

## A First Course In Programing C By

Authored by Roberto Ierusalimsky, the chief architect of the language, this volume covers all aspects of Lua 5---from the basics to its API with C---explaining how to make good use of its features and giving numerous code examples. (Computer Books)

This book offers a new approach to introductory scientific computing. It aims to make students comfortable using computers to do science, to provide them with the computational tools and knowledge they need throughout their college careers and into their professional careers, and to show how all the pieces can work together. Rubin Landau introduces the requisite mathematics and computer science in the course of realistic problems, from energy use to the building of skyscrapers to projectile motion with drag. He is attentive to how each discipline uses its own language to describe the same concepts and how computations are concrete instances of the abstract. Landau covers the basics of computation, numerical analysis, and programming from a computational science perspective. The first part of the printed book uses the problem-solving environment Maple as its context, with the same material covered on the accompanying CD as both Maple and Mathematica programs; the second part uses the compiled language Java, with equivalent materials in Fortran90 on the CD; and the final part presents an introduction to LaTeX replete with sample files. Providing the essentials of computing, with practical examples, A First Course in Scientific Computing adheres to the principle that science and engineering students learn computation best while sitting in front of a computer, book in hand, in trial-and-error mode. Not only is it an invaluable learning text and an essential reference for students of mathematics, engineering, physics, and other sciences, but it is also a consummate model for future textbooks in computational science and engineering courses. A broad spectrum of computing tools and examples that can be used throughout an academic career Practical computing aimed at solving realistic problems Both symbolic and numerical computations A multidisciplinary approach: science + math + computer science Maple and Java in the book itself; Mathematica, Fortran90, Maple and Java on the accompanying CD in an interactive workbook format

The Book of R is a comprehensive, beginner-friendly guide to R, the world's most popular programming language for statistical analysis. Even if you have no programming experience and little more than a grounding in the basics of mathematics, you'll find everything you need to begin using R effectively for statistical analysis. You'll start with the basics, like how to handle data and write simple programs, before moving on to more advanced topics, like producing statistical summaries of your data and performing statistical tests and modeling. You'll even learn how to create impressive data visualizations with R's basic graphics tools and contributed packages, like ggplot2 and ggvis, as well as interactive 3D visualizations using the rgl package. Dozens of hands-on exercises (with downloadable solutions) take you from theory to practice, as you learn: –The fundamentals of programming in R, including how to write data frames, create functions, and use variables, statements, and loops –Statistical concepts like exploratory data analysis, probabilities, hypothesis tests, and regression modeling, and how to execute them in R –How to access R's thousands of functions, libraries, and data sets –How to draw valid and useful conclusions from your data –How to create publication-quality graphics of your results Combining detailed explanations with real-world examples and exercises, this book will provide you with a solid understanding of both statistics and the depth of R's functionality. Make The Book of R your doorway into the growing world of data analysis.

Modern introduction to theory of coding and decoding with many exercises and examples.

Introduction to Stochastic Programming

Python Programming

A First Course in Computational Physics

Java Actually

A First Course in Optimization Theory

**Computers and computation are extremely important components of**

**physics and should be integral parts of a physicist's education. Furthermore, computational physics is reshaping the way calculations are made in all areas of physics. Intended for the physics and engineering students who have completed the introductory physics course, A First Course in Computational Physics, Second Edition covers the different types of computational problems using MATLAB with exercises developed around problems of physical interest. Topics such as root finding, Newton-Cotes integration, and ordinary differential equations are included and presented in the context of physics problems. A few topics rarely seen at this level such as computerized tomography, are also included. Within each chapter, the student is led from relatively elementary problems and simple numerical approaches through derivations of more complex and sophisticated methods, often culminating in the solution to problems of significant difficulty. The goal is to demonstrate how numerical methods are used to solve the problems that physicists face. Read the review published in Computing in Science & Engineering magazine, March/April 2011 (Vol. 13, No. 2) ? 2011 IEEE, Published by the IEEE Computer Society**

