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Nota di contenuto	Cover; Copyright; Credits; About the Author; About the Reviewers; www.PacktPub.com; Table of Contents; Preface; Chapter 1: Powering on Arduino; Selecting the right Arduino; A brief history of Arduino; Introducing the different versions of Arduino; Arduino Uno R3; Arduino Mega 2560 R3; Choosing the Arduino Mega; Arduino Due; Arduino Micro; Adafruit FLORA; Adafruit Gemma; Adafruit Trinket; Other options with the Arduino; Powering up the Arduino; Unveiling your Arduino; Connecting to the Arduino; Installing the FLORA IDE; Summary; Chapter 2: Getting Started with the Arduino IDE Using a Windows machine to develop with ArduinoRunning the IDE for Uno; Setting the IDE to your board; Selecting the proper COM port; Opening and uploading a file to Arduino; Running the IDE for Mega; Running the IDE for the Adafruit FLORA; Installing the Adafruit drivers; Selecting the Adafruit boards; Selecting the COM port; Coding an LED flash on the FLORA; Using a Mac to develop using Arduino; Summary; Chapter 3: Simple Programming Concepts Using the Arduino IDE; Creating, editing, and saving files on the Arduino; Basic C programming on Arduino; Basic programming constructs on Arduino The if statementThe for statement; Summary; Chapter 4: Accessing the GPIO Pins; The GPIO capability of Arduino; The first external hardware

connection; The Arduino IDE and LED code; Summary; Chapter 5: Working with Displays; A simple serial display; Enabling the serial display in the IDE; Connecting a display using the SPI interface; Enabling the SPI display in the IDE; An LCD shield; Enabling the LCD display in the IDE; Summary; Chapter 6: Controlling DC Motors; The basics of DC motor; Connecting a DC motor directly to Arduino; Using Arduino code to control the speed of the DC motor
Connecting a DC motor using an H-bridge and ArduinoUsing Arduino code to control the direction of the DC motor; Controlling the DC motor using a shield; The Arduino code for the DC motor shield; Summary; Chapter 7: Controlling Servos with Arduino; The basics of a servo motor; Connecting a servo motor directly to Arduino; Controlling the servos with a program; Connecting a servo motor shield to Arduino; Controlling the servo motor shield with a program; Summary; Chapter 8: Avoiding Obstacles Using Sensors; An overview of the sensors; Sonar sensors; Infrared sensors
Connecting a sonar sensor to ArduinoAccessing the sonar sensor from the Arduino IDE; Connecting an IR sensor to Arduino; Accessing the IR sensor from the Arduino IDE; Creating a scanning sensor platform; Summary; Chapter 9: Even More Useful Sensors; Connecting a digital compass to Arduino; Accessing the compass from the Arduino IDE; Connecting an accelerometer/gyro to Arduino; Accessing the accelerometer from the Arduino IDE; Connecting an altimeter/pressure sensor to Arduino; Accessing the altimeter/pressure sensor from the Arduino IDE; Summary
Chapter 10: Going Truly Mobile - Remote Control of Your Robot

Sommario/riassunto

This book is for anyone who has been curious about using Arduino to create robotic projects that were previously the domain of research labs of major universities or defense departments. Some programming background is useful, but if you know how to use a PC, you can, with the aid of the step-by-step instructions in this book, construct complex robotic projects that can roll, walk, swim, or fly.
