

Cambridge As And A Level Computing Coursebook

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Cambridge IGCSE® Computer Science Programming Book Richard Morgan 2015-08-06 This resource is written to follow the updated Cambridge IGCSE® Computer Science syllabus 0478 with examination from June and November 2016.

Quantum Computing for Computer Scientists Noson S. Yanofsky 2008-08-11 The multidisciplinary field of quantum computing strives to exploit some of the uncanny aspects of quantum mechanics to expand our computational horizons. Quantum Computing for Computer Scientists takes readers on a tour of this fascinating area of cutting-edge research. Written in an accessible yet rigorous fashion, this book employs ideas and techniques familiar to every student of computer science. The reader is not expected to have any advanced mathematics or physics background. After presenting the necessary prerequisites, the material is organized to look at different aspects of quantum computing from the specific standpoint of computer science. There are chapters on computer architecture, algorithms, programming languages, theoretical computer science, cryptography, information theory, and hardware. The text has step-by-step examples, more than two hundred exercises with solutions, and programming drills that bring the ideas of quantum computing alive for today's computer science students and researchers.

The Elements of Computing Systems Noam Nisan 2008 This title gives students an integrated and rigorous picture of applied computer science, as it comes to play in the construction of a simple yet powerful computer system.

Cambridge International AS and A Level Mathematics: Mechanics Coursebook Jan Dangerfield 2018-03-22 This series has been developed specifically for the Cambridge International AS & A Level Mathematics (9709) syllabus to be examined from 2020. Cambridge International AS & A Level Mathematics: Mechanics matches the corresponding unit of the syllabus, with clear and logical progression through. It contains materials on topics such as velocity and acceleration, force and motion, friction, connected particles, motion in a straight line, momentum, and work and energy. This coursebook contains a variety of features including recap sections for students to check their prior knowledge, detailed explanations and worked examples, end-of-chapter and cross-topic review exercises and 'Explore' tasks to encourage deeper thinking around mathematical concepts. Answers to coursebook questions are at the back of the book.

An Introduction to Parallel and Vector Scientific Computation Ronald W. Shonkwiler 2006-08-14 In

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this text, students of applied mathematics, science and engineering are introduced to fundamental ways of thinking about the broad context of parallelism. The authors begin by giving the reader a deeper understanding of the issues through a general examination of timing, data dependencies, and communication. These ideas are implemented with respect to shared memory, parallel and vector processing, and distributed memory cluster computing. Threads, OpenMP, and MPI are covered, along with code examples in Fortran, C, and Java. The principles of parallel computation are applied throughout as the authors cover traditional topics in a first course in scientific computing. Building on the fundamentals of floating point representation and numerical error, a thorough treatment of numerical linear algebra and eigenvector/eigenvalue problems is provided. By studying how these algorithms parallelize, the reader is able to explore parallelism inherent in other computations, such as Monte Carlo methods.

'a' *Level Computing (5th Edition)* Pat Heathcote 2004-08-15 This standard textbook has been comprehensively revised by experienced teacher and examiner Sylvia Langfield. Arranged in five modules corresponding to the AQA specification, there are exercises and past exam questions at the end of each chapter.

The Art of Failure Jesper Juul 2013-02-22 An exploration of why we play video games despite the fact that we are almost certain to feel unhappy when we fail at them. We may think of video games as being "fun," but in *The Art of Failure*, Jesper Juul claims that this is almost entirely mistaken. When we play video games, our facial expressions are rarely those of happiness or bliss. Instead, we frown, grimace, and shout in frustration as we lose, or die, or fail to advance to the next level. Humans may have a fundamental desire to succeed and feel competent, but game players choose to engage in an activity in which they are nearly certain to fail and feel incompetent. So why do we play video games even though they make us unhappy? Juul examines this paradox. In video games, as in tragic works of art, literature, theater, and cinema, it seems that we want to experience unpleasantness even if we also dislike it. Reader or audience reaction to tragedy is often explained as catharsis, as a purging of negative emotions. But, Juul points out, this doesn't seem to be the case for video game players. Games do not purge us of unpleasant emotions; they produce them in the first place. What, then, does failure in video game playing do? Juul argues that failure in a game is unique in that when you fail in a game, you (not a character) are in some way inadequate. Yet games also motivate us to play more, in order to escape that inadequacy, and the feeling of escaping failure (often by improving skills) is a central enjoyment of games. Games, writes Juul, are the art of failure: the singular art form that sets us up for failure and allows us to experience it and experiment with it. *The Art of Failure* is essential reading for anyone interested in video games, whether as entertainment, art, or education.

