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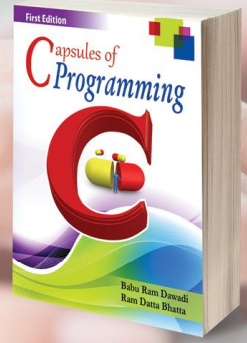

Capsules of C Programming Features

- *Brief theory explanation, easy for exam preparation.*
- *More than 500 solved examples of tricky questions.*
- *Solved examples include C programming old questions of all universities of Nepal*
- *Every example solution has output and its explanation.*
- *Included lab manual for 12 lab activities according to syllabus of all universities of Nepal*
- *Included C project development (Report writing) guideline with sample projects.*

Er. Ram Datta Bhatta, born in Baitadi Nepal, has completed his **bachelor's degree in Computer Engineering** in 2006 from Pulchowk Campus, Institute of Engineering (IOE), Tribhuvan University Nepal and **M.Sc. in Information System Engineering** in 2012 from Purbanchal University of Nepal. He is now holding the post of **IT officer** in civil service, Government of Nepal. He has eight years of experiences of teaching in the field of Computer Science and Engineering.

Er. Babu Ram Dawadi, Born in Gorkha Nepal, has completed his **bachelor's degree in Computer Engineering** in 2003 and **M.Sc. in Information & Communication Engineering** in 2008 from Institute of Engineering (IOE), Tribhuvan University Nepal and also completed **Masters of Public Administration (MPA)** from Public Administration Campus, Tribhuvan University. He is now holding the post of **Asst. Professor** at Department of Electronics and Computer Engineering, IOE, Central Campus, Pulchowk Nepal. He has eleven years of experiences of teaching in the field of Computer Science and Engineering.

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A Textbook of C Programming
Ram Datta Bhatta
Babu Ram Dawadi

Revised Edition

A Textbook of C Programming

Ram Datta Bhatta
Babu Ram Dawadi

Based on the new Syllabus of TU-CSCIT, TU-IOE, CTEVT, BCA, BIM, KU & PU

A Textbook of C Programming

A Course Book for B.E., B.I.T, B.C.A., B.B.A., B.I.M., & I.E. /+2 of Various Universities

Authors

Ram Datta Bhatta

Babu Ram Dawadi

VIDYARTHI PUSTAK BHANDAR

Publisher and Distributor

Bhotahity, Kathmandu

The Text book of C Programming, after gaining much popularity of this book in its older versions, it is now published with new and revised edition. The course content is fully updated with the latest course/syllabus of different universities of Nepal.

A Textbook of C Programming

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Letter of Appreciation

I am very much delighted with the skills and efforts of our permanent faculty Mr. Babu Ram Dawadi (IOE graduate) and the visiting faculty Mr. Ram Datta Bhatta (IOE graduate) to publish these books: **Capsules of C Programming** and **Text Book of C Programming**.

C programming is one of the compulsory subjects to be taught at the beginning semester of all streams of Bachelor of Engineering to provide basic concepts of programming for students.

The 'Text Book of C Programming' has simple explanations of relevant theory with a clear depiction of immediate examples for better understanding of terms. It also includes solved examples to get more practice for students to increase the confident in programming. Similarly, 'Capsules of C programming' has brief theory explanations and is more practice oriented. The authors have expertly written several tricky programming examples and explanations of each program output which I appreciate as well as I am sure, it helps students to understand the theory and improve programming knowledge.

In my experience, students always feel quite challenging in their programming subjects. Hence, these books provide best choice to the students and the lecturers of C programming to fulfill their needs.

I hope, the authors will continue their efforts in the academic activities for the best in the future. I wish them best of luck for their future endeavor.

Dr. Dibakar Raj Pant
Head of Department

PREFACE

The programming languages have become important to develop computer programs. It is essential to write efficient programs in order to solve all simple to complex problems. An efficient and powerful high level language like C helps to solve large and complex problems in reasonable time. Learning C as a programming language is the first step for those who want to enter the profession of computer programming. As the programming language C gives standard construct, it is easier to learn any other language if one has a clear concept of C.

This book **"A Textbook of C programming"** is written as a course book for B.E, B.I.T, B.C.A., B.B.A., B.I.M., and intermediate level of various universities of Nepal. This is a complete book in C programming language to assist students in learning process. The book focuses on theory as well as programming examples to facilitate students on programming using C.

The entire book is divided into fourteen chapters and appendices. Each chapter has been presented with detail explanation of relevant theory topics, immediate examples to illustrate the related theory, a number of solved examples and exercises to enhance analytical skills. It contains more than 200 solved examples which help to familiarize the readers with many problems and write programs to solve them. Chapter fourteen is the dedicated chapter which covers all about the programming concepts with FORTRAN. This FORTRAN programming concepts shall be helpful for all and especially to Institute of Engineering (IOE) students who have to study FORTRAN with C Programming as a course in their syllabus.

In addition with the syllabus chapters, it provides appendix for Frequently Asked Questions (FAQ) which will be beneficial to get clear concepts, guidelines in project development in C with sample projects, programming lab sheets suitably designed to perform lab activities for a maximum of 2.5 hours lab per week in the university colleges.

We proudly say that "TEXT BOOK OF C PROGRAMMING" has been published with its revised edition to meet the expectation of professors/lecturers as well as students and fulfill the course requirements of all the universities of Nepal and abroad.

Acknowledgement

We would like to express our sincere gratitude to Acme Engineering College, Sitapaila, where we found a platform and environment to start our career in teaching profession.

Many valued personnel have made constructive comments and direct/indirect supports in publishing the older versions of this book and for this revised edition too. We would like to acknowledge Mr. Parishwor Acharya (HOD, Acme Engg. Collge), Mrs. Ansu Ghimire, Mrs. Roshani Ghimire (lecturers of Purbanchal university), Mr. manish Rajbhandari, Mr. Subash Devkota (D2Hawkeye Services), Ramesh raj Subedi (IT Director of DOIT), Bibek Dahal (Nepal Telecom), Mr. Jayamangal Gupta (Director of Nagarjuna College), Mr. Ramesh Saud (Lecturer of Nagarjuna College), Mr. Bidur Dahal (Orchid College), Hari Aryal (SCT Network), for their valuable support in publishing the older versions of this book. We thank to Mr. Om Thapa for proof reading of the manuscript.

We are thankful to our professors Dr. Sashidhar Ram Joshi, Dr. Dinesh Kumar Sharma and Dr. Subarna Shakya and all respected GURUs/Seniors of Department of electronics and Computer Engineering, IOE Pulchowk Campus for showing us the beautiful path in our career development. Similarly thanks to Dr. Dibakar Raj Pant, Head of the Department of Electronics and Computer Engineering for his valuable supports. Of course, thankful to Nripadhoj Khadka, Senior Instructor and Deputy Director of CIT, Pulchowk Campus for his beautiful benchmarking nature to measure the knowledge and continuous support in our academic activities.

We are indebted to the family members for their support and encouragement in writing this book with revised edition. Without their support, this book would not have been published as a best revised edition. Thanks to the publisher Vidyarthi Pustak Bhandar" for publishing the book. Thanks to Sarita Thapa of Vidyarthi Pustak Bhandar for beautiful formatting of this book.

The authors will feel highly grateful to all readers for their constructive suggestions. The healthy criticism will help to improve the content of the book. Feedbacks and suggestions are welcomed at bhatta531@yahoo.com and baburd@ioe.edu.np.

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