EMPOWER YOUR STUDENTS WHILE BUILDING CONFIDENCE

MindTap for Programming and Computer Science is an outcome-driven application that propels students from memorization to mastery. Now with hands-on programming labs integrated into the MindTap Learning Path, students build their confidence with writing and running code.

MindTap for Programming and Computer Science brings ultimate convenience for students and instructors by allowing you to access everything in one place. In addition, the MindTap Mobile App gives students complete flexibility to read, listen, and study anytime, anywhere on their phones – and learn on their terms.

CONFIDENCE
Empower your students to reach their potential.

Our MindTaps for Programming & Computer Science have an embedded Integrated Development Environment (IDE) that provides coding practice and point-of-need support without any installation or plugins - this provides auto-graded feedback, as the assignments are mapped to each chapter of the text.

Codey is your students’ personal coding assistant, and can analyze code for bugs and issues, explain coding terms and concepts, and score output based on the assignment instructions.

- Powered by artificial intelligence, a chatbot provides hints and feedback when students get stuck, encouraging persistence through on-demand assistance. For instructors, MindTap provides benefits and support including automatic grading, analytics and LMS integration with full flexibility to tailor a course.

CONVENIENCE
Access everything you need in one place.

Cut down on prep with MindTaps preloaded, organized course materials. Teach more efficiently with interactive multimedia, assignments, quizzes, and hands-on programming labs that allow students to code directly in the Integrated Development Environment (IDE) from their web browser.

Hands-on programming labs seamlessly integrated into the MindTap Learning Path, allowing students to code directly in the Integrated Development Environment (IDE) from their web browser.
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cengageasia.com
## PROGRAMMING

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INTRODUCTION TO COMPUTER SCIENCE

INTRODUCTION TO COMPUTER SCIENCE

Invitation to Computer Science, Seventh Edition

G. Michael Schneider, Macalester College; Judith Gersting, Indiana University-Purdue University at Indianapolis

©2016
888 pages

INVITATION TO COMPUTER SCIENCE, 7E is a flexible, non-language-specific text which provides a solid foundation using an algorithm-driven approach. Expanded chapter exercises and practice problems, feature boxes and the latest material on emerging topics, such as privacy, drones, cloud computing, and net neutrality, keep your course in touch with current issues. Optional online language modules for C++, Java, Python, C#, and Ada correspond seamlessly with this edition and give you the flexibility of incorporating a programming language to expand concepts from the text.

KEY FEATURES

• Updates address today's most timely computing and business issues including privacy, drones and robotics, google glass, heartbleed, and more.
• More thorough coverage of cloud computing prepares future professionals, as well as fresh discussions of net neutrality and mobile computing.
• Additional practice problems and revised feature boxes demonstrate practical application of concepts.
• Optional CourseMate™ provides helpful study tools, such as flashcards, quizzing, and games, as well as an online Lab Manual containing 20 laboratory projects that map directly to the main text.

CONTENTS


SUPPLEMENTS

Instructor Resources
MindTap
CourseMate
Written for the beginning computing student, this text engages readers by relating core computer science topics to their industry application. The book is written in a comfortable, informal manner, and light humor is used throughout the text to maintain interest and enhance learning. All chapters contain a multitude of exercises, quizzes, and other opportunities for skill application.

KEY FEATURES
• Intended for an introductory course in computer science for majors and non-majors.
• Introduces students to real-world material that will be useful both in academic and industry environments.
• Features two new chapters that cover user interface design and problem solving.
• Includes a thoroughly revised Programming chapter that discusses the latest version of Java and now contains coverage of C++.
• Offers many new exercises and examples in every chapter.

CONTENTS

SUPPLEMENTS
Instructor Resources
Based on the Association for Computing Imagery model curriculum guidelines, Foundations of Computer Science gives students a bird’s eye view of Computer Science.

This easy-to-read and easy-to-navigate text covers all the fundamentals of computer science required for first year undergraduates embarking on a computing degree.

**KEY FEATURES**

- The rapid growth of networking and its implications for computer science studies.
- New security issues.
- Recent improvements in computer technology.
- End of chapter material.
- Interactive quizzes and enhanced PowerPoint slides.
- Java applets for students to see the simulation of some concepts (e.g. number conversion, encryption and decryption, and programs)

**CONTENTS**


**SUPPLEMENTS**

Instructor Resources
CourseMate
Java Programming: From Problem Analysis to Program Design, Fifth Edition
D. S. Malik, Creighton University

©2012
1088 pages

Designed for a first Computer Science (CS1) Java course, JAVA PROGRAMMING: FROM PROBLEM ANALYSIS TO PROGRAM DESIGN, 5e motivates students while building a cornerstone for the Computer Science curriculum. This text approaches programming using the latest version of Java, and includes updated programming exercises and programs. The engaging and clear-cut writing style will help students learn key concepts through concise explanations and practice in this complex and powerful language.

KEY FEATURES
- VISUAL DIAGRAMS: More than 240 visual diagrams help readers comprehension by clearly illustrating difficult concepts.
- PROGRAMMING CODE WITH DESCRIPTIONS: Programming code used in examples is accompanied by a description of what each line in the code does, leading readers step-by-step through the programming process.
- PROGRAMMING EXAMPLES: Extensive programming examples demonstrate the accurate, concrete stages of Input, Output, Program Analysis and Algorithm Design, and a Complete Program Listing, which challenge readers to write Java programs with a specified outcome.
- NEW: New debugging sections have been added, and many of the older ones have been rewritten. These sections are indicated with a debugging icon.
- NEW: Contains more than 120 exercises, 25 new programming exercises, and numerous new examples spread throughout the book.
- NEW: In Chapters 6 and 12 the GUI figures have been captured and replaced in Windows 7 Professional environment.

CONTENTS

SUPPLEMENTS
Instructor Resources

Kenneth Lambert, Washington and Lee University; Martin Osborne, Western Washington University

©2011
700 pages

Fundamentals of Java™: AP* Computer Science Essentials, 4e, International Edition covers all of the AP requirements for Computer Science Exam A. By taking a multilevel approach to teaching Java, this text is suitable for a wide range of students, from beginners to those ready for advanced data structures. Since it is non-software specific, it can be used with any Java program compiler, including Borland, Sun Microsystems, Symantec and others.