**Deep learning is often viewed as the exclusive domain of math PhDs and big tech companies. But as this hands-on guide demonstrates, programmers comfortable with Python can achieve impressive results in deep learning with little math background, small amounts of data, and minimal code. How? With fastai, the first library to provide a consistent interface to the most frequently used deep learning applications. Authors Jeremy Howard and Sylvain Gugger, the creators of fastai, show you how to train a model on a wide range of tasks using fastai and PyTorch. You'll also dive progressively further into deep learning theory to gain a complete understanding of the algorithms behind the scenes. Train models in computer vision, natural language processing, tabular data, and collaborative filtering Learn the latest deep learning techniques that matter most in practice Improve accuracy, speed, and reliability by understanding how deep learning models work Discover how to turn your models into web applications Implement deep learning algorithms from scratch Consider the ethical implications of your work Gain insight from the foreword by PyTorch cofounder, Soumith Chintala**

**Students explore the idea that thinking is a form of computation by learning to write simple computer programs for tasks that require thought. This book guides students through an exploration of the idea that thinking might be understood as a form of computation. Students make the connection between thinking and computing by learning to write computer programs for a variety of tasks that require thought, including solving puzzles, understanding natural language, recognizing objects in visual scenes, planning courses of action, and playing strategic games. The material is presented with minimal technicalities and is accessible to undergraduate students with no specialized knowledge or technical background beyond high school mathematics. Students use Prolog (without having to learn algorithms: "Prolog without tears!"), learning to express**

**what they need as a Prolog program and letting Prolog search for answers. After an introduction to the basic concepts, Thinking as Computation offers three chapters on Prolog, covering back-chaining, programs and queries, and how to write the sorts of Prolog programs used in the book. The book follows this with case studies of tasks that appear to require thought, then looks beyond Prolog to consider learning, explaining, and propositional reasoning. Most of the chapters conclude with short bibliographic notes and exercises. The book is based on a popular course at the University of Toronto and can be used in a variety of classroom contexts, by students ranging from first-year liberal arts undergraduates to more technically advanced computer science students.**

**Textbook and reference work on the application of C++ in science and engineering.**

**A First Course in BASIC Programming**

**A First Course**

**Learn Java Programming**

**Picturing Programs**

**A Modern Introduction to Programming**

**An Introduction to Computer Programming**

*The new edition of an introductory text that teaches students the art of computational problem solving, covering topics ranging from simple algorithms to information visualization. This book introduces students with little or no prior programming experience to the art of computational problem solving using Python and various Python libraries, including PyLab. It provides students with skills that will enable them to make productive use of computational techniques, including some of the tools and techniques of data science for using computation to model and interpret data. The book is based on an MIT course (which became the most popular course offered through MIT's OpenCourseWare) and was developed for use not only in a conventional classroom but in a massive open online course (MOOC). This new edition has been updated for Python 3, reorganized to make it easier to use for courses that cover only a subset of the material, and offers additional material including five new chapters. Students are introduced to Python and the basics of programming in the context of such computational concepts and techniques as exhaustive enumeration, bisection search, and efficient approximation algorithms. Although it covers such traditional topics as computational complexity and simple algorithms, the book focuses on a wide range of topics not found in most introductory texts, including information visualization, simulations to model randomness, computational techniques to understand data, and statistical techniques that inform (and misinform) as well as two related but relatively advanced topics: optimization problems and dynamic programming. This edition offers expanded material on statistics and machine learning and new chapters on Frequentist and Bayesian statistics.*

*This book is suitable for use in a university-level first course in computing (CS1), as well as the increasingly popular course known as CS0. It is difficult for many students to master basic concepts in computer science and programming. A large portion of the confusion can be blamed on the complexity of the tools and materials that are traditionally used to teach CS1 and CS2. This textbook was written with a single overarching goal: to present the core concepts of computer science as simply as possible without being simplistic.*

