

# C O N T E N T S

|          |                                                                                                                                                                                                      |     |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|          | <b>Preface</b>                                                                                                                                                                                       | ix  |
| <b>1</b> | <b>C Refresher</b>                                                                                                                                                                                   | 1   |
|          | Data Representation—Functions—Operators and Expressions—Control Flow Constructs—Arrays and Pointers—Structures and Unions—Storage Classes—Preprocessor Directives and Macros—Casts—Summary—Exercises |     |
| <b>2</b> | <b>The Run Time Environment</b>                                                                                                                                                                      | 47  |
|          | Program Areas—The Text Area—The Stack—The Data Area—The Heap—Putting It All Together—Summary—Exercises                                                                                               |     |
| <b>3</b> | <b>An Array of Choices</b>                                                                                                                                                                           | 112 |
|          | Pointer and Array Fundamentals—Pointer Expressions and Arrays—Multidimensional Arrays Revisited—Performance Pointers—Multidimensional Arrays at Run Time—Summary—Exercises                           |     |
| <b>4</b> | <b>A Closer Look at C</b>                                                                                                                                                                            | 209 |
|          | Sequence Guarantee Points—Right-Left Rule—Lvalues in Expressions—Fast Array Transfers—Passing Entire Arrays to Functions—Functions with Varying Arguments—Summary—Exercises                          |     |
| <b>5</b> | <b>C Debugging Techniques</b>                                                                                                                                                                        | 262 |
|          | C Preprocessor—ASCII and Hexadecimal Debug Display—Command Line Flags—Signals with Debug Output—Assertions—Selective Debug Print Statements—Customized Memory Allocators—Summary—Exercises           |     |

|          |                                                                                                         |            |
|----------|---------------------------------------------------------------------------------------------------------|------------|
| <b>6</b> | <b>A Memory Object Allocator</b>                                                                        | <b>321</b> |
|          | Project ATL—The Object Allocator—Implementing Dynamic Strings—Putting It All Together—Summary—Exercises |            |
| <b>A</b> | <b>The Standard C Compiler Under UNIX</b>                                                               | <b>363</b> |
|          | Compiler Options—Link Editor Options—Preprocessor Options—Compiler Debugging Options                    |            |
| <b>B</b> | <b>C Under Microport System V/AT</b>                                                                    | <b>375</b> |
|          | Memory Models—Other Features                                                                            |            |
| <b>C</b> | <b>C Under SCO XENIX System V</b>                                                                       | <b>383</b> |
|          | Memory Models—Function Calling Conventions                                                              |            |
| <b>D</b> | <b>Microsoft C 5.0 Compiler</b>                                                                         | <b>397</b> |
|          | Memory Models—ANSI C Features—Other Features                                                            |            |
| <b>E</b> | <b>Turbo C</b>                                                                                          | <b>419</b> |
|          | Memory Models—ANSI C Features—Low Level Support—Other Features                                          |            |
|          | <b>Index</b>                                                                                            | <b>437</b> |