KEY FEATURES

• Updated to map to the latest AP* Computer Science Exam A exam objectives.
• Provides a comprehensive introduction to computer science with programming.
• Covers basic programming and problem solving, data and information processing, object-oriented programming, and recursive programming.
• Previews advanced topics such as stacks, queues, sets, and maps, complexity analysis, graphics, image processing, GUIs, networking and concurrency.
• End-of-Lesson activities for student reinforcement include Review questions, Projects, and critical-thinking activities.

CONTENTS

Fundamentals of Python: First Programs
Kenneth Lambert, Washington and Lee University

©2012
496 pages

KEY FEATURES
• Early emphasis on problem solving and algorithm development.
• Covers multiple design strategies, including top-down design and recursive design with functions, object-based programming, and object-oriented design.
• Engages students’ interest with modern applications such as graphics, graphical user interfaces (GUIs), networks, and image processing.
• Walks student’s through the development of complete programs in numerous case studies.
• Provides exercises at the end of each section to reinforce students’ understanding of each concept.
• Includes sets of programming projects to give students practice in problem solving.
• Offers complete source code for all program examples at the publisher’s Web site.

CONTENTS

SUPPLEMENTS
Instructor Resources
MindTap
INTRODUCTION TO PROGRAMMING

C++ Programming: From Problem Analysis to Program Design, Eighth Edition
D.S. Malik, Creighton University

ISBN: 978-1-337-10208-7
©2018

D.S. Malik’s time-tested, student-centered methodology incorporates a strong focus on problem-solving with full-code examples that vividly demonstrate the hows and whys of applying programming concepts and utilizing C++ to work through problems.

NEW TO THIS EDITION:
• More than 250 new, modified, or updated exercises address today’s latest programming challenges, while more than 20 new, extensive programming exercises throughout the chapters emphasize problem-solving and program design in detail.
• Updated discussion highlights strengths and features of C++14, including coverage of in-class initialization of data members as well as other capabilities.
• Full-color, functional interior design highlights key concepts and terms.
• More than 300 visual diagrams illustrate challenging concepts.
• Numbered full-code examples throughout this edition illustrate key topics in each chapter.
• MindTap is the digital learning solution that powers students from memorization to mastery. It gives instructors complete control of the course—to provide engaging content, to challenge every individual, and to build their coding confidence.

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SUPPLEMENTS
Instructor Resources
MindTap
C++ Programming: Program Design Including Data Structures, Eighth Edition
D.S. Malik, Creighton University

©2018

D.S. Malik’s time-tested, student-centered methodology incorporates a strong focus on problem-solving with full-code examples that vividly demonstrate the hows and whys of applying programming concepts and utilizing C++ to work through problems.

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SUPPLEMENTS
Instructor Resources
MindTap
Gary Bronson’s A FIRST BOOK OF C++, 4e, takes a hands-on, applied approach to the first programming language course for students studying computer science. The book begins with procedural programming in C, and then gradually introduces object-oriented programming features and the C++ language syntax that enables first-time programmers to use them.

KEY FEATURES

• Gives introductory programming students a solid foundation in the C++ programming language.
• Guides students through the syntax and semantics of C++ before introducing classes.
• Offers a variety of end-of-section problems, including skill-building and programming exercises.
• The ANSI/ISO C++ iostream library and namespace mechanism are used in all programs.
• NEW! Part I has been restructured to include arrays, files, and pointers, so it can be used as the basis for a complete introductory semester course in C++.
• NEW! The four chapters covering object-oriented programming have been revised and moved to Part II so that they form a logical continuation from structured programming to object-oriented programming.
• NEW! More than 50 new exercises have been added, and each exercise is labeled to indicate its function (Practice, Program, Modify, Debug, Desk check, or For thought).
• NEW! Three new Chapter Supplements have been added to introduce the fundamentals of object-oriented design and the Unified Modeling Language (UML).

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SUPPLEMENTS

Instructor Resources
Gary Bronson, Fairleigh Dickinson University

©2013
752 pages

This proven, pragmatic text is designed specifically for today's first- and second-year engineering and science students with a wealth of new applications and examples taken from real situations involving electrical and structural engineering, fluid mechanics, mathematics, power generation, and heat transfer challenges. The book starts with a solid foundation in procedural programming before moving into a reorganized, clear presentation of object-oriented concepts. Dynamic case studies, career spotlights and engineering-driven applications showcase the relevance of concepts students are learning to their careers. Helpful tips demonstrate how to avoid common C++ programming errors, while updates ensure that students are learning the most recent C++ code standards.

KEY FEATURES
• Completely reorganized Part II provides additional clarity with timely updates of object-oriented concepts.
• Expanded, revised exercises throughout this edition reflect today's latest engineering-based challenges.
• Coverage starts with solid introduction to procedural programming before introducing object-oriented design.
• Foundational coverage offers both procedural and object-oriented viewpoints.
• Clear presentation interweaves thorough explanations and frequent examples.
• Engaging, interactive applications and features showcase engineering topics.
• Important coverage of ANSI/ISO standards demonstrates their influence on programming and business today.
• The latest coverage includes the most recent C++ code standards as well as the standard template library.

CONTENTS

SUPPLEMENTS
Instructor Resource

Behrouz A. Forouzan, De Anza College;
Richard F. Gilberg, De Anza College

Data structures serve as a foundation upon which many other computer science fields are built. Thus, some knowledge of data structures is a prerequisite for students who wish to work in the design, implementation, testing, or maintenance of virtually any software systems. The Java language, an object-oriented descendant of C and C++, has gained popularity in industry and academia as an excellent programming language due to widespread use of the Internet. Thus, the use of Java to teach a data and algorithms course is well justified.