*Owen Bishop's First Course starts with the basics of electricity and component types, and introduces students to practical work almost straightaway. No prior knowledge of electronics is assumed. The approach is student centred with Self-Test features to check understanding, and numerous Activities suitable for practicals, homework and other assignments. New Multiple Choice Questions are incorporated throughout the text to aid student learning. Key facts, formulae and definitions are highlighted to aid revision, and*

*theory is backed up by numerous examples within the book. Each chapter ends with a set of problems which includes exam-style questions with numerical answers provided. This text is ideal for a wide range of introductory courses in electronics, technology, physics and engineering. The coverage has been carefully matched to the latest UK syllabuses including GCSE Electronics, GCSE Design & Technology, Engineering GCSE and City & Guilds competence-based courses such as Level 2 NVQs. The second edition now has additional applicability to BTEC First Electronics from Edexcel with coverage of fundamental topics required by students of this qualification, as well as other essential new topics that reflect recent technological developments. The result is a text that meets the needs of students on all Level 2 electronics units and courses, with a broad coverage that will be of direct relevance to any reader commencing study of this subject, or more advanced readers requiring a handy revision guide. New material for the second edition includes: kinetic energy; temperature and resistance; sawtooth waveform; fundamentals of digital communication and data transmission; industrial processes; cells and batteries; wind and solar power; CDs, DVDs, mobile phones; and the latest LED technology. Owen Bishop's talent for introducing the world of electronics has long been a proven fact with his textbooks, professional introductions and popular circuit construction guides being chosen by thousands of students, lecturers and electronics enthusiasts. Companion website A new companion website features animated circuit diagrams to indicate the flow of current, calculators to help with elementary electronic design project work, answers to revision questions and multiple-choice questions in the book, as well as essential circuit diagrams and illustrations from the text made available as PowerPoint slides for lecturers to use in presentations and handouts.*

<http://books.elsevier.com/companions/0750669608>

*This is the only introduction you'll need to start programming in R, the open-source language that is free to download, and lets you adapt the source code for your own requirements. Co-written by one of the R Core Development Team, and by an established R author, this book comes with real R code that complies with the standards of the language. Unlike other introductory books on the ground-breaking R system, this book emphasizes programming, including the principles that apply to most computing languages, and techniques used to develop more complex projects. Learning the language is made easier by the frequent exercises and end-of-chapter reviews that help you progress confidently through the book. Solutions, datasets and any errata will be available from the book's web site. The many examples, all from real applications, make it particularly useful for anyone working in practical data analysis.*

*A First Course in Electrical and Computer Engineering*

*A First Course in Numerical Methods*

*An Introduction to Programming*

*With MATLAB Programs and Experiments*

*The Art of R Programming*

*How to Think Like a Computer Scientist*

*Algebraic coding theory is a new and rapidly developing subject, popular for its many practical applications and for its fascinatingly rich mathematical structure. This book provides an elementary yet rigorous introduction to the theory of error-correcting codes. Based on courses given by the author over several years to advanced undergraduates and first-year graduated students, this guide includes a large number of exercises, all with solutions, making the book highly suitable for individual study.*

*This rapidly developing field encompasses many disciplines including operations research, mathematics, and probability. Conversely, it is being applied in a wide variety of subjects ranging from agriculture to financial planning and from industrial engineering to computer networks. This textbook*

*provides a first course in stochastic programming suitable for students with a basic knowledge of linear programming, elementary analysis, and probability. The authors present a broad overview of the main themes and methods of the subject, thus helping students develop an intuition for how to model uncertainty into mathematical problems, what uncertainty changes bring to the decision process, and what techniques help to manage uncertainty in solving the problems. The early chapters introduce some worked examples of stochastic programming, demonstrate how a stochastic model is formally built, develop the properties of stochastic programs and the basic solution techniques used to solve them. The book then goes on to cover approximation and sampling techniques and is rounded off by an in-depth case study. A well-paced and wide-ranging introduction to this subject.*

