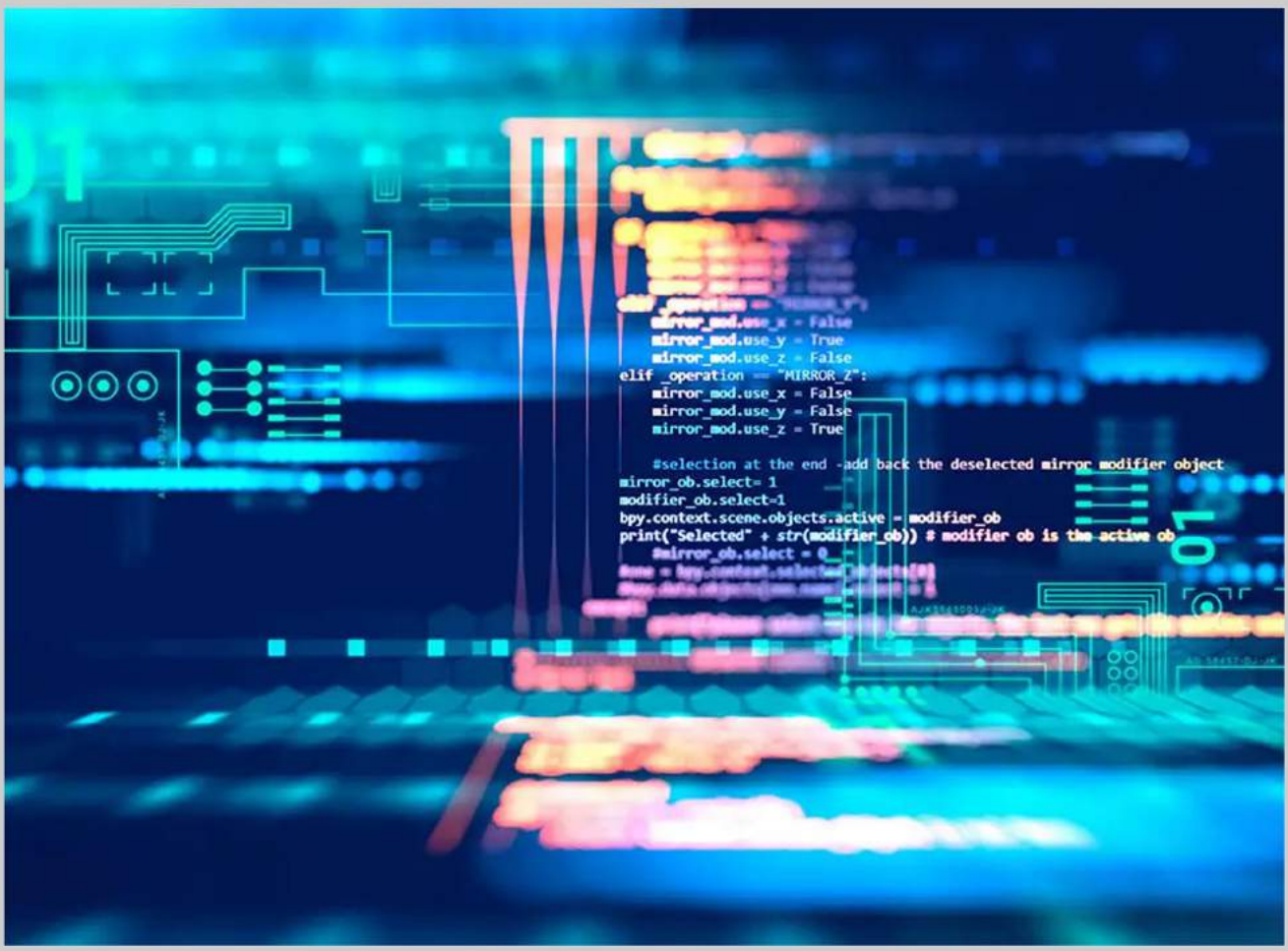
PROGRAMMING MADE EASY



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Programming Made Easy

First Edition

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Preface

Images and cartoons have been an effective medium for out expressing the thoughts and problem thinking. A kid starts learning from images and then slowly explores the real world. Similarly problem given to programmer becomes hard if it's not been visualize correctly. This book emphasizes the skills of learner through clear demonstration of hidden facts of problem through cartoon based dialogues. Thus it makes reading and learning interesting.

Programming is the art of expressing solutions to problems so that a computer can execute those solutions. Much of the effort in programming is spent finding and refining solutions. Often, a problem is only fully understood through the process of programming a solution for it.

This book is for someone who has never programmed before but is willing to work hard to learn. It helps you understand the principles and acquire the practical skills of programming using the C, C++, Java and Python programming languages. My aim is for you to gain sufficient knowledge and experience to perform simple useful programming tasks using the best up-to-date techniques. How long will that take? As part of a first-year university course, you can work through this book in a semester. If you work by yourself, don't expect to spend less time than that (maybe 12 hours a week for 12 weeks).

Three months may seem a long time, but there's a lot to learn and you'll be writing your first simple programs after about an hour. Also, all learning is gradual: each chapter introduces new useful concepts and illustrates them with examples inspired by real-world uses. Your ability to express ideas in code - getting a computer to do what you want it to do - gradually and steadily increases as you go along. I never say, "Learn a month's worth of theory and then see if you can use it."

To help the readers better understand the concepts that have been presented, we provide an extensive set of examples, figures and exercises. As a text book, this book is suitable for a wide range of students at the advanced undergraduate or graduate level. Since the students come to this subject with diverse backgrounds that may not include extensive knowledge of programming, our book requires no prerequisites - no programming knowledge is needed and we assume only a modest mathematical background.

Code can be beautiful as well as useful. This book is written to help you see that, to understand what it means for code to be beautiful, and to help you to master the principles and acquire the practical skills to create such code. To this end, the book was designed to be as self-contained as possible. Good luck with programming!

Acknowledgement

I'd (Dr. Ratnesh Prasad Srivastava) especially like to thank my colleague and co-author Dr. Lokendra Singh Umrao and Dr. Deepak Srivastava for encouraging me to tackle the task of teaching beginners long before I'd otherwise have felt comfortable doing that, and for supplying the practical teaching experience to make the course succeed. Without him, the first version of the course would have been a failure. We worked together on the first versions of the course for which this book was designed and together taught it repeatedly; learning from our experiences, improving the course and the book.

I would like to express my sincere gratitude to Prof. Alaknanda Ashok, present Dean, College of Technology, G.B. Pant University of Agri. & Technology, Pantnagar for her kind support and blessings during my service as an Assistant Professor.

Thanks to the students, teaching assistants, and peer teachers at University who directly and indirectly helped us construct this book. I would also like to thank to Dr. Ajit Kumar, Head, Information Technology Department for his continuous support and motivation during writing of this book. Thanks to the reviewers that Iterative International Publishers (IIP) found for me. Their comments, mostly based on teaching C, C++, Java and Python at the college level, have been invaluable.
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