Microprocessor Applications

A microprocessor makes daily life easier because of its low cost, low power, small weight, and vast application in every field. There are several applications of microprocessors. Some of the important applications are:

Household Devices

* The **programmable thermostat** allows the control of temperature at homes. In this system, a microprocessor works with the temperature sensor to determine and adjust the temperature accordingly.
* High-end coffee makers, Washing machines, and radio clocks contain microprocessor technology.
* Some other home items that contain microprocessors are: microwaves, toasters, televisions, VCRs, DVD players, ovens, stoves, clothes washers, stereo systems, home computers, alarm clocks, hand-held game devices, thermostats, video game systems, bread machines, dishwashers, home lighting systems and even some refrigerators with digital temperature control.

Industrial Applications of Microprocessors

* Some industrial items which use microprocessors technology include: cars, boats, planes, trucks, heavy machinery, elevators, gasoline pumps, credit-card processing units, traffic control devices, computer servers, most high tech medical devices, surveillance systems, security systems, and even some doors with automatic entry.

Transportation Industry

* Automobiles, trains and planes also use microprocessor technology.
* Consumer vehicles-buses, cars, trucks -integrate microprocessors to communicate important information throughout the vehicle. E.g., navigation systems provide information using microprocessors and global positioning system (GPS) technology.

Computers and Electronics

* Microprocessor-drives technology is the brain of the computer. They are used in all type of computers ranging from microcomputers to supercomputers.
* A cell phone or mobile device executes game instructions by way of the microprocessor.
* VCRs, televisions and gaming platforms also contain microprocessors for executing complex instructions and tasks.

In Medicals

* Many medical devices, like an insulin pump, are typically controlled by a microprocessor. The microprocessors perform various functions, such as processing data from bio-sensors, storing measurements, and analyzing results.

Instrumentation

* Microprocessor is also very useful in the field of instrumentation. Function generators, frequency counters, frequency synthesizers, spectrum analyses and many other instruments are available, when microprocessors are used as controller.

Entertainment

* The use of microprocessor in entertainment equipment, toys and home entertaining applications is making them more useful and full of features.

Embedded Systems at Home

* A number of modern devices in the home are microprocessor based i.e. camera; washing machines; calculators; hi-fi systems; telephones; microwave ovens; burglar alarms etc. The input are usually simple numeric keyboards, sensors, buttons or while the output include lights, simple LCD screens displays, motors and relays, LEDs, buzzers etc.

Office Automation and Publication

* Microprocessor based system with software packages has changed the office environment. Microprocessors based systems are being used for spread sheet operations, word processing, storage etc.
* The Publication technology has revolutionized by the microprocessor.

Communication

* In communication the telephone industry is most important. In this industry, microprocessors are used in digital telephone sets, telephone exchanges and modem etc.
* The use of microprocessor in satellite communication, television, has made teleconferencing possible.
* Railway reservation and airline reservation system also uses microprocessor technology. WAN (Wide Area Network) and LAN (Local Area Network) for communication of vertical information through computer network.