*This is an introductory course book that teaches C++ programming. The book concentrates on the procedural paradigm. It is intended for students who possibly have not programmed before and wish to go to university and study Computer Science or a related course. The book uses open source software - the Quincy 2005 IDE with the GNU MinGW compiler.*

*Class tested by the authors over 3 years, this new Java textbook takes a unique approach to the difficult job of introducing students to programming. There are several unique aspects to the approach taken in this book. First, its sequencing of topics is fresh and innovative and very much in step with current trends. The book is structured into 3 main parts: Structured Programming, Object-based Programming, and Object-oriented Programming. The themes that run through the book instill core programming principles and are: object-oriented programming; concepts rather than syntax; fundamental data modelling, and developing algorithms. The presentation is examples-driven and focuses on problem solving techniques which is an essential pedagogy for a practical subject such as programming. A two semester of this title is also available featuring extra content on applying OOP.*

*A Hands-On, Project-Based Introduction to Programming*

*A First Course in Computational Physics and Object-Oriented Programming with C++ Hardback with CD-ROM*

*Python for Rookies*

*Thinking as Computation*

*Python Crash Course*

*Processing*

*This book is intended ... for use at either the college level or in high schools that offer advanced courses. No background in computing or advanced mathematics is assumed ... [the]*

presentation includes the study of two programming languages, Karel and PASCAL, both of which are used as vehicles for developing general programming and problem-solving skills. PASCAL is given the more thorough treatment of the two.-Pref. This book demonstrates how Processing is an excellent language for beginners to learn the fundamentals of computer programming. Originally designed to make it simpler for digital artists to learn to program, Processing is a wonderful first language for anyone to learn. Given its origins, Processing enables a multimodal approach to programming instruction, well suited to students with interests in computer science or in the arts and humanities. The book uses Processing's capabilities for graphics and interactivity in order to create examples that are simple, illustrative, interesting, and fun. It is designed to appeal to a broad range of readers, including those who want to learn to program to create digital art, as well as those who seek to learn to program to process numerical information or data. It can be used by students and instructors in a first course on programming, as well as by anyone eager to teach them self to program. Following a traditional sequence of topics for introducing programming, the book introduces key computer science concepts, without overwhelming readers with extensive detail. The conversational style and pace of the book are based upon the authors' extensive experience with teaching programming to a wide variety of beginners in a classroom. No prior programming experience is expected.

A practical introduction to network science for students across business, cognitive science, neuroscience, sociology, biology, engineering and other disciplines.

This book, first published in 1996, introduces students to optimization theory and its use in economics and allied disciplines. The first of its three parts examines the existence of solutions to optimization problems in  $R^n$ , and how these solutions may be identified. The second part explores how solutions to optimization problems change with changes in the underlying parameters, and the last part provides an extensive description of the fundamental principles of finite- and infinite-horizon dynamic programming. Each chapter contains a number of detailed examples explaining both the theory and its applications for first-year master's and graduate students.

'Cookbook' procedures are accompanied by a discussion of when such methods are guaranteed to be successful, and, equally importantly, when they could fail. Each result in the main body of the text is also accompanied by a complete proof. A preliminary chapter and three appendices are designed to keep the book mathematically self-contained.

*A First Course in Scientific Computing*

*A First Course in Programming*

*A First Course in Information Theory*

*A First Course in Statistical Programming with R*

*A First Course in Structured Programming*

*A First Course in Programming and Statistics*

**A Presentation of Pascal Utilizing Drill Exercises, Problems Requiring the Creation of Complete Programs & a Format for Tracing Program Execution.**

*Offers students a practical knowledge of modern techniques in scientific computing.*

*This text is a first course in the skills of computer programming, using as a vehicle C, which is gaining currency in both education and industry. It is carefully structured into three sections, introducing the language, explaining the principles of good program design and then proceeding from a statement of need through to a working program. Questions and solutions using a cheat system on the accompanying disk test the student's understanding at each stage. The emphasis throughout is on good design practice and coding style.*

