**Assignment** 

**Course code : CSE231**

**Course title :** Microprocessor, Embedded Systems and IoT

**Topics : Applications of microprocessor**

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**Applications of microprocessor**

Microprocessor can be found in anywhere

The use of microprocessor toys entertainment equipment and application is making them more entertaining and full of Feature the use of microprocessor more widespread and popular.

What is Microprocessor?

A microprocessor is a Very Large Scale Integrated circuit (VLSI )that uses the architecture of the general purpose digital computer .

Microprocessors are based on Von Neumann model of a stored program computer .

The stored program computer, a Microprocessor’s program, is Stored in memory along with its data .

Uses of microprocessor-

The availability of low cost, low power and small weight , computing capability makes it useful in different applications. Now a days , a microprocessor based systems are used in instructions, automatic testing product, speed control of motors , traffic light control , light control of furnaces etc. Controller is a small computer on single Integrated circuit containing a processor 4 memory and Programmable input output peripherals.Uses of

Uses of microprocessor In various field are:

* In Home Appliances
* In Automotive Electronics
* In mobile electronics
* In building automation
* In metering

In Home Appliances

Some home items that May contain Microprocessor’s include televisions,VCRs,DVD players,microwaves,toasters,ovens,stoves,cloths, stereo system,home computer,Refrigeration, cooking ,washing , audio /video, mobile accessories, remote control,Home lighting system , video game system, alarm clock,bread machine and so on.

In Automotive Electronics

Application of power electronics in automotive applications plays a major role in controlling automotive electronics. Automotive electronics include modern electric power steering, HEV main inverter, central body control, braking system, seat control, and so on.

Automotive electronics are any are any electrically generated system used in road distance

automotive electronics organised from the need to control engines.

The first electronic pieces use to control engine and were referred To as control units (ECU)

A modern car may have up to 100 ECU’s and a commercial high wheel UP To 40

Automatic lights on/off and toggle high beams in cars (which I personally feel useful).

Automatic control of AC/ventilation etc…

Data Recorder for Automotive applications such as speed, location etc..(similar to flight blackbox)

In mobile electronics

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Smartphones have multiple microprocessors and microcontrollers in them. The main processor is a microprocessor with a bus to communicate with memory on separate chips (though often contained in the same IC package), and busses to communicate with the rest of the devices.

In the Snapdragon processor, it includes multiple CPU cores, GPU, GPS, etc. Apart from that, Qualcomm processor is mostly embedded in devices of various systems, including Google, Android mobile devices.

**In building automation**

A building automation system (BAS) uses interlinked networks of software and hardware to monitor and control a building's mechanical and electrical systems, including heating, ventilation and air-conditioning (HVAC), lighting, security and fire systems.

Building automation systems offer enhanced control of a building's various systems, including heating and cooling (HVAC), electrical, security and so on. These control systems vary in complexity depending on the nature of the building and the objective, and are customized for each situation.

Building automation system engineers usually need at least a four-year degree in engineering. Some employers accept engineers with prior job experience and an HVAC-related technical or computer degree.The most significant benefit of building automation is that it allows you to use energy efficiently. Building automation will achieve that through device-to-device communication. ... The devices in use will instantly communicate with each other to take control of processes to increase energy efficiency.

In metering

A Metering System is made up of items of Metering Equipment; voltage transformers, current transformers, Meters and Outstations, the wires and connections between each item and connections required to transfer metered data to the outside world (e.g. modems and communication lines).There are two types of Metering System; those which measure and record electrical energy flow for each half hour for Settlement (Half Hourly Metering Systems) and those which measure and record over longer periods of time, from which energy flows in each half hour can be estimated (Non Half Hourly Metering Systems).

Electromechanical induction type energy meters are universally used for energy measurements in homes and industries. Government and energy companies charge customers according to these readings. They are cheap to manufacture and very accurate