

8051 MICROCONTROLLER & EMBEDDED SYSTEMS

Rajiv Kapadia



This book covers the basics of the 8051 architecture & embedded systems. It discusses the port system, the registers and the use of stack, external and internal memory management. The book will be useful for undergraduate students, and can be used by teachers as a quick reference source for practical applications, laboratory assignments, teaching aids, and exam questions.

Rajiv Kapadia obtained BE (Electrical) degree from Sardar Patel College of Engineering, and his MS (Electrical) and PhD (Electrical) degrees from the University of Oklahoma. He has been teaching at Minnesota State University, Mankato since 1984. Prior to this, he was Professor and Head, department of Electrical Engineering, Mahatma Gandhi Memorial College of Engineering and Technology, Mumbai.

KEY FEATURES

- Each chapter includes review & summary sections. These two sections will be useful to the students and teachers as well.
- Each chapter in the book deals with practical applications that show how a particular subsystem of the microcontroller is used in a real application.
- Students can complete the laboratory assignments with minimal guidance from the instructor. These assignments will show the students the important concepts that are covered.
- All the important topics are brought together in the last chapter, which covers the subject in detail.

CONTENTS

1. Binary Arithmetic and the Number System
2. The Architecture of the 8051 Microcontroller
3. The Assembly Language for the 8051 Microcontroller
4. Logical Instructions and Operations
5. The Interrupt System
6. The Counter/Timer subsystem in the 8051
7. Serial Data Communication
8. The Ports and the Memory
9. Embedded Systems and Real Time Operating Systems