**DESCRIPTION** *If you want to try to learn Java Programming quickly, this is the right, complete and simple guide, than keep reading. Welcome to the exciting world of Java programming! Java is a programming language, just like any language, requires time be fluent in. While learning a language like Spanish or French allows us to interact with people from that country, programming languages allow us to interact with computers by giving us the ability to write instructions that computers can understand and execute. Why would we want or need to do this? Look around you. Whether you are sitting in an office, a living room, a doctor's office, a vehicle, wherever, you are absolutely surrounded by technology and computers. When you think about it, not being able to communicate with the immense about of computers around you seems almost irresponsible. This is one of the many reasons why learning one, two, or 10 programming languages is one of the quickest ways to make sure you're on top of the pile in this new computer dirven world. Released by Sun Microsystems in 1995, Java is famous for its portability, security, and robustness. It remains one of the most favorable programming languages over two decades later. Whether you are a complete novice and or well acquainted with other programming languages, this book should provide an exhaustive introduction to the ins-and-outs of Java. Even if you have never touched a computer at the time you start this book, we hope by the final chapter you will be capable of navigating the complex world of Java programming. It may seem daunting, but take it slow, and give it a chance, and you will be making your own programs in no time. Java is used to manage technologies and advanced system throughout the world, and by learning how to manipulate the many powerful tools found within Java you 'd put yourself at the forefront of a rapidly developing world that is fully dependent on coding. Welcome to a new world. You must learn: What software do you need to code Java programs What are arrays and lists*

*How to install and run JDK and Netbeans How to format Java strings How to write your own classes How to use control flow statements in Java Familiarize yourself with decisions, conditions, statements, and information overload Differentiate between loops and arrays, objects and classes, methods, and variables Find links to additional resources Even if you have no idea how javascript works this is the right guide for you! You will quickly learn all the javascript secrets and functions! Scroll up and click the "buy now button"!*

*A First Course in Programming with Pascal*

*A First Course in Programming with C*

*A C++ Notebook: A First Course in Programming Coding Theory*

*A First Course in Network Science*

*With Application to Understanding Data*

The second edition of the best-selling Python book in the world (over 1 million copies sold!). A fast-paced, no-nonsense guide to programming in Python. Updated and thoroughly revised to reflect the latest in Python code and practices. Python Crash Course is the world's best-selling guide to the Python programming language. This fast-paced, thorough introduction to programming with Python will have you writing programs, solving problems, and making things that work in no time. In the first half of the book, you'll learn basic programming concepts, such as variables, lists, classes, and loops, and practice writing clean code with exercises for each topic. You'll also learn how to make your programs interactive and test your code safely before adding it to a project. In the second half, you'll put your new knowledge into practice with three substantial projects: a Space Invaders-inspired arcade game, a set of data visualizations with Python's handy libraries, and a simple web app you can deploy online. As you work through the book, you'll learn how to:

- Use powerful Python libraries and tools, including Pygame, Matplotlib, Plotly, and Django
- Make 2D games that respond to keypresses and mouse clicks, and that increase in difficulty
- Use data to generate interactive visualizations
- Create and customize web apps and deploy them safely online
- Deal with mistakes and errors so you can solve your own programming problems

If you've been thinking about digging into programming, Python Crash Course will get you writing real programs fast. Why wait any longer? Start your engines and code!

