

Microcontroller Projects provide real time predictable response. Microcontroller is designed to control a particular system (automobile systems, embedded systems). Serve performance in critical roles, where they may need to act more like a Digital Signal Processor (DSP) with higher clock speeds and power consumption.

We assist research Scholars in implementing **Microcontroller based Projects** with best Customer Support. For more details contact us: +91 9790238391.

What is a Microcontroller?

- A microcontroller is a small computer on a single integrated circuit.
- Contains a processor core, memory, and programmable input/output peripherals.
- In some cases the compiler has programmer software inbuilt in it.

DOMAIN AREA:

- Embedded Systems.
- Robotics.
- Biomedical.
- Networking.



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Needs and Uses of Microcontroller based Projects.

- Utilizes four-bit expressions and works at clock rate frequencies.
- Used in embedded systems, machineries such as automobiles, telephones, and peripherals for computer systems.

STEPS Involved in Microcontroller Projects.

- Create a circuit design.
- Determine the hardware & software components to be used.
- Establish circuit connection.
- Analyze the program coding.
- Circuit drawing.
- Code dumping.
- Run simulation.

SOFTWARE:

- Compiler

REQUIREMENTS:

Languages: C,C++,Java, Actionscript, Assembler, BASIC

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TYPES of Microcontroller :

- Microcontroller 8051.
- Renesas Microcontroller.
- AVR Microcontrollers.
- PIC Microcontroller.
- ARM Microcontroller.

APPLICATIONS of Microcontroller Projects.

- Solar panels.
- Portable Devices(Mobile Phones, Camera)
- Monitoring devices.
- Computers (Modems and Keyboard).
- Home appliances (Washing machine, Microwave oven).

Sample IEEE Microcontroller Projects Topics.

SI	Top 50 2015 IEEE Microcontroller Projects Titles.
1	The Design of a Test & Development Board for the Training of PIC18F4550 Microcontroller.
2	Low cost and efficient ECG measurement system using PIC18F4550 microcontroller.
3	8.3 A 10.5µA/MHz at 16MHz single-cycle non-volatile memory access microcontroller with full state retention at 108nA in a 90nm process.
4	Embedded Microcontroller Memories: Application Memory Usage.
5	Microcontroller based Tabla tuning system.

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6	Performance analysis of microcontroller and FPGA based Signal Processing a case study on FIR filter design and implementation.
7	Application of wireless, embedded microcontroller circuit for a semi-active above-knee prosthesis with pneumatic cylinder.
8	Design & development of microcontroller based programmable ramp generator for AC-DC converter for simulating decay power transient in experimental facility for nuclear power plants.
9	Software-related EMI test pattern auto-generation for 2-stage pipeline microcontroller.
10	Period measurement with an ARM microcontroller.
11	Microcontroller based application prototyping using domain specific modeling.
12	Reducing energy consumption in microcontroller-based platforms with low design margin co-processors.
13	Design of near-threshold microcontroller for wireless sensing applications.
14	A simple microcontroller based digitizer for differential inductive sensors.
15	Modernization of lignite feeder control system using microcontroller with multidrop mode.
16	A comparison between FFT and MCT for period measurement with an ARM microcontroller.
17	Development of a microcontroller based electrical impedance tomography system.
18	A method for feedback delay measurement using a low-cost Arduino microcontroller: Lesson learned: Delay influenced by video bitrate and game-level.
19	Mind-controlled wheelchair using an EEG headset and arduino microcontroller.
20	Microcontroller-based B-Spline Neural Position Control for Voice Coil Motors.
21	Testing 90 nm microcontroller SRAM PUF quality.
22	Immunity Measurement and Modeling of an ADC Embedded in a Microcontroller Using RFIP Technique.
23	Operation and control of a three-level medium-voltage NPC inverter with TI F28M35 microcontroller.
24	Wireless measurement of thermocouple with microcontroller.
25	0.39-V, 18.26- μ W/MHz SOTB CMOS Microcontroller with embedded atom switch ROM.
26	DD1: A QDI, Radiation-Hard-by-Design, Near-Threshold 18uW/MIPS Microcontroller in 40nm Bulk CMOS.
27	Automation of regenerative compressor cooling system using microcontroller.
28	Development of an educational tool for control engineering.
29	Cross-Spectrum Analysis-Based Scheme for Multiple Power Quality Disturbance Sensing Device.
30	Novel Approach to Protect Advanced Encryption Standard Algorithm Implementation Against Differential Electromagnetic and Power Analysis.
31	Electronic bio-chemistry analyzer for estimation of biochemical constituents of blood.
32	Micro-controller based frequency to digital converter for interfacing frequency output sensors.

33	The Designing of an Educational Solar Panel That Can Be Controlled in Different Ways.
34	Multi-purpose auto-programmable reconfigurable embedded system architecture.
35	The Design of Training Elevators for Effective Learning.
36	Open source hardware based automated gardening system using low-cost soil moisture sensor.
37	A 9-dof robotic hand Teleoperation system using haptic technology.
38	Intelligent Dimming LED for Moonlight Simulation.
39	Design for visually impaired to work at Industry using RFID technology.
40	System for highlighting the emotional states, used in assessing the teaching methods.
41	Low-cost and reliable wireless communication system for monitoring a photovoltaic source.
42	Real-time wireless vibration monitoring system using LabVIEW.
43	Photosensitive security system for theft detection and control using GSM technology.
44	Implementation of a space vector modulation for an advanced ANPC three level inverter.
45	Hardware-software complex for studying of digital filters.
46	MEMS accelerometer based system for motion analysis.
47	Experimental set up for generating database for recognition of aircraft images.
48	Circuits and signal conditioning for a peanut-drying monitoring system.
49	Autonomous RFID sensor platform with highly efficient energy harvesting circuit.
50	Web-based online embedded door access control and home security system based on face recognition.