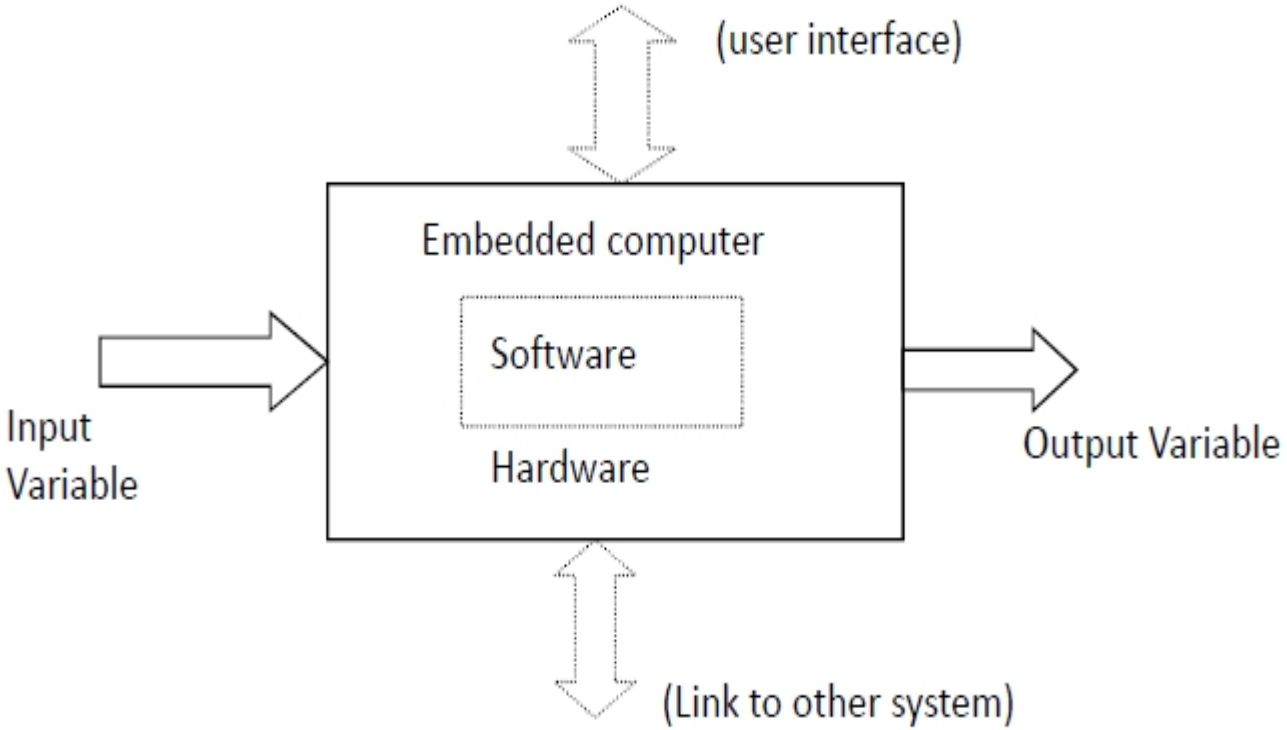
respond fast enough to keep its operation

within a safe region.

3. System interconnection

4. Reliability

Short architecture



Where are Embedded Systems used?

Signal processing systems

– Real-time video, DVD players, Medical equipment.

• **Distributed control**

– Network routers, switches, firewalls, mass transit systems, Elevators

• **“Small” systems**

– Mobile phones, pagers, home appliances, toys, smartcards, MP3 players,

PDAs, digital cameras, sensors, pc keyboard & mouse

• **Modern cars:** Up to 100 or more processors

– Engine control unit

– ABS systems (Anti Lock Brake systems)

– Emissions control

– Diagnostics and Security systems

– Accessories (doors, windows etc)