Currently used at many colleges, universities, and high schools, this hands-on introduction to computer science is ideal for people with little or no programming experience. The goal of this concise book is not just to teach you Java, but to help you think like a computer scientist. You'll learn how to program—a useful skill by itself—but you'll also discover how to use programming as a means to an end. Authors Allen Downey and Chris Mayfield start with the most basic concepts and gradually move into topics that are more complex, such as recursion and object-oriented programming. Each brief chapter covers the material for one week of a college course and includes exercises to help you practice what you've learned. Learn one concept at a time: tackle complex topics in a series of small steps with examples



Understand how to formulate problems, think creatively about solutions, and write programs clearly and accurately Determine which development techniques work best for you, and practice the important skill of debugging Learn relationships among input and output, decisions and loops, classes and methods, strings and arrays Work on exercises involving word games, graphics, puzzles, and playing cards The book serves as a first introduction to computer programming of scientific applications, using the high-level Python language. The exposition is example and problem-oriented, where the applications are taken from mathematics, numerical calculus, statistics, physics, biology and finance. The book teaches "Matlab-style" and procedural programming as well as object-oriented programming. High school mathematics is a required background and it is advantageous to study classical and numerical one-variable calculus in parallel with reading this book. Besides learning how to program computers, the reader will also learn how to solve mathematical problems, arising in various branches of science and engineering, with the aid of numerical methods and programming. By blending programming, mathematics and scientific applications, the book lays a solid foundation for practicing computational science. From the reviews: Langtangen ... does an excellent job of introducing programming as a set of skills in problem solving. He guides the reader into thinking properly about producing program logic and data structures for modeling real-world problems using objects and functions and embracing the object-oriented paradigm. ... Summing Up: Highly recommended. F. H. Wild III, Choice, Vol. 47 (8), April 2010 Those of us who have learned scientific programming in Python 'on the streets' could be a little jealous of students who have the opportunity to take a course out of Langtangen's Primer." John D. Cook, The Mathematical Association of America, September 2011 This book goes through Python in particular, and programming in general, via tasks that scientists will likely perform. It contains valuable information for students new to scientific computing and would be the perfect bridge between an introduction to programming and an advanced course on numerical methods or computational science. Alex Small, IEEE, CiSE Vol. 14 (2), March /April 2012 "This fourth edition is a wonderful, inclusive textbook that covers pretty much everything one needs to know to go from zero to fairly sophisticated scientific programming in Python..." Joan Horvath, Computing Reviews, March 2015

Today, anyone in a scientific or technical discipline needs programming skills. Python is an ideal first programming language, and Introduction to Programming in Python is the best guide to learning it. Princeton University's Robert Sedgewick, Kevin Wayne, and Robert Dondero have crafted an accessible, interdisciplinary introduction to programming in Python that emphasizes important and engaging applications, not toy problems. The authors supply the tools needed for students to learn that programming is a natural, satisfying, and creative experience. This example-driven guide focuses on Python's most useful features and brings programming to life for every student in the sciences, engineering, and computer science. Coverage includes

Basic elements of programming: variables, assignment statements, built-in data types, conditionals, loops, arrays, and I/O, including graphics and sound Functions, modules, and libraries: organizing programs into components that can be independently debugged, maintained, and reused Object-oriented programming and data abstraction: objects, modularity, encapsulation, and more Algorithms and data structures: sort/search algorithms, stacks, queues, and symbol tables Examples from applied math, physics, chemistry, biology, and computer science—all compatible with Python 2 and 3 Drawing on their extensive classroom experience, the authors provide Q&As, exercises, and opportunities for creative practice throughout. An extensive amount of supplementary information is available at [introcs.cs.princeton.edu/python](http://introcs.cs.princeton.edu/python). With source code, I/O libraries, solutions to selected exercises, and much more, this companion website empowers people to use their own computers to teach and learn the material.

Import, Tidy, Transform, Visualize, and Model Data

A First Course in Linear Programming

R for Data Science

Introduction to Computation and Programming Using Python, second edition

Eloquent JavaScript

Introduction to Programming in Python

This book provides an up-to-date introduction to information theory. In addition to the classical topics discussed, it provides the first comprehensive treatment of the theory of I-Measure, network coding theory, Shannon and non-Shannon type information inequalities, and a relation between entropy and group theory. ITIP, a software package for proving information inequalities, is also included. With a large number of examples, illustrations, and original problems, this book is excellent as a textbook or reference book for a senior or graduate level course on the subject, as well as a reference for researchers in related fields.