NEW TO THIS EDITION
- A section on treaps (6.10)
- A section on k-d trees (6.11)
- A section on k-d B-trees (7.1.5)
- A section on generational garbage collection (12.3.4)

FEATURES
Emphasizes the connection between data structures and their algorithms, with an analysis of the algorithms’ complexity

CONTENTS

SUPPLEMENTS
Instructor Resources
Experienced author Adam Drozdek highlights the fundamental connection between data structures and their algorithms, giving equal weight to the practical implementation of data structures and the theoretical analysis of algorithms and their efficiency. It provides the balance of theory and practice students need to excel in a variety of applications in a modern, object-oriented paradigm.

NEW TO THIS EDITION
New sections in this edition discuss additional sorting methods (Sections 9.1.3.1; 9.3.6), while coverage of a new hashing technique (Section 10.5.1) demonstrates how to more efficiently index and retrieve items in a database.

FEATURES
• New coverage in this edition thoroughly introduces treaps (Section 6.10), details both k-d trees (Section 6.11) and k-d B-trees (Sections 7.1.5), and explains generational garbage collection (Section 12.3.4).
• Dynamic case studies in most of this edition’s chapters further highlight key concepts while providing insights into a broad range of practical data structures implementation.
• This edition’s well-developed theoretical analysis centers on both the complexity and efficiency of algorithms to help you cultivate your students’ strong abstract-thinking skills with an approach that enables you to seamlessly integrate algorithms into your course.
• Manageable examples of C++ code throughout this edition reinforce the practical importance of data structures as readers work to design, implement, test, or maintain virtually any software system.

CONTENTS

SUPPLEMENTS
Instructor Resources
Data Structures Using C++, Second Edition
D.S. Malik, Creighton University

ISBN: 978-0-324-78201-1  
©2010  
976 pages

KEY FEATURES
• Designed for a CS2 one-semester course focused on data structures.
• Reinforces concepts through extensive diagrams and examples.
• Features complete Programming Examples throughout that outline the critical steps to writing a program for a case study including Input/Output, Algorithm Design, Main Algorithm, and Complete Program.
• Offers robust end-of-chapter exercises that provide ample opportunity for practice.

CONTENTS

SUPPLEMENTS
Instructor Resources

Richard F. Gilberg, De Anza College; Behrouz A. Forouzan, De Anza College

UNDERSTANDING OPERATING SYSTEMS, 8E provides a clear, straightforward explanation of both operating system theory and practice for students. As in previous trusted editions, this award-winning book’s highly regarded structure begins with a valuable discussion of fundamentals before introducing specific operating systems.

KEY FEATURES

• This edition now uses pseudo-code and prose descriptions that readers can easily understand, replacing the former examples in assembly language.
• Expanded discussion details the advantages and use of both cloud computing and cloud storage.
• Fresh new exercises still retain the book’s distinct focus on reader comprehension that extends well beyond mere memorization or cut-and-paste facts.
• Numerous cross references that help readers connect details about the four operating systems described in the book to overall concepts discussed in the beginning chapters.
• Added emphasis on available command-mode options in each operating system for readers who want to explore their system more directly, without having to use the GUI menus.
• Updates throughout the final four chapters now highlight information on the most current versions of UNIX (including the latest Macintosh OS), Linux, Windows, and Android.

CONTENTS


SUPPLEMENTS

Instructor Resources
This book is intended for use in an undergraduate course on computer organization for computer science and computer engineering majors. The depth and breadth of coverage of its contents are suitable not only for academic teaching in colleges and universities, but also for reading and reference by computer professionals and specialists. The book features an analytical approach to all aspects of modern computer design—the design of all major functional units of a computer is learned by way of the analysis of their characteristics. It presents the detailed design process of these functional units and especially their interconnection to construct the datapath and the control unit of a computer. The last chapter of the book pushes this approach further to the design of the contemporary high-performance pipelined processor.

**KEY FEATURES**
- Clarifies the concepts taught in each section using worked examples in each chapter.
- Allows instructors to assess the level of understanding of their students with end-of-chapter questions and problems.
- Includes the latest topics in the field of computer organization, such as solid-state drives and multi-core architecture.
- Supports the teaching of this course with ancillaries such as Instructor’s Solutions Manual and PowerPoint slides.

**CONTENTS**

**SUPPLEMENTS**
Instructor Resources
ETHICS IN A COMPUTING CULTURE introduces key ideas in moral theory and professionalism to explore the hottest topics in computer ethics. With a unique blend of theory, application, and critical thinking exercises, each chapter underscores the interdisciplinary links between computing and diverse areas of study. Abundant multicultural cases are presented throughout to highlight contrasts and conflicts in ethical perspectives across the globe.

**KEY FEATURES**

- Focus on reflection - Decades of educational research show that critical reflection, through both reading and writing, are key to student cognitive development. ETHICS IN A COMPUTING CULTURE allows instructors to easily put this approach into practice.
- Question types relate directly to critical thinking rubrics (e.g. the WSU critical thinking rubric) - Research questions focus on evidence (WSU level 5), Position questions focus on formulating positions (WSU level 2), and Context questions focus on the effects of changing context (WSU level 6). Instructors can easily map our questions onto existing evaluation frameworks, making data collection for ABET evaluations simpler.
- Diverse perspectives in every chapter - Many universities are requiring global topics in general education courses. ETHICS IN A COMPUTING CULTURE contains diversity-oriented or multicultural cases in every chapter.
- Interdisciplinary perspectives in every chapter - Computing is inherently interdisciplinary. Every chapter includes interdisciplinary cases to illustrate the links between computing and other disciplines.

**CONTENTS**


**SUPPLEMENTS**

Instructor Resources
Introduction to the Theory of Computation, Third Edition

Michael Sipser, Massachusetts Institute of Technology

ISBN: 978-1-133-18779-0
©2013
504 pages

The number one choice for today’s computational theory course, this revision continues the book’s well-known, approachable style with timely revisions, additional practice, and more memorable examples in key areas. A new first-of-its-kind theoretical treatment of deterministic context-free languages is ideal for a better understanding of parsing and LR grammars. You gain a solid understanding of the fundamental mathematical properties of computer hardware, software, and applications with a blend of practical and philosophical coverage and mathematical treatments, including advanced theorems and proofs.

