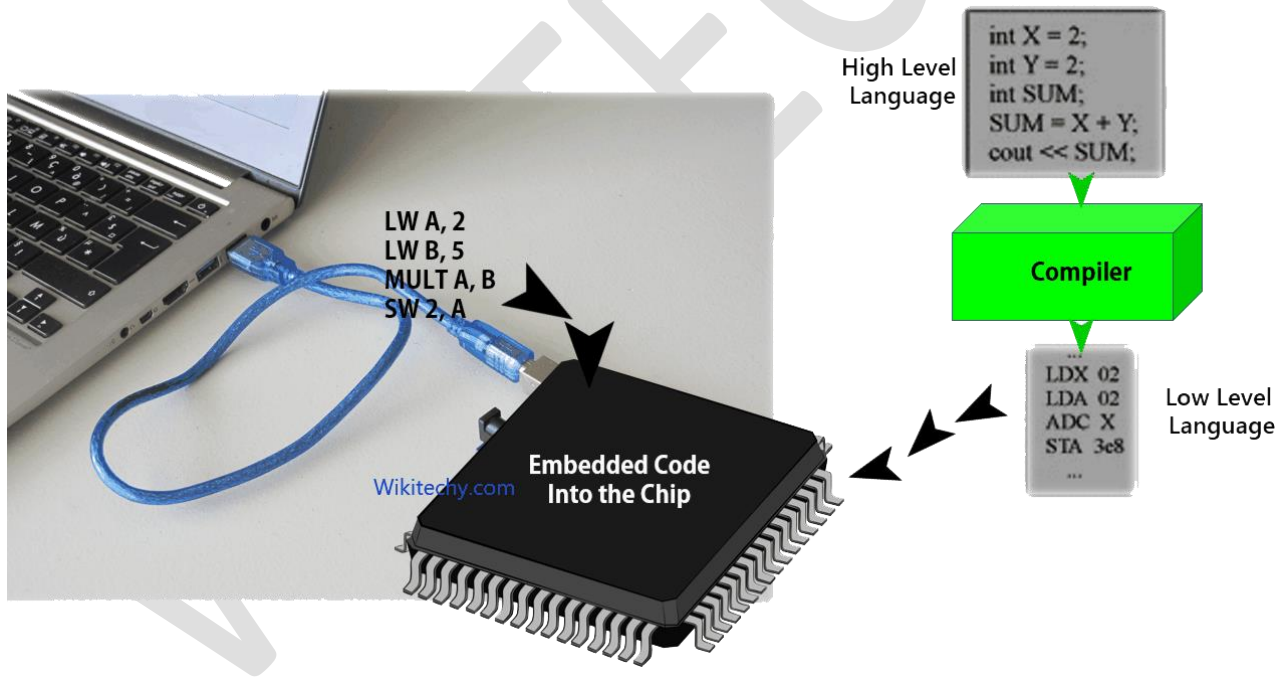# Introduction to Embedded Systems

- An embedded system is a system that has software embedded into computer-hardware, which makes a system dedicated for an application(s) or specific part of an application or product or part of a larger system.

- An embedded system is one that has dedicated purpose software embedded in computer hardware.

- It may be an independent system or a part of large system.

- Its software usually embeds into a ROM (Read Only Memory) or flash.

High Level Language

```
int X = 2;
int Y = 2;
int SUM;
SUM = X + Y;
cout << SUM;
```

LW A, 2
LW B, 5
MULT A, B
SW 2, A

Compiler

Embedded Code Into the Chip

Wikitechy.com

```
LDX 02
LDA 02
ADC X
STA 3c8
...
```

Low Level Language

- Program Flow and data path Control Unit (CU) — Includes a fetch unit for fetching instructions from the memory

- **Execution Unit (EU)** — Includes circuits for arithmetic and logical unit (ALU) and for instructions for a program control task, Data transfer instructions, halt, interrupt or jump to another set of instructions or call to another routine or sleep or reset

Processor

- A Processor is the heart of the Embedded System.

- Microprocessor and Microcontroller is must for an embedded system

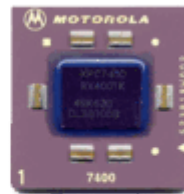## 1.General purpose microprocessor

For example, Intel 80x86, Sparc, or Motorola 68HCxxx

Intel 8086   Sparc   Motorola 68HCxxx

Embedded general purpose processor

- Fast context switching features, use of on-chip Compilers, for example, Intel® XScale™ Applications Personal Internet Client Architecture-based PDAs, cell phonesand other wireless devices.

Intel® XScale™   PDA   CellPhones and other wireless devices

For More Details Click Here:

https://www.wikitechy.com/tutorials/embedded-systems/introduction-to-embedded-systems