A first programming course should not be directed towards learning a particular programming language, but rather at learning to program well; the programming language should get out of the way and serve this goal. The simple, powerful Racket language (related to Scheme) allows us to concentrate on the fundamental concepts and techniques of computer programming, without being distracted by complex syntax. As a result, this book can be used at the high school (and perhaps middle school) level, while providing enough advanced concepts not usually found in a first course to challenge a college student. Those who have already done some programming (e.g. in Java, Python, or C++) will enhance their understanding of the fundamentals, un-learn some bad habits, and change the way they think about programming. We take a graphics-early approach: you'll start manipulating and combining graphic images from Chapter 1 and writing event-driven GUI programs from Chapter 6, even before seeing arithmetic. We continue using graphics, GUI and game programming throughout to motivate fundamental concepts. At the same time, we emphasize data types, testing, and a concrete, step-by-step process of problem-solving. After working through this book, you'll be prepared to learn other programming languages and program well in them. Or, if this is the last programming course you ever take, you'll understand many of the issues that affect the programs you use every day. I have been using *Picturing Programs* with my daughter, and there's no doubt that it's gentler than *Htdp*. It does exactly what Stephen claims, which is to move gradually from copy-and-change exercises to think-on-your-own exercises within each section. I also think it's nice that the "worked exercises" are clearly labeled as such. There's something psychologically appealing about the fact that you first see an example in the text of the book, and then a similar example is presented as if it were an exercise but they just happen to be

giving away the answer. It is practically shouting out "Here's a model of how you go about solving this class of problems, pay close attention ." Mark Engelberg "1. Matthias & team have done exceptional, highly impressive work with HtDP. The concepts are close to genius. (perhaps yes, genius quality work) They are a MUST for any high school offering serious introductory CS curriculum. 2. Without Dr. Blochs book "Picturing Programs," I would not have successfully implemented these concepts (Dr. Scheme, Racket, Design Recipe etc) into an ordinary High School Classroom. Any high school instructor who struggles to find ways to bring these great HtDP ideas to the typical high schooler, should immediately investigate the Bloch book. Think of it as coating the castor oil with chocolate." Brett Penza

Get started computing with data. Learn general principles while learning R - now including the tidyverse.

JavaScript is at the heart of almost every modern Web application, whether it's Google Apps, Twitter, or the newest browser-based game. Though it's simple for beginners to pick up and play with, JavaScript is not a toy—it's a flexible and complex language that can be used to build full-scale applications. Eloquent JavaScript dives into this flourishing language and teaches you to write code that's beautiful and effective. By immersing you in example code and encouraging experimentation right from the start, the author quickly gives you the tools you need to build your own programs. As you follow along with examples like an artificial life simulation and a version of the classic game Sokoban, you'll learn to:

- Understand the essential elements of programming: syntax, control, and data
- Use object-oriented and functional programming techniques to organize and clarify your programs
- Script the browser and make basic Web applications
- Work with tools like regular expressions and XMLHttpRequest objects

And since programming is an art that's best learned by doing, all example code is available online in an interactive sandbox for you to experiment with. With Eloquent JavaScript as your guide, you can tweak, expand, and modify the author's code, or throw it away and build your own creations from scratch. Before you know it, you'll be fluent in the language of the Web.