KEY FEATURES
• Current revisions reflect the latest industry developments with new examples and exercises to ensure comprehension.
• Additional exercises, problems and examples emphasize the practical application of theory.
• Expanded math topics offers support for readers who need review.
• New coverage of deterministic context-free languages provides unique, clear and thorough explanation.
• This edition’s exceptional treatment of challenging topics incorporates both formal and informal definitions and descriptions of methods to ensure student retention and prepare readers for more advanced study.
• Worked-out examples encourage reader understanding.
• Reader-friendly approach makes even the most complex topics approachable for students at all levels.

CONTENTS

SUPPLEMENTS
Instructor Resources
This book gives advanced undergraduate students an overview of programming languages through general principles combined with details about many modern languages. Major languages used in this edition include C, C++, Smalltalk, Java, Ada, ML, Haskell, Scheme, and Prolog; many other languages are discussed more briefly. The text also contains extensive coverage of implementation issues, the theoretical foundations of programming languages, and a large number of exercises, making it the perfect bridge to compiler courses and to the theoretical study of programming languages.

**KEY FEATURES**

- Overview of the history of programming languages, and introduces the idea of abstraction and the concept of different language paradigms.
- Covers syntax in some detail, including the use of BNF, EBNF, and syntax diagrams.
- Covers the central semantic issues of programming languages.
- Overview of modules and abstract data types, including language mechanisms for equational, or algebraic, specification.
- Introduces the three principal methods of formal semantics: operational, denotational, and axiomatic.
- NEW! The chapter on object-oriented programming is now the last of the three chapters on programming paradigms instead of the first one. The order of these chapters now reflects the increasing complexity of the underlying models of computation of each programming paradigm (functions, logic, objects).
- NEW! Object-oriented programming in Chapter 5 is now introduced with Smalltalk rather than Java.

**CONTENTS**


**SUPPLEMENTS**

Instructor Resources
A popular choice for foundational programming, this comprehensive book takes a unique, language-independent approach to programming with a distinctive emphasis on modern conventions. Noted for its clear writing style and complete coverage, the book eliminates highly technical jargon while introducing universal programming concepts and ensuring strong programming style and logical thinking.

**KEY FEATURES**

- Unique language-independent approach provides a solid foundation in programming logic.
- Business-based examples clearly illustrate key points.
- Wealth of proven practice opportunities keeps students engaged and actively learning.
- Coverage of the case structure is now presented alongside closely related topics for a more logical progression.
- Thoroughly updated advanced data handling concepts chapter prepares students for more complex challenges.
- Streamlined presentation focuses on most important concepts and skills.
- MindTap® is the digital learning solution that powers students from memorization to mastery.

**CONTENTS**


**SUPPLEMENTS**

Instructor Resources
MindTap
A popular choice for foundational programming, this comprehensive book takes a unique, language-independent approach to programming with a distinctive emphasis on modern conventions. Noted for its clear writing style and complete coverage, the book eliminates highly technical jargon while introducing universal programming concepts and ensuring strong programming style and logical thinking.

**KEY FEATURES**

- Unique language-independent approach provides a solid foundation in programming logic.
- Business-based examples clearly illustrate key points.
- Wealth of proven practice opportunities keeps students engaged and actively learning.
- Coverage of the case structure is now presented alongside closely related topics for a more logical progression.
- Thoroughly updated advanced data handling concepts chapter prepares students for more complex challenges.
- Streamlined presentation focuses on most important concepts and skills.
- MindTap® is the digital learning solution that powers students from memorization to mastery.

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**SUPPLEMENTS**

Instructor Resources
MindTap
Just Enough Programming Logic and Design, Second Edition
Joyce Farrell

©2013
312 pages

Find exactly what you need to master the fundamentals of programming logic with the concise JUST ENOUGH PROGRAMMING LOGIC AND DESIGN, 2E. This unique, language-independent introduction to programming logic provides seven chapters focused on key programming and logic content in a direct, efficient format that helps you progress through the subject matter quickly. Everyday examples and clear explanations in a streamlined presentation make this a perfect choice even if you have no prior programming experience. Twenty-five brief new videos from the author expand on and clarify topics, while new Debugging Exercises and a wealth of review and programming exercises in each chapter help you hone your skills.

CONTENTS

SUPPLEMENTS
Instructor Resources

Joyce Farrell

ISBN: 978-1-133-18823-0
©2013
560 pages

This book takes a unique, language-independent approach to ensure readers develop a strong foundation in traditional programming principles and object-oriented concepts before learning the details of a specific programming language. The author presents object-oriented programming terminology without highly technical language, making the book understandable even for readers with no previous programming experience. Common business examples and carefully revised chapters clearly illustrate key points. A wealth of updated programming exercises in every chapter provide diverse practice opportunities, while new Video Lessons expand on key topics. Use this book alone or with a language-specific companion that emphasizes C++, Java or Visual Basic.

CONTENTS

SUPPLEMENTS
Instructor Resources
From the respected instructor and author Paul Addison, PRINCIPLES OF PROGRAM DESIGN: PROBLEM SOLVING WITH JAVASCRIPT, International Edition gives your students the fundamental concepts of good program design, illustrated and reinforced by hands-on examples using JavaScript. Why JavaScript? It simply illustrates the programming concepts explained in the book, requires no special editor or compiler, and runs in any browser. Little or no experience is needed because the emphasis is on learning by doing. There are examples of coding exercises throughout every chapter, varying in length and representing simple to complex problems. Students are encouraged to think in terms of the logical steps needed to solve a problem and can take these skills with them to any programming language in the future. To help reinforce concepts for your students, each chapter has a chapter summary, review questions, hand-on activities, and a running case study that students build on in each chapter.

KEY FEATURES
• Early OOP and GUI introduction: This book presents object-oriented programming and graphical user interfaces, with hands-on examples, in Chapter 3. An optional project, called the Object Lesson, is included at the end of each subsequent chapter, which applies traditional programming concepts from the chapter to OOP and GUI applications.
• Direct application of concepts: Problem solutions are developed in pseudo code and converted to JavaScript in each chapter, so that students get to see programming concepts put into action.
• Good programming practices: Students are encouraged to develop good techniques and habits, and follow prescribed conventions and styles, including program documentation, comments in code, and consistent indentation and naming procedures.

