

Contents :

- **Introduction to PIC Microcontrollers**

- PIC architecture and device families
- Development tools and programming methods
- Project overview and hardware requirements

- **Getting Started**

- Breadboarding techniques
- Electronic components and test equipment
- Safety and laboratory practice

- **Electronics Fundamentals**

- Basic electronic circuits
- Reading datasheets
- Component selection

- **Programming PIC Microcontrollers**

- Assembly language fundamentals
- C programming basics
- PICBASIC programming
- Program structure and firmware development

- **Timers, Interrupts and Digital I/O**

- Input/output ports
- Timing functions
- Interrupt handling

- **Sensor and Alarm Projects**

- People sensor
- Silent alarm
- Night buzzer
- Detection and monitoring circuits

- **Audio and Signal Projects**

- Sound super-compressor
- VU meter
- Tone generators
- Beeper circuits

- **LED and Display Projects**

- RGB LED fader
- Indicators and displays
- Driver circuits

- **Communication Projects**

- Serial communication
- Device interfacing
- Networking between PIC systems

- **Measurement and Control Projects**

- Distance measurement
- Radar-style sensing applications
- Signal-processing examples

- **Advanced Applications**

- Power management
- Reliability improvements
- Firmware optimization

- **Troubleshooting and Debugging**

- Diagnostic methods
- Testing procedures
- Error correction techniques

- **Appendices**

- Schematics
- Breadboard layouts
- Parts lists
- Reference tables
- Datasheet references and further reading.