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Nota di contenuto	Front Cover; Title Page; Copyright Page; Table of Contents; Preface; Part 1: Essentials; Chapter 1. Introduction; 1.1 Using MATLAB; 1.1.1 Arithmetic; 1.1.2 Variables; 1.1.3 Mathematical functions; 1.1.4 Functions and commands; 1.1.5 Vectors; 1.1.6 Linear equations; 1.1.7 Demo; 1.1.8 Help; 1.1.9 Additional features; 1.2 The MATLAB Desktop; 1.3 Sample Program; 1.3.1 Cut and paste; 1.3.2 Saving a program: script files; 1.3.3 A program in action; Summary; Chapter Exercises; Chapter 2. MATLAB Fundamentals; 2.1 Variables; 2.1.1 Case sensitivity; 2.2 The Workspace 2.2.1 Adding commonly used constants to the workspace2.3 Arrays: Vectors and Matrices; 2.3.1 Initializing vectors: Explicit lists; 2.3.2 Initializing vectors: The colon operator; 2.3.3 The linspace function; 2.3.4 Transposing vectors; 2.3.5 Subscripts; 2.3.6 Matrices; 2.3.7 Capturing output; 2.4 Vertical Motion Under Gravity; 2.5 Operators, Expressions, and Statements; 2.5.1 Numbers; 2.5.2 Data types; 2.5.3 Arithmetic operators; 2.5.4 Operator precedence; 2.5.5 The colon operator; 2.5.6 The transpose operator; 2.5.7 Arithmetic operations on

arrays; 2.5.8 Expressions; 2.5.9 Statements
 2.5.10 Statements, commands, and functions
 2.5.11 Formula vectorization; 2.6 Output; 2.6.1 The disp statement; 2.6.2 The format command; 2.6.3 Scale factors; 2.7 Repeating with for; 2.7.1 Square roots with Newton's method; 2.7.2 Factorials!; 2.7.3 Limit of a sequence; 2.7.4 The basic for construct; 2.7.5 for in a single line; 2.7.6 More general for; 2.7.7 Avoid for loops by vectorizing!; 2.8 Decisions; 2.8.1 The one-line if statement; 2.8.2 The if-else construct; 2.8.3 The one-line if-else statement; 2.8.4 elseif; 2.8.5 Logical operators; 2.8.6 Multiple ifs versus elseif; 2.8.7 Nested ifs
 2.8.8 Vectorizing ifs? 2.8.9 The switch statement; 2.9 Complex Numbers; 2.10 More on Input and Output; 2.10.1 fprintf; 2.10.2 Output to a disk file with fprintf; 2.10.3 General file I/O; 2.10.4 Saving and loading data; 2.11 Odds and Ends; 2.11.1 Variables, functions, and scripts with the same name; 2.11.2 The input statement; 2.11.3 Shelling out to the operating system; 2.11.4 More Help functions; 2.12 Programming Style; Summary; Chapter Exercises; Chapter 3. Program Design and Algorithm Development; 3.1 The Program Design Process; 3.1.1 The projectile problem; 3.2 Structure Plan Examples
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 5.1.3 Avoiding infinity

Sommario/riassunto

The essential guide to MATLAB as a problem solving tool This text presents MATLAB both as a mathematical tool and a programming language, giving a concise and easy to master introduction to its potential and power. The fundamentals of MATLAB are illustrated throughout with many examples from a wide range of familiar scientific and engineering areas, as well as from everyday life. The new edition has been updated to include coverage of Symbolic Math and SIMULINK. It also adds new examples and applications, and uses the most recent release of Matlab. · New chapters on S