CONTENTS

SUPPLEMENTS
Instructor Resources
Visual Logic
Vanguard

Help Your Students Understand The Logic Of Programming
Visual Logic is a simple but powerful tool for teaching programming logic and design without traditional high-level programming language syntax. It uses flowcharts to explain essential programming concepts, including variables, input, assignment, output, conditions, loops, procedures, graphics, arrays, and files.

KEY FEATURES
• Offers the ability to interpret and execute flowcharts, providing students with immediate and accurate feedback about their solutions.
• Combines the power of a high-level language with the ease and simplicity of flowcharts.
• Can be used with a number of Course Technology programming books, particularly those designed for an early course in programming in which students are learning concepts and fundamentals, using flowcharts.

For a demonstration and FAQs, visit www.visuallogic.org

Most customers bundle the Visual Logic programming tool with a Farrell Programming Logic and Design text.

ISBN: 978-1-4188-3773-0
March 2006
Pin Code

A Guide to Working with Visual Logic
Thad Crews

ISBN: 978-0-324-60119-0
August 2008
140 pages
This 14-chapter text uses a combination of Alice 3 and pure Java to introduce beginning students to object-oriented (OO) programming concepts. Originally developed to eliminate barriers that have traditionally prevented many students from successfully learning to program, Alice 3, the latest release, makes it easy to build 3D animations using models from the popular Sims™ games, while eliminating syntax errors. The text employs a “spiral” pedagogical approach: the first six chapters use Alice’s innovative drag-and-drop environment to introduce OO concepts through the medium of computer animation, while the final eight chapters use pure Java to revisit and expand on those same concepts.

**KEY FEATURES**

- Uses Java syntax throughout in order to seamlessly transition from Alice 3 to Java.
- Designed as a full core text for an introductory programming course.
- Features full coverage of object-oriented features—including classes, class hierarchies, and inheritance—in both Alice 3 and Java.
- Examples throughout the first six chapters are based on Alice 3’s professionally created Sims™ models, donated by Electronic Arts; examples in the final eight chapters have been updated to the latest version of Java.
- Introduces coverage of the NetBeans IDE, including how to open Alice 3 projects in NetBeans.

**CONTENTS**


**SUPPLEMENTS**

Instructor Resources
This brief six-chapter supplementary book uses Alice - the popular 3D virtual reality computer programming system for teaching that reduces the syntax and eliminates many of the common barriers to programming success. Alice and ALICE 3 IN ACTION: COMPUTING THROUGH ANIMATION, 2E make programming both simple and fun. Even beginning students instantly see the possibilities and rewarding results of programming, which is the first step in encouraging further study in this exciting field!

**KEY FEATURES**

- This supplementary book helps students create dynamic and exciting first exposure to computer programming while ensuring they clearly grasp object-oriented concepts.
- This book uses Alice, today’s popular tool that teaches programming techniques in a visually rich environment that’s less syntax-intensive to eliminate many of the barriers to programming success.
- Examples throughout the book are based on Alice 3’s professionally created Sims™ models, donated by Electronic Arts.
- Extensive examples, fascinating images, and intriguing end-of-chapter projects help emphasize programming skills and strength your students’ mastery of programming basics.

**CONTENTS**

AN INTRODUCTION TO PROGRAMMING USING ALICE 2.2, 2e, provides students with a solid introduction to concepts of programming, logic, and related mathematics through the use of Alice, a proven tool for motivating beginning programmers. This new edition has been fully updated to take advantage of the new movie making, virtual reality, and gaming capabilities of Alice 2.2. All chapters are supported with robust exercise sets and visual diagrams.

KEY FEATURES

• Motivates beginning programmers through a highly visual method, allowing students to see their work come to life.
• Includes colorful graphics, screen shots, and examples that illuminate programming concepts.
• Presents an approachable step-by-step pedagogy with numerous accompanying screenshots, creating the ideal learning experience for new programmers.
• New! Fully updated for the latest release of Alice, version 2.2.
• New! Includes two new chapters on Gaming and Movies.
• New! Coverage of recursion and data structures has been simplified and integrated into a single chapter.

CONTENTS


SUPPLEMENTS

Instructor Resources
Java™ Programming, Eighth Edition
Joyce Farrell

©2016
976 pages

Introduce your beginning programmers to the power of Java for developing applications with the engaging, hands-on approach in Farrell’s JAVA PROGRAMMING, 8E. With this text, even first-time programmers can quickly develop useful programs while learning the basic principles of structured and object-oriented programming. The text incorporates the latest version of Java with a reader-friendly presentation and meaningful real-world exercises. Updated Programming Exercises and a wealth of case problems help students build skills critical for ongoing programming success.

KEY FEATURES
- Each chapter includes numerous figures to further clarify key content. Code figures are frequently 25 lines long or shorter, illustrating one concept at a time.
- Programs throughout this edition have been tested using Java 8.
- Completely revised Chapter 16 to focus on Swing component graphics production using the paintComponent() method.
- New programming exercises provide essential hands-on practice.
- Optional CourseMate that includes a wealth of interactive teaching and learning tools and unique Video Quizzes created by the text author.

CONTENTS

SUPPLEMENTS
Instructor Resources
MindTap
CourseMate
An Introduction to Programming with C++, Eighth Edition
Diane Zak

©2016
768 pages

Written by popular technology author Diane Zak, AN INTRODUCTION TO PROGRAMMING WITH C++, 8E adopts a unique, student-focused approach. Memorable new examples throughout this edition capture the student’s attention and demonstrate programming principles in action. A wealth of new hands-on exercises, including mini-quizzes, labs, and “Try This” features, give your students the opportunity to absorb, practice, and apply concepts as they progress.

KEY FEATURES
• Known for its highly visual style, this edition makes extensive use of flowcharts, IPO charts, and code examples throughout each chapter to clarify and illustrate key concepts at a glance.
• All end-of-chapter exercises are leveled and clearly identified to guide reader practice.
• Answers to this edition’s Mini-Quizzes and Labs are now contained in an Answers.pdf file, available to students at the student companion website.
• Engaging, brief videos further explain or expand upon the concepts presented in each chapter. The videos can be downloaded at the student companion website.
• Each chapter includes a new lab, called “What's Missing?” As part of this lab, students must determine which instructions are missing in a program.

