

Table of Contents

Chapter 1. Introduction.....	1
Chapter 2. Problem Solving	4
2.1. Polya.....	4
2.2. Wickelgren	6
2.3. Our Problem-Solving Steps	7
2.4. Conclusions.....	9
Chapter 3. Design	11
3.1. Sequential Control Structure.....	12
3.2. Selection Control Structure.....	14
3.3. Iteration Control Structure	16
3.4. Combining the Control Structures	18
3.5. Top-Down Decomposition.....	20
3.6. Conclusions.....	22
3.7. Exercises	22
Chapter 4. Testing.....	24
4.1. Testing Sequential Control Structures	24
4.2. Testing Selection Control Structures	26
4.3. Testing Iteration Control Structures.....	29
4.4. Testing Combinations of Control Structures	32
4.5. Completing the Test Plan.....	35
4.6. Conclusions.....	36
4.7. Exercises	36
Chapter 5. Your First Ada Program	38
5.1. What Does an Ada Program Look Like?	38
5.2. Comments	39
5.3. Using Other Packages	40
5.4. Identifiers	40

5.5. Variables and Constants	41
5.6. Simple Input and Output	41
5.7. A Matter of Style.....	42
5.8. Putting It All Together	43
Chapter 6. Data Types, Variables, and Constants	46
6.1. What's a Data Type?.....	46
6.2. Common Data Types.....	47
6.3. Choosing Between Variables and Constants.....	50
6.4. Giving Variables a Value	51
6.5. Type Casting	53
6.6. Input/Output of Different Data Types	54
6.7. Graphical Input and Output.....	60
6.8. Putting It All Together With Text.....	61
6.9. Putting It All Together With Graphics	66
6.10. Common Mistakes	73
6.11. Exercises	74
Chapter 7. Procedures	75
7.1. Deciding Which Procedures to Use	76
7.2. Figuring Out Information Flow.....	78
7.3. Creating the Procedure Header	80
7.4. The Rest of the Procedure	82
7.5. Calling the Procedure.....	86
7.6. Parameters and How They Work	90
7.7. Putting It All Together With Text.....	91
7.8. Putting It All Together With Graphics	100
7.9. Common Mistakes	115
7.10. Exercises	116
Chapter 8: Selection	117
8.1. If Statements.....	117
8.2. Case Statements	123
8.3. Putting It All Together With Text.....	126
8.4. Putting It All Together With Graphics	141
8.5. Common Mistakes	154
8.6. Exercises	155

Chapter 9. Iteration.....	156
9.1. For Loops	157
9.2. Basic Loops.....	161
9.3. While Loops.....	164
9.4. Putting It All Together With Text.....	166
9.5. Putting It All Together With Graphics.....	175
9.6. Common Mistakes	201
9.7. Exercises	202
 Chapter 10. Arrays.....	 204
10.1. Defining Array Types and Declaring Array Variables.....	204
10.2. Accessing Elements of the Array	207
10.3. Arrays and For Loops - "Walking the Array"	208
10.4. Multi-Dimensional Arrays	212
10.5. Putting It All Together With Text.....	213
10.6. Putting It All Together With Graphics.....	231
10.7. Common Mistakes	252
10.8. Exercises	253
 Chapter 11. File IO.....	 254
11.1. File Variables	254
11.2. Opening a File for Reading	255
11.3. Getting Input From a File.....	256
11.4. Closing the File When You're Done	257
11.5. End_of_File and End_of_Line	258
11.6. Creating a File for Writing	260
11.7. Printing Output to a File.....	261
11.8. Putting It All Together With Text.....	262
11.9. Putting It All Together With Graphics.....	279
11.10. Common Mistakes	305
11.11. Exercises	307
 Chapter 12. Putting It All Together	 308
12.1. A Text-Based Tic-Tac-Toe Game.....	308
12.2. A Graphics-Based Tic-Tac-Toe Game.....	339

Chapter 13. Advanced Topics	385
13.1. Writing Your Own Packages	385
13.2. Enumeration Types	392
13.3. Using Records	395
13.4. Creating and Calling Functions.....	398
13.5. Overloading Procedures and Functions	399
13.6. Using Exception Handlers	402
Appendix A : Adagraph.....	405
A.1. Graphics Windows	405
A.2. A Color Type.....	407
A.3. Input Using Adagraph	407
A.4. Output Using Adagraph	411
A.5. Manipulating Pixels	418
A.6. Adagraph Quick Reference	419
Appendix B : CD-ROM	421
B.1. Installation	421
B.2. Examples	421
<i>Bibliography.....</i>	<i>422</i>
<i>Index</i>	<i>423</i>