Programming and Problem Solving

Rajani Adam

C PROGRAMMING
AND
PROBLEM SOLVING

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PREFACE

Programming is the art of expressing solutions to problems so that a computer can execute those solutions. This textbook **"C Programming and Problem Solving"** began as a set of lecture notes for a first-year student (Software Engineering) course in 2024. This book is designed for the course of all students of Engineering as per Pune and Solapur University.

The main purpose of this book students will be able to develop logic which will help them to create programs and applications in 'C' language. Also, by learning the basic programming constructs they can easily switch over to any other language in future.

Students will be able to understand the basic concepts of C programming language. To Enhance skill on problem solving by constructing algorithms. Students will be able to comprehend the general structure of the C program, concepts of variable, datatype, operator and be able to create a C program to demonstrate these concepts. Design and develop various programming problems using C programming concepts. To understand and use various constructs of the programming language such as conditionals, iteration. Demonstrate the use of strings and string handling functions. Apply skill of identifying appropriate programming constructs for problem solving. Able to Implement advanced C programming concepts like function, pointer, structure, and union etc. Understand the dynamics of memory using pointers. Able to understand the file handling using C Programming language. To understand the concept of macros and preprocessors. At last, describe the String and Bitwise Operators….

Objectives:

1. To Understand how to use programming in day-to-day Applications.
2. To understand the various steps in Program development.
3. To understand the basic concepts in C Programming Language.
4. To learn how to write modular and readable C Programs
5. To learn to write programs (using structured programming approach) in 'C' to solve problems.

To build efficient programs in "C" language essential for future programming and software engineering courses.

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Dear Students,

Nowadays, Computers are the dominant technology of the twenty-first century. Thus, programming and the development of software are fundamental activities in which many people across the globe are involved. The main purpose of selecting these techniques for non-IT students is to prepare them to work with IT specialists at their future jobs by instilling in them a constant knowledge of technical fundamentals. But as compared to IT students, learning C programming becomes difficult for non-IT students due to this their passing rate is low.

C programming is a powerful and versatile programming language that plays a significant role in software development. With its simplicity, efficiency, and wide range of applications, C has stood the test of time and continues to be a popular choice among programmers worldwide.

C programming cannot be overstated in the world of computer science and programming. As one of the oldest and most widely used programming languages, C has become the foundation for many modern programming languages.

C programming is a popular and widely used programming language. It is used in:

- Building Databases
- Designing Compilers
- Developing Operating Systems
- Graphical User Interface
- Game and Animation

"Education is the passport to the future,
for tomorrow belongs to those who prepare for it today."

Best of Luck!!!

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