CONTENTS

SUPPLEMENTS
Instructor Resources

ABOUT THE AUTHOR
Diane Zak
Prolific author and respected professional, Diane Zak continues to provide an inspiring and uncomplicated learning experience for students through her widely popular programming books. Diane Zak holds a Bachelor of Science degree in Computer Information Systems, a Bachelor of Science degree in Accounting, and a Master of Arts degree in Adult and Continuing Education. She has taught at various computer training centers and most recently served as professor at College of DuPage in Illinois.

Joyce Farrell

This edition of C# PROGRAMMING: FROM PROBLEM ANALYSIS TO PROGRAM DESIGN incorporates engaging new examples to introduce a variety of fundamental programming concepts, from data types and expressions to arrays and collections, all using the latest version of today's popular C# language. New programming exercises and numbered examples throughout this edition reflect the latest updates in Visual Studio® 2015 and C# 6.0, while learning objectives, case studies, and Coding Standards summaries in each chapter give your students the knowledge and tools they need to demonstrate mastery.

NEW TO THIS EDITION
• Up-to-date, thorough coverage highlights new and key features of C#.
• Learning objectives at the start of each chapter and case studies at the end of chapters reinforce important concepts.
• Coding standards in each chapter provide quick reference to today’s conventions and style guidelines.
• Advanced topics ensure this edition is ideal for experienced as well as introductory learners.
• Extensive examples and abundant hands-on practice effectively reinforce concepts.
• New programming exercises provide practice with Visual Studio® 2015

CONTENTS

SUPPLEMENTS
Instructor Resources
Microsoft® Visual C#: An Introduction to Object-Oriented Programming, Seventh Edition
Joyce Farrell

ISBN: 978-1-337-10210-0
©2018

This latest edition by Joyce Farrell offers approachable examples and a clear presentation to help students build a strong background in both structured and object-oriented programming concepts. It incorporates the most recent versions of both C# and Visual Studio to ensure students have the latest skills necessary for professional success.

KEY FEATURES
- Content throughout this edition is written and tested using C# and Visual Studio 2017 to ensure students are well equipped and up to date with contemporary programming practice.
- New language features such as ref returns, local functions, digit separators, use of "this." or "Me." on member access, and the expansion of usable governing types in switch expressions.
- New programming exercises in each chapter offer a variety of focused practice.
- Video lessons, narrated by author Joyce Farrell, help clarify even the most difficult topics in each chapter.
- Detailed step-by-step programs encourage readers to analyze, test, and modify code written by others.
- MindTap is the digital learning solution that powers students from memorization to mastery. It gives students hands-on skill practice with auto-graded lab assignments in a live integrated development environment. A full selection of instructor support provides the tools to reinforce the solid programming skills your students need.

CONTENTS

SUPPLEMENTS
Instructor Resources
MindTap
Microsoft Visual Basic 2015: RELOADED, Sixth Edition
Diane Zak

©2016
832 pages

This dynamic book provides a solid foundation in programming principles while clearly demonstrating how to most effectively use those principles. The book begins by covering the basics, from creating user interfaces to understanding variables, constants, and calculations. Building on this knowledge, coverage progresses to more advanced topics, such as manipulating and querying a Microsoft® Access database, creating Web applications, and creating classes and objects.

KEY FEATURES
• Two programming tutorials provide step-by-step instructions.
• "How-To" boxes highlight important concepts.
• New author-created videos clarify key concepts
• Exercises and projects map to learning objectives to more accurately evaluate student comprehension.
• Full applications emphasize coding within actual context for students.
• Clear instructions enable students to quickly begin using visual studio.

CONTENTS

SUPPLEMENTS
Instructor Resources
Teach your students to master the fundamentals of effective programming as they work through Visual Basic 2017’s latest features with PROGRAMMING WITH MICROSOFT® VISUAL BASIC® 2017, 8E by best-selling technology author Diane Zak. The wealth of hands-on applications in this book’s engaging real-world setting make this an ideal choice for your introduction to programming course. New hands-on applications, timely examples, and practical exercises address today’s students’ varied learning styles.

KEY FEATURES
• Two programming tutorials provide step-by-step instructions.
• "How-To" boxes highlight important concepts.
• New author-created videos clarify key concepts.
• Exercises and projects map to learning objectives to more accurately evaluate student comprehension.
• Full applications emphasize coding within actual context for students.
• Clear instructions enable students to quickly begin using visual studio.

CONTENTS

SUPPLEMENTS
Instructor Resources
MindTap
CLEARLY VISUAL BASIC: PROGRAMMING WITH MICROSOFT® VISUAL BASIC 2012, 3E by best-selling programming author Diane Zak uses a simple, proven, step-by-step approach that’s ideal for readers learning a first programming language. Clear, brief chapters introduce the latest Visual Basic 2012 in small, manageable segments without cumbersome technical jargon. This easy-to-follow book focuses on the fundamentals, emphasizing broader Visual Studio 2012 methods rather than specific Visual Basic functions, to ensure readers master essential programming skills that can easily transfer to other languages.

NEW TO THIS EDITION
- This edition explores the most important updates to Microsoft® Visual Studio® 2012. All code examples are presented using Windows 8 and have been thoroughly tested using both Windows 7 and 8.
- This edition clearly illustrates and clarifies concepts with vivid examples throughout each chapter drawn directly from business today.
- Ten updated Review Questions in every chapter, as well as numerous new exercises to provide extra choices for applications and study.

KEY FEATURES
- Most chapters in this concise edition are less than 25 pages, focusing on the key concepts for Visual Basic success.
- Each chapter contains a diverse assortment of exercises that feature various types of practice in a range of difficulty. This breadth ensures all types of learners have the opportunity to practice key programming skills.