The Computing Universe Tony Hey 2014-12-08 Computers now impact almost every aspect of our lives, from our social interactions to the safety and performance of our cars. How did this happen in such a short time? And this is just the beginning. In this book, Tony Hey and Gyuri Pápay lead us on a journey from the early days of computers in the 1930s to the cutting-edge research of the present day that will shape computing in the coming decades. Along the way, they explain the ideas behind hardware, software, algorithms, Moore's Law, the birth of the personal computer, the Internet and the Web, the Turing Test, Jeopardy's Watson, World of Warcraft, spyware, Google, Facebook and quantum computing. This book also introduces the fascinating cast of dreamers and inventors who brought these great technological developments into every corner of the modern world. This exciting and accessible introduction will open up the universe of computing to anyone who has ever wondered where his or her smartphone came from.

Cambridge IGCSE® and O Level Computer Science Programming Book for Python Chris Roffey 2017-02-02 This resource is written to follow the updated Cambridge IGCSE® Computer Science syllabus 0478 with examination from June and November 2016. Cambridge IGCSE® and O Level Computer Science Programming Book for Python accompanies the Cambridge IGCSE and O Level Computer Science coursebook, and is suitable for students and teachers wishing to use Python in their studies. It introduces and develops practical skills to guide students in developing coding solutions to the tasks presented in the book. Starting from simple skills and progressing to more complex challenges, this book shows how to approach a coding problem using Structure Diagrams and Flow Charts, explains programming logic using pseudocode, develops Python programming skills and gives full solutions to the tasks set.

Cambridge International AS and A Level Computing Coursebook Chris Leadbetter 2012-03 Written for the AS/A-Level Computing syllabus, this coursebook follows the bullet points of the syllabus chronologically.

Quantum Computation and Quantum Information Michael A. Nielsen 2000-10-23 First-ever comprehensive introduction to the major new subject of quantum computing and quantum information.

Probability and Computing Michael Mitzenmacher 2005-01-31 "This textbook is designed to accompany a one- or two-semester course for advanced undergraduates or beginning graduate students in computer science and applied mathematics. - It gives an excellent introduction to the probabilistic techniques and paradigms used in the development of probabilistic algorithms and analyses. - It assumes only an elementary background in discrete mathematics and gives a rigorous yet accessible treatment of the material, with numerous examples and applications."--Jacket.

Cambridge IGCSE® Computer Science Coursebook Sarah Lawrey 2015-11-12 This resource is written to follow the updated Cambridge IGCSE® Computer Science syllabus 0478 with examination from June and November 2016.

Complete Computer Science for Cambridge IGCSE® and O Level Student Book Alison Page 2016-08-26 Build confidence for the latest Cambridge syllabus with the practical, skills-based approach of Complete Computer Science. The Student Book is supported by an extensive Teacher Guide to help you effectively deliver the course. Ensure understanding and strengthen achievement with extensive programming support and practical activities.

Quantum Computing Eleanor G. Rieffel 2014-08-29 A thorough exposition of quantum computing and the underlying concepts of quantum physics, with explanations of the relevant mathematics and numerous examples. The combination of two of the twentieth century's most influential and revolutionary scientific theories, information theory and quantum mechanics, gave rise to a radically new view of computing and information. Quantum information processing explores the implications of using quantum mechanics instead of classical mechanics to model information and its processing. Quantum computing is not about changing the physical substrate on which computation is done from classical to quantum but about changing the notion of computation itself, at the most basic level. The fundamental unit of computation is no longer the bit but the quantum bit or qubit. This comprehensive introduction to the field offers a thorough exposition of quantum computing and the underlying concepts of quantum physics, explaining all the relevant mathematics and offering numerous examples. With its careful development of concepts and thorough explanations, the book makes quantum computing accessible to students and professionals in mathematics, computer science, and engineering. A reader with no prior knowledge of quantum physics (but with sufficient knowledge of linear algebra) will be able to gain a fluent understanding by working through the book.

Oxford International Primary Computing: Student Alison Page 2015-01-29 Oxford International Primary Computing takes a real-life, project based approach to teaching young learners the vital computing skills they need for the changing digital world. Each unit builds a series of skills towards the creation of final project, with topics ranging from programming simple computer games to creating an online yearbook.

Cambridge International As and a Level Computer Science Coursebook Cambridge

Quantum Computer Science N. David Mermin 2007-08-30 In the 1990's it was realized that quantum physics has some spectacular applications in computer science. This book is a concise introduction to quantum computation, developing the basic elements of this new branch of computational theory without assuming any background in physics. It begins with an introduction to the quantum theory from a computer-science perspective. It illustrates the quantum-computational approach with several elementary examples of quantum speed-up, before moving to the major applications: Shor's factoring algorithm, Grover's search algorithm, and quantum error correction. The book is intended primarily for computer scientists who know nothing about quantum theory, but will also be of interest to physicists who want to learn the theory of quantum computation, and philosophers of science interested in quantum foundational issues. It evolved during six years of teaching the subject to undergraduates and graduate students in computer science, mathematics, engineering, and physics, at Cornell University.

