

Chapter 1: Introduction and Review

Features of the C Programming Language.....	1
Program Structure.....	2
Program Stages.....	3
Syntax.....	4
Identifiers.....	5
Program Statements.....	7
Datatypes.....	8
Character (char).....	8
Short Integer (short).....	9
Integer (int).....	9
Long Integer.....	10
Floating Point (float).....	11
Double-Precision Floating Point (double).....	13
C Reserved Words.....	14
Pointers.....	15
Arrays.....	16
Structures.....	17
Declaring a Structure Type.....	18
Defining Structures.....	19
Initializing Structures.....	20
Functions.....	21
Function Breakdown.....	22
main() Function.....	23

Chapter 2: Preprocessor Techniques

Concepts.....	1
Macro Expansion.....	2
Preprocessor Convention and Syntax.....	3
C Preprocessor Commands.....	4
#define Command.....	5
Macros vs. Functions.....	7
Macro Substitution.....	8
Manifest Constants.....	9
Macros with Parameters.....	10
#undef Command.....	11
Conditional Compilation.....	12
Conditional Commands.....	13
#if and #endif Directives.....	13
#ifndef Command.....	14
Header and Other Include Commands.....	15
#include Command.....	16
Other Preprocessor Commands.....	18
#error Command.....	18
#line Command.....	19
#pragma Command.....	20
Message Pragma.....	22
Preprocessor Directives.....	23

Chapter 3: Data Types and Storage Classes

typedefs.....	1
Enumerated Sets.....	2
Unions and Bit Usage.....	3
Bit-Fields.....	5
Arrays.....	6
Structures.....	7
A Simple Structure.....	9
Declaring a Structure Type.....	10
Defining Structures.....	11
Initializing Structures.....	12
Referencing Structure Members.....	13
Self-Referential Structures.....	14
Moving through a List.....	16
Type Conversions and Casting.....	17
Implications of Type Conversion with Assignment Operator.....	18
Data Type Demotion.....	19
Void Data Type.....	20
const Specifier Variable Type.....	21
volatile Specifier Variable Type.....	22
Storage Classes.....	23
Lifetime/Visibility Specifiers.....	24
Storage Class Specifiers: auto.....	25
Storage Class Specifiers: static.....	26
Storage Class Specifiers: extern.....	27
Storage Class Specifiers: register.....	28
Scope.....	29
Visibility of External Variables.....	30

Chapter 4: Pointers, Arrays, and Structures

Storage Classes and Array Initialization.....	1
Pointers.....	2
Uses of Pointers.....	3
Declarations.....	4
Pointer Notations.....	5
Assignment and Arithmetic.....	7
Assignment of Pointers and Address.....	8
Precedence and Pointers.....	9
Pointer and Strings.....	10
String Function.....	11
Strings Initialized as Pointers.....	12
Pointer Strings versus Array Strings.....	13
Arrays of Pointers.....	14
Pointers to Whatever.....	15

Pointers to Functions.....	16
Multi-Dimensional Arrays.....	17
Storage.....	18
Structures and Pointers.....	19
Structure Referencing.....	20
Accessing Structure Members with the Dot Operator.....	21
Referencing Array Elements.....	22
Parameters and Returns.....	23

Chapter 5: Memory Management and Linked Lists

Memory Usage During Program Execution.....	1
Stacks.....	2
Allocating Memory.....	3
malloc() Routine.....	4
calloc() Routine.....	6
free() Function.....	7
realloc() Function.....	8
Dynamically Sized Arrays.....	9
Strategy of Dynamic Memory Allocation.....	10
Memory Allocation Program.....	11
Linked List.....	12

Chapter 6: Input/Output Processing

Files and Streams.....	1
I/O Functions.....	2
Available C Stream Routines.....	3
Opening a Stream.....	6
Predefined Stream Pointers.....	7
Predefined File Handles.....	8
Text versus Binary.....	9
File Pointers.....	10
File Structure.....	11
fopen() Function.....	12
Specifying Text or Binary.....	14
fclose()/fcloseall() Functions.....	15
freopen() Function.....	16
fflush() Function.....	17
fseek() Function.....	18
ftell() Function.....	20
rewind() Function.....	21
fread() Function.....	22
fwrite() Function.....	23
feof() Function.....	24
ferror() Function.....	25
clearerr() Function.....	26

Chapter 7: Standard Library Functions

General Facilities.....	1
Frequently Used C Library Functions.....	2
Additional Features.....	5
String Processing.....	6
C String I/O Library Functions.....	7
Useful String Related Functions.....	8
Character Processing.....	10
Memory/Buffer.....	11
Other Advanced Functions.....	13
Control and Miscellaneous.....	14

Chapter 8: Command Line Processing/Environment

main() Function.....	1
Argument Description.....	3
Rules for Parsing Command Line Arguments.....	4
Customizing Command Line Processing.....	7
getenv() Function.....	8
putenv() Function.....	9
system() Function.....	12

Chapter 9: Sparse Array Processing

Purpose and Function.....	1
Spreadsheets and Sparse Array Processing.....	2
Linked-List Approach to Sparse Arrays.....	3
Hashing Approach to Sparse Arrays.....	9
Choosing an Approach.....	17