CONTENTS

SUPPLEMENTS
Instructor Resources
Objective-C and iOS Programming: A Simplified Approach to Developing Apps for the Apple iPhone & iPad

Arshia Khan, The College of St. Scholastica

©2015
524 pages

This timely and innovative new text meets the need for a concise, one-semester book that provides a thorough introduction to iOS and Objective-C programming and their practical application in developing iPhone apps. The unique nature of the text highlights and clarifies potentially challenging concepts by providing abundant examples, end-of-chapter summaries, programming problems of varying complexity, and a full hands-on project/lab together with its solution. The book facilitates not only iOS and Objective-C programming but also actual app development in one semester by focusing only on the topics required to develop basic apps.

KEY FEATURES
- Provides a comprehensive introduction to iPhone app development through dual coverage of Objective-C and iOS programming.
- Streamlines and simplifies challenging topics through numerous examples and focused, concise chapters that cover only the topics required to develop basic apps.
- Integrates business topics into the world of app development through dynamic case studies in each chapter.
- Includes hands-on labs in each chapter with step-by-step instructions.
- Designed for students with knowledge of at least one object-oriented programming language; no prior knowledge of iOS development is required.
- Offers a complete set of instructor supplements, including a solutions set, test bank, instructor’s manual, and PowerPoint slides.

CONTENTS

SUPPLEMENTS
Instructor Resources
Android Boot Camp for Developers
Using Java®, Third Edition
Corinne Hoisington, Central Virginia Community College

©2016

Designed for a first-semester course in programming, the book is ideal for students with no prior Java® experience. The book's hands-on tutorial approach offers step-by-step instruction and numerous screen shots to guide readers through tasks with real-life app examples. Practical callouts and industry tips, exercises that extend learning beyond the book, and a variety of cases and assignments reinforce understanding of programming logic and Java® tools for Android Studio. Prepare student programmers to meet growing business demand for mobile apps with this engaging text.

CONTENTS
1. Voila! Meeting the Android using Android Studio.
4. Explore! Icons and Decision Making Controls.
7. Reveal! Displaying Pictures in a GridView.
8. Design! Using a DatePicker on a Tablet.
11. Discover! Persistent Data.

SUPPLEMENTS
Instructor Resources
Written in a clear and engaging style, WEB DESIGN: INTRODUCTORY, 6E helps students establish a strong foundation in contemporary web design skills while gaining a strong understanding of today's most relevant web topics, including SEO, HTML, and responsive web design.

NEW TO THIS EDITION
• Fully updated content presents today's most current coverage of key web design issues.
• New coverage highlights both user experience (UX) and user interface (UI) considerations.
• Expanded discussions on today's website analytics on how to measure, collect, analyze and record pertinent web data.
• Coverage emphasizes responsive web design concepts and techniques.
• MindTap is the digital learning solution that powers students from memorization to mastery. It gives instructors complete control of the course—to provide engaging content, to challenge every individual, and to build their confidence.

CONTENTS

SUPPLEMENTS
Instructor Resources
MindTap
NEW PERSPECTIVES ON HTML5, CSS3, AND JAVASCRIPT, 6E provides clear, comprehensive coverage of HTML, CSS, and JavaScript with a user-friendly approach that builds from the basics and does not require any prior knowledge on the subject. Detailed explanations of key concepts and skills make even challenging topics accessible to all students.

KEY FEATURES
- The New Perspectives Series’ signature case scenarios and case problems place the basic to most complex concepts within an understandable and practical context.
- Thorough tutorials and end-of-chapter exercises immediately capture students’ interest, offer helpful guidance, and allow them to explore the practical applications of key concepts.
- Practical case scenarios are woven throughout each chapter to help students understand how the concepts and skills relate to today’s professional environment.
- MindTap is the digital learning solution that powers students from memorization to mastery. It gives instructors complete control of the course—to provide engaging content, to challenge every individual, and to build their confidence.

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SUPPLEMENTS
Instructor Resources
MindTap
Now in its sixth edition, JAVASCRIPT guides beginning programmers through web application development using the JavaScript programming language. As with previous editions of the book, the authors introduce key web authoring techniques with a strong focus on industry application. New coverage includes developing for touchscreen and mobile devices, and using the jQuery library. A real-world project, similar to what students would encounter in a professional setting, is developed chapter by chapter.

KEY FEATURES

- Teaches Web authoring techniques to students with little or no programming experience using the industry-standard JavaScript language.
- New full-color interior design features multicolor code samples that visually identify language components and figures that accurately display project previews.
- Real-world projects are written in HTML5; all non-mobile projects are coded for IE8 compatibility.
- An entirely new chapter covers coding for mobile devices and touchscreens, and mobile versions of working projects are incorporated throughout the text.
- Includes a new chapter introducing the basics of jQuery.
- Fully revised to reflect current industry standards for creating arrays and objects, writing equality operators, and listening for events.

CONTENTS


SUPPLEMENTS

Instructor Resources
PRINCIPLES OF WEB DESIGN, Sixth Edition, guides readers through the entire web site creation process, while developing and enhancing HTML, CSS, and visual design skills along the way. Now updated to include content on designing and delivering web content for smartphones and tablets, this Sixth Edition features all-new sections on HTML5, CSS3, and responsive design as well as technical updates and new screen shots throughout.

**KEY FEATURES**
- Discusses the latest HTML5 and CSS3 design trends, including building responsive web pages for smartphones and tablets.
- Full color! This allows users to see the truly visual nature of the example web sites used to illustrate web design principles.
- Updated code samples and hands-on activities let students “dive under the hood” and get plenty of coding experience.
- Includes updated examples and information on web design for smartphones and tablets.
- Offers a new chapter on building responsive web pages.
- Updated to reflect the latest HTML5 and CSS3 standards and capabilities, focusing on HTML5 elements that create structure and interaction on web pages.

**CONTENTS**

**SUPPLEMENTS**
Instructor Resources
This book covers the basics of PHP and MySQL along with introductions to advanced topics including object-oriented programming and how to build Web sites that incorporate authentication and security. After you complete this course, you will be able to use PHP and MySQL to build professional quality, database-driven Web sites.

