



PROGRAMMING IN

C

SIR CRR COLLEGE FOR WOMEN' ELURU

005.133

VEN



17571 D

Dr. Yalla Venkateswarlu
Dr. K. Venkatasubramanian
Dr. Shameena Begum
Mr. P V Kishore Kumar
Mr. K V V Srinivas



(Scientific International Publishing House)

PROGRAMMING IN C

ACC NO
CALL NO

17571 D
005.13'3
VEN

FIRST EDITION

Authors

DR. YALLA VENKATESWARLU
DR. K. VENKATASUBRAMANIAN
DR. SHAMEENA BEGUM
MR.P.V. KISHORE KUMAR
MR.K.V.V. SRINIVAS



(SCIENTIFIC INTERNATIONAL PUBLISHING HOUSE)

TABLE OF CONTENTS

Chapter No	Contents	Page No
1	INTRODUCTION TO C PROGRAMMING	1
	1.1 Problem solving in C	1
	1.2 Flow Charts	3
	1.3 Pseudocode Solution	4
	1.4 Basic concepts in a C program	5
	1.4.1 Benefits and Features of C	5
	1.5 Character sets of C	6
	1.6 Tokens	7
	1.6.1 Keywords	7
	1.6.2 Identifiers	8
	1.6.3 Constants	9
	1.6.3.1 Integer constants	9
	1.6.3.2 Real constants	10
	1.6.3.3 Character constants	11
	1.6.3.4 String constants	12
	1.7 Data Types	12
	1.8 Variables	14
	1.9 Symbolic constants	16
	1.10 Program development environment	20
	1.11 Operators	27
2	DECISION STATEMENTS	43
	2.1 Introduction	43
	2.1.1 Simple if statement	43
	2.1.2 if - else statement	46
	2.1.3 if - else - if ladder statement	49
	2.1.4 switch () case statement	54
	2.1.5 Nested switch () case statement	56
	2.2 Type Conversion	59
	2.3 Loop Control Statements	60
	2.3.1 For loop	61
	2.3.2 Nested for loop	65
	2.3.3 While loop	65
	2.3.4 Do - While loop	68
3	ARRAYS AND STRINGS	71
	3.1 Arrays	71
	3.2 One Dimensional Array	71
	3.3 Searching and Sorting	75
	3.4 Two Dimensional Arrays	89

	3.5 Transpose of a Matrix	101
	3.6 Strings	105
	3.6.1 Reading Strings from Terminal	106
	3.6.2 Writing Strings to Screen	108
	3.7 Arithmetic Operations On Characters	110
	3.8 String Handling Functions	113
	3.9 Table / Array of Strings	119
4	FUNCTIONS, POINTERS AND STRUCTURES	125
	4.1 Function	125
	4.1.1 Components of a function	126
	4.2 Function Prototypes	132
	4.3 Parameter passing methods	142
	4.4 Recursion (or) Circular definition	146
	4.4.1 Need for implementing recursion	149
	4.5 Pointers	152
	4.6 Pointers Arithmetic	154
	4.7 Pointers and arrays	158
	4.8 Structures	161
	4.8.1 Declaration	161
	4.8.2 Structure variable declaration	162
	4.8.3 Initialization of Structure	166
	4.9 Type Def Declarations	169
	4.10 Copying and Comparing Structures	170
	4.11 Nested Structures	174
	4.12 Array of Structures	178
	4.13 Structure and functions	181
	4.14 Unions	186
	4.15 Storage Classes	188
5	File Management	193
	5.1 Introduction	193
	5.2 Buffers	193
	5.3 Using Files in C	193
	5.3.1 Declaring file pointer variable	194
	5.3.2 Opening a file	194
	5.4 File Mode	195
	5.5 Closing a file	196
	5.6 Reading data from files	197
	5.7 Writing data to files	202



CHAPTER 1

INTRODUCTION TO C PROGRAMMING

1.1 PROBLEM SOLVING IN C

Problem solving is a process that includes problem finding and problem shaping. In computer programming, problem solving is a systematic approach to find and implement a solution to a problem. For this the basic model of computation is used

Computation refers to the process of arriving at output from a given program, a problem, or a given decision. The process has to be logical and must follow step- by- step approach to arrive in a meaningful outcome.

Phases of basic model of computation are:

1. Defining the problem
2. Analyzing the problem
3. Designing a program
4. Coding a program
5. Testing a Program
6. Maintaining the program

Steps for program development:

A program can be developed by using 2 main approaches- algorithm and flowchart

ALGORITHM: is used to develop a program that follows a systematic approach to get desired output ie., step by step instructions

FLOW CHART: is graphical representation of the logic of the program.