

Contents

Chapter 1 The Windows of the Desktop	1
1.1 Windows Properties	3
1.2 The Help Browser	10
1.3 The Editor	12
Chapter 2 A Preliminary Approach to Data and M-files	15
2.1 Data Types	17
2.2 Constants, Variables and Names	19
2.3 Data Properties	20
2.4 Examples	21
2.5 M-files	28
Chapter 3 Scripts and Functions as M-files	31
3.1 The M-file	33
3.2 The Script	34
3.3 The Anonymous Function	36
3.4 Examples of Anonymous Function	38
3.5 The Function: Basic Syntax	41
3.6 The Local Workspace of a Function	45
3.7 The Types of Functions: Primary, Subfunction and Nested	48
Chapter 4 Numerical Arrays	53
4.1 Creating an Array	55
4.2 Specifying a Part of an Array	59
4.3 Built-in Arrays	63

4.4 Expanding or Diminishing Size of an Array	64
4.5 Changing the Shape of an Array	67
4.6 Shifting and Sorting an Array	71
4.7 Measuring an Array	74
4.8 The Numbers as Elements of an Array	79
4.9 The Simplest Arithmetic Operators and Operations	83
Chapter 5 Other Types of Arrays	85
5.1 Logical Types	87
5.1.1 <i>Basic logical functions</i>	87
5.1.2 <i>Logical operators</i>	88
5.1.3 <i>Relational operators</i>	89
5.1.4 <i>Other logical functions</i>	90
5.1.5 <i>Logical values in array indexing</i>	90
5.2 Characters and Strings	92
5.2.1 <i>Creating string arrays</i>	93
5.2.2 <i>Strings comparisons</i>	95
5.2.3 <i>Other functions relating string arrays</i>	97
5.3 Dates and Times	99
5.3.1 <i>Format conversions</i>	100
5.3.2 <i>Other date and time functions</i>	105
5.4 Structures	105
5.5 Cell Arrays	112
Chapter 6 The Figure Window for Graphics Objects	121
6.1 Figure, Root and Their Properties	123
6.2 The Functions SET, GET and GCF	127
6.3 Axes and UI Objects	129
6.4 Axes Related Functions	131
6.5 The LINE and TEXT Functions	136
6.6 The Objects Properties	142
Chapter 7 Plot 2-D and Image	153
7.1 Plot 2-D	155
7.1.1 <i>The objects hierarchy</i>	155
7.1.2 <i>The PLOT and SUBPLOT commands</i>	159
7.1.3 <i>Commands complementary to PLOT</i>	159
7.1.4 <i>Resize, print and export of a plot</i>	163

7.1.5 <i>Interactive control over graphical objects</i>	173
7.2 The Image Object	178
7.2.1 <i>Image as array</i>	178
7.2.2 <i>The image functions</i>	178
7.2.3 <i>Image types</i>	181
7.2.4 <i>Examples</i>	182
Chapter 8 Flow Control	191
8.1 The Programming Constructs	193
8.2 The Conditional Control <i>if</i>	194
8.3 The Conditional Control <i>switch</i>	197
8.4 The Loop Control <i>for</i>	199
8.5 The Loop Control <i>while</i>	203
8.6 The Loop Control <i>continue</i> and <i>break</i>	207
Appendixes	209
Appendix 1	
MATLAB Functions Categories	211
Appendix 2	
MATLAB Functions and Objects Properties	
List of functions (A)	215
List of functions (B - C)	219
List of functions (D - E)	226
List of functions (F - G)	232
List of functions (H - I)	238
List of functions (J - M)	245
List of functions (N - P)	250
List of functions (Q - S)	255
List of functions (T - Z)	265
Appendix 3	
Operators List	271
Appendix 4	
A Table of Special Ascii Codes	273
Index	275