**KEY FEATURES**

- Enables users to utilize PHP and MySQL to build professional quality, database-driven Web sites, all with open source software.
- Covers the basics of PHP and MySQL along with advanced topics including object-oriented programming and how to build Web sites that incorporate authentication and security.
- Short *Careful* warnings called point out troublesome issues that you need to watch out for when writing PHP scripts.
- Short *Quizzes* serve as quick comprehension checks at the end of each major topic assess understanding of the section material.
- *Reinforcement Exercises* include both guided and free-form exercises that reinforce the skills learned in the chapter and build on your learning experience by providing additional ways to apply your knowledge in new situations.
- *Discovery Activities* apply the skills learned in the chapter to expand the functionality of an ongoing comprehensive Web site project.

**CONTENTS**


**SUPPLEMENTS**

Instructor Resources
PRINCIPLES OF HTML, XHTML, AND DHTML teaches students the basics of building structured Web pages with HTML and XHTML, how to add text and images to Web pages, how to create frames, tables, and forms, and how to format and design Web pages using Cascading Style Sheets (or CSS). This text gives equal treatment to both HTML and XHTML, covering all new HTML 5 features while highlighting the differences between the languages. The book will also include enhanced coverage of DHTML, as HTML, X/HTML, and DHTML are commonly taught in the same course. Each chapter provides clear, non-technical explanations of the important concepts and techniques of a particular language or tool. The focus, however, is on learning-by-doing as students complete typical Web authoring tasks, such as adding tables to Web pages.

KEY FEATURES

• Assumes no prior knowledge of HTML, XHTML, or CSS; this text is ideal for the beginning Web programmer.
• Offers extensive diagrams and tables that help readers to visualize common components and relationships.
• Displays code examples in a consistent format, including brief code snippets as well as more complete code listings.
• Provides extensive end-of-chapter material such as Reinforcement Exercises, Comprehension Checks, and Discovery Projects.
• Includes coverage of advanced topics such as the use of JavaScript, how to incorporate multimedia and executable content into a Web page, how to organize and define XML, and how to use Extensible Stylesheet Language (XSL).

CONTENTS


SUPPLEMENTS

Instructor Resources
Fred Beisse, Lane Community College

©2015
688 pages

This useful guide focuses on the information resources and technical tools students need most to function effectively in a support position. Students develop the skills to handle troubleshooting and problem solving, successfully communicate with clients, determine a client’s specific technology needs, train end-users, and handle budgeting and other management priorities. Clear, balanced coverage in this fully revised new edition highlights the latest trends and developments, from Web and email-based support to new features in Microsoft Windows, cloud computing, and ethical challenges.

KEY FEATURES
• Practical, straightforward approach to technical issues helps students build critical skills with confidence.
• Compelling role-playing scenarios spur dynamic class discussion.
• Numerous case studies illustrate troubleshooting and problem-solving skills at work in real situations.
• New examples illustrate the growing importance of tablet PCs and mobile technology in user support.
• Expanded coverage of ITIL guidelines illustrates how best practices are implemented in information technology.
• A new section on conflict resolution highlights the importance of working effectively on a project team as well as with difficult users.
• Examples of the kinds of questions asked on certification exams helps readers prepare to meet the expectations of exam providers.
• A new help desk software tool, LBE Desktop Helpdesk, is featured, including an appendix with hands-on activities using the software

CONTENTS

SUPPLEMENTS
Instructor Resources
This trusted, contemporary guide introduces the latest developments, research, resources and trends as they happen in computer user support. Readers explore the various types of service desks and gain a solid understanding of the diverse roles and skills required. They also review the processes and technologies that ensure a service desk is operating efficiently and effectively and see how today’s leading organizations measure service desk success. This edition references the very latest ITIL® 2011 best practices, leading quality and IT service management frameworks and standards to ensure readers have the most recent information regarding the role of outsourcing and certification in the service desk.

NEW TO THIS EDITION
• THE LATEST CONCEPTS KEEP READERS ON THE FOREFRONT OF PROGRESS. This edition introduces today’s computer user support with the most up-to-date concepts, the latest advancements in research, and emerging professional trends.
• NEW “TECHNOLOGY TRENDS” DEMONSTRATE HOW ADVANCEMENTS IN TECHNOLOGY IMPACT USER SUPPORT. The author discusses the influence of virtualization, cloud computing, and consumerization (bring your own device) on the service desk, as well as mobile, social, and multi-generational support.
• UPDATED ITIL® 2011 BEST PRACTICES KEEP READERS CURRENT WITH THE WORLD’S LEADING APPROACH TO IT SERVICE MANAGEMENT. All references to ITIL best practices now reflect ITIL 2011 standards.
• UPDATED CASE PROJECTS SUPPORT BLENDED LEARNING. Service Desk University Case Projects throughout this edition now reflect the latest technology developments and current trends. Revised Case Projects better support a blended learning strategy for all learning styles.

KEY FEATURES
USEFUL FIGURES AND SCREEN SHOTS CLARIFY HOW CONCEPTS APPLY IN TODAY’S BUSINESS WORLD. Invaluable figures and screen captures throughout this edition illustrate meaningful, real examples of key service desk concepts in action.

CONTENTS

SUPPLEMENTS
Instructor Resources
Donna Knapp

©2015
544 pages

A GUIDE TO CUSTOMER SERVICE SKILLS FOR THE SERVICE DESK PROFESSIONAL, the definitive service desk text now available in a fully revised fourth edition, teaches technical professionals the skills and work habits needed to successfully interact with customers and achieve job satisfaction. Each chapter describes a specific business skill, soft skill, or self-management skill required to deliver effective technical customer support while providing proven, how-to techniques for mastering that skill. Research and references have been updated in each chapter, and the latest ITIL® vocabulary and concepts are reflected throughout the text.

KEY FEATURES
• Updated to reflect the changing role of the service desk, including an examination of the Business Productivity Team concept and enterprise Genius Bars.
• Now includes coverage of multigenerational and multichannel support, such as the growing use of chat, social media, and avatars; also includes discussion of such key trends as bring your own device (BYOD).
• Features an introduction to DevOps, an emerging culture and professional movement that stresses communication, collaboration, and integration between software developers and IT operations professionals.

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