Programming in Lua

Programming by Design

A First Course in Computer Programming Using C

The Book of R

An Interdisciplinary Approach

A Tour of Statistical Software Design

***Python Crash Course is a fast-paced, thorough introduction to Python that will have you writing programs, solving problems, and making things that work in no time. In the first half of the book, you'll learn about basic programming concepts, such as lists, dictionaries, classes, and loops, and practice writing clean and readable code with exercises for each topic. You'll also learn how to make your programs interactive and how to test your code safely before adding it to a project. In the second half of the book, you'll put your new knowledge into practice with three substantial projects: a Space Invaders-inspired arcade game, data visualizations with Python's super-handly libraries, and a simple web app you can deploy online. As you work through Python Crash Course you'll learn how to:***

- Use powerful Python libraries and tools, including matplotlib, NumPy, and Pygal***
- Make 2D games that respond to keypresses and mouse clicks, and that grow more***

**difficult as the game progresses -Work with data to generate interactive visualizations -Create and customize Web apps and deploy them safely online -Deal with mistakes and errors so you can solve your own programming problems If you've been thinking seriously about digging into programming, Python Crash Course will get you up to speed and have you writing real programs fast. Why wait any longer? Start your engines and code! Uses Python 2 and 3**

**Learn how to use R to turn raw data into insight, knowledge, and understanding. This book introduces you to R, RStudio, and the tidyverse, a collection of R packages designed to work together to make data science fast, fluent, and fun. Suitable for readers with no previous programming experience, R for Data Science is designed to get you doing data science as quickly as possible. Authors Hadley Wickham and Garrett Grolemund guide you through the steps of importing, wrangling, exploring, and modeling your data and communicating the results. You'll get a complete, big-picture understanding of the data science cycle, along with basic tools you need to manage the details. Each section of the book is paired with exercises to help you practice what you've learned along the way. You'll learn how to: Wrangle—transform your datasets into a form convenient for analysis Program—learn powerful R tools for solving data problems with greater clarity and ease Explore—examine your data, generate hypotheses, and quickly test them Model—provide a low-dimensional summary that captures true "signals" in your dataset Communicate—learn R Markdown for integrating prose, code, and results**

**A First Course in Computer Programming Using C McGraw-Hill Book Company Limited**

**C is a popular programming language which is commonly used by scientists and engineers to write programs for any specific application. C is also a widely accepted programming language in the software industries. This beginner's guide to computer programming is for student programmers to effectively write programs for solving numerical problems. All that is required of a beginner programmer is not experience in computing but interest in computing. The programs illustrated in the book have been accumulated, experimented and tested by the author during his teaching of the subject to a few thousand students in over a decade. In addition, numerous problems are adapted from university question papers. Short questions and**

**answers and objective questions are an added feature. All these would build confidence of the students and those appearing for interview/viva voce in a practical lab. The special topic of the book is C graphics and animation which helps students develop simple programs to generate geometrical and graphical objects.**

**Python Crash Course, 2nd Edition**

**A Definitive Crash Course For Beginners to Learn Java Fast. Secrets, Tips and Tricks to Programming with Java Code and The Fundamentals to Creating Your First Program**

**Think Java**

**Symbolic, Graphic, and Numeric Modeling Using Maple, Java, Mathematica, and Fortran90**

**A Primer on Scientific Programming with Python**

**A First Course in Coding Theory**

*R is the world's most popular language for developing statistical software: Archaeologists use it to track the spread of ancient civilizations, drug companies use it to discover which medications are safe and effective, and actuaries use it to assess financial risks and keep economies running smoothly. The Art of R Programming takes you on a guided tour of software development with R, from basic types and data structures to advanced topics like closures, recursion, and anonymous functions. No statistical knowledge is required, and your programming skills can range from hobbyist to pro. Along the way, you'll learn about functional and object-oriented programming, running mathematical simulations, and rearranging complex data into simpler, more useful formats. You'll also learn to: -Create artful graphs to visualize complex data sets and functions -Write more efficient code using parallel R and vectorization -Interface R with C/C++ and Python for increased speed or functionality -Find new R packages for text analysis, image manipulation, and more -Squash annoying bugs with advanced debugging techniques Whether you're designing aircraft, forecasting the weather, or you just need to tame your data, The Art of R Programming is your guide to harnessing the power of statistical computing.*

*An Introduction to Computer Science*

*Electronics: A First Course*

*Deep Learning for Coders with fastai and PyTorch*