International Computing for Lower Secondary Student's Book Stage 7 Siobhan Matthewson 2020-05-18 Deliver an exciting computing course for ages 11-14, providing full coverage of Digital Literacy, Computer Science and Information and Communications Technology objectives. The course covers the requirements of the national curriculum for England and is mapped to the Level 2 CSTA K-12 Computer Science Standards and the Cambridge Assessment International Education Digital Literacy Framework for Stages 7-9. - Ensure progression, with a clear pathway of skill steps building on previous experience and knowledge. - Recap and activate students' prior knowledge and skills with Do you remember? panels. - Demonstrate and practise new concepts and skills with Learn and Practice activities. - Broaden knowledge and understanding with Go further activities that apply skills and concepts in different contexts. - Introduce more challenging skills and activities with Challenge yourself! tasks. - Allow students to demonstrate their knowledge and skills creatively with engaging end of unit projects. - Develop computational thinking with panels throughout the activities. - Provide clear guidance on e-safety with a strong focus throughout. - Clear progression for students going on to study IGCSE Computer Science and IGCSE Information Technology. Available in the series: Stage 7 Student's Book: 9781510481985 Stage 7 Student eTextbook 9781510483538 Stage 7 Whiteboard eTextbook 9781510483545 Stage 7 Online Teacher's Guide 9781510483484 Stage 8 Student's Book: 9781510481992 Stage 8 Student eTextbook 9781510483569 Stage 8 Whiteboard eTextbook 9781510483552 Stage 8 Online Teacher's Guide 9781510483491 Stage 9 Student's Book: 9781510482005 Stage 9 Student eTextbook 9781510483606 Stage 9 Whiteboard eTextbook 9781510483590 Stage 9 Online Teacher's Guide 9781510483507

A/AS Level Computer Science for OCR Student Book Alistair Surrall 2017-10-05 Written for the OCR A/AS Level Computer Science specifications for first teaching from 2015, this print student book helps students build their knowledge and master underlying computing principles and concepts. The student book develops computational thinking, programming and problem-solving skills. Suitable for all abilities, it puts computing into context and gives students a real-life view on professional applications of computing skills. Answers to end-of-chapter questions are located in the free online teacher's resource. A Cambridge Elevate enhanced edition is also available.

Cloud Computing Sandeep Bhowmik 2017-07-04 "Follows structured approach explaining cloud techniques, models and platforms"--

GCSE Computer Science for AQA Student Book David Waller 2016-06-02 A new series of bespoke, full-coverage resources developed for the 2016 AQA and OCR GCSE Computer Science qualifications. Written for the AQA GCSE Computer Science specification for first teaching from 2016, this print Student Book uses an exciting and engaging approach to help students build their knowledge and master underlying computing principles and concepts. Designed to develop computational thinking, programming and problem-solving skills, this resource includes challenges that build on learning objectives, and real-life examples that demonstrate how computer science relates to everyday life. Remember features act as revision references for students and key mathematical skills relevant to computer science are highlighted throughout. A digital Cambridge Elevate-enhanced Edition and a free digital Teacher's Resource are also available.

Quantum Computing Since Democritus Scott Aaronson 2013-03-14 Takes students and researchers on a tour through some of the deepest ideas of maths, computer science and physics.

Cambridge International As and a Level Computer Science Cambridge Elevate Teacher's Resource Sylvia Langfield 2019-06-26

Cloud Computing Nayan B. Ruparelia 2016-05-06 Why cloud computing represents a paradigm shift for business, and how business users can best take advantage of cloud services. Most of the information available on cloud computing is either highly technical, with details that are irrelevant to non-technologists, or pure marketing hype, in which the cloud is simply a selling point. This book, however, explains the cloud from the user's viewpoint—the business user's in particular. Nayan Ruparelia explains what the cloud is, when to use it (and when not to), how to select a cloud service, how to integrate it with other technologies, and what the best practices are for using cloud computing. Cutting through the hype, Ruparelia cites the simple and basic definition of cloud computing from the National Institute of Science and Technology: a model enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources. Thus with cloud computing, businesses can harness information technology resources usually available only to large enterprises. And this, Ruparelia demonstrates, represents a paradigm shift for business. It will ease funding for startups, alter business plans, and allow big businesses greater agility. Ruparelia discusses the key issues for any organization considering cloud computing: service level agreements, business service delivery and consumption, finance, legal jurisdiction, security, and social responsibility. He introduces novel concepts made possible by cloud computing: cloud cells, or specialist clouds for specific uses; the personal cloud; the cloud of things; and cloud service exchanges. He examines use case patterns in terms of infrastructure and platform, software information, and business process; and he explains how to transition to a cloud service. Current and future users will find this book an indispensable guide to the cloud.

A History of Modern Computing, second edition Paul E. Ceruzzi 2003-04-08 From the first digital computer to the dot-com crash—a story of individuals, institutions, and the forces that led to a series of dramatic transformations. This engaging history covers modern computing from the development of the first electronic digital computer through the dot-com crash. The author concentrates on five key moments of transition: the transformation of the computer in the late 1940s from a specialized scientific instrument to a commercial product; the emergence of small systems in the late 1960s; the beginning of personal computing in the 1970s; the spread of networking after 1985; and, in a chapter written for this edition, the period 1995-2001. The new material focuses on the Microsoft antitrust suit, the rise and fall of the

dot-coms, and the advent of open source software, particularly Linux. Within the chronological narrative, the book traces several overlapping threads: the evolution of the computer's internal design; the effect of economic trends and the Cold War; the long-term role of IBM as a player and as a target for upstart entrepreneurs; the growth of software from a hidden element to a major character in the story of computing; and the recurring issue of the place of information and computing in a democratic society. The focus is on the United States (though Europe and Japan enter the story at crucial points), on computing per se rather than on applications such as artificial intelligence, and on systems that were sold commercially and installed in quantities.

Cambridge International AS & A Level Computer Science David Watson 2019-07-15 This title is endorsed by Cambridge Assessment International Education to support the full syllabus for examination from 2021. Develop computational thinking and ensure full coverage of the revised Cambridge Assessment International Education AS & A Level Computer Science syllabus (9618) with this comprehensive Student's Book written by experienced authors and examiners. - Improve understanding with clear explanations, examples, illustrations and diagrams, plus a glossary of key terms - Reinforce learning with a range of activities, exercises, and exam-style questions - Prepare for further study with extension activities that go beyond the requirements of the syllabus and prompt further investigation about new developments in technology - Follow a structured route through the course with in-depth coverage of the full AS & A Level syllabus - Answers are available online www.hoddereducation.co.uk/cambridgeextras Also available in the series Programming skills workbook ISBN: 9781510457683 Student eTextbook ISBN: 9781510457614 Whiteboard eTextbook ISBN: 9781510457621

Computational Complexity Sanjeev Arora 2009-04-20 New and classical results in computational complexity, including interactive proofs, PCP, derandomization, and quantum computation. Ideal for graduate students.

Cambridge International AS and A Level English Language Coursebook Mike Gould 2014-08-21 Comprehensive student-friendly resources designed for teaching Cambridge International AS and A Level English Language (syllabus 9093). The core aim of this Coursebook is to help students to develop and apply the key skills they need to achieve in AS and A Level English Language. They will build the skills needed for assessment through frequent activities. Divided into two distinct parts for AS and A Level studies, the book covers a wide range of reading skills, such as understanding aspects of style, voice and tone. It also addresses the conventions of key kinds of writing and spoken language, from scripted speeches to travel articles, and looks at how they can capture these conventions in their own work.

Cambridge International AS and A Level Computer Science Revision Guide Tony Piper 2016-04-14 Cambridge International AS and A Level Computer Science offers a complete set of resources to accompany the 9608 syllabus. This revision guide helps students to prepare and practice skills for the Cambridge AS and A Level Computer Science examination. It contains clear explanations and key information to support learners, with additional practice questions to help students feel confident and reinforce their understanding of key concepts.

Cambridge International AS and A Level IT Coursebook with CD-ROM Paul Long 2016-01-04 This series is for the Cambridge International AS & A Level IT syllabus (9626) for examination from 2019. This coursebook provides a clear and comprehensive guide to assist students as they develop theoretical and practical IT skills. It contains detailed explanations of theoretical and practical concepts and tasks, with worked examples and exercises to consolidate knowledge. Practical tasks are offered throughout the

book, with source files on the accompanying CD-ROM, to help students build and develop their practical knowledge.

Introduction to Information Retrieval Christopher D. Manning 2008-07-07 Class-tested and coherent, this textbook teaches classical and web information retrieval, including web search and the related areas of text classification and text clustering from basic concepts. It gives an up-to-date treatment of all aspects of the design and implementation of systems for gathering, indexing, and searching documents; methods for evaluating systems; and an introduction to the use of machine learning methods on text collections. All the important ideas are explained using examples and figures, making it perfect for introductory courses in information retrieval for advanced undergraduates and graduate students in computer science. Based on feedback from extensive classroom experience, the book has been carefully structured in order to make teaching more natural and effective. Slides and additional exercises (with solutions for lecturers) are also available through the book's supporting website to help course instructors prepare their lectures.

Cambridge International AS and A Level Chemistry Coursebook with CD-ROM Lawrie Ryan 2014-07-31 Fully revised and updated content matching the Cambridge International AS & A Level Chemistry syllabus (9701). Endorsed by Cambridge International Examinations, the Second edition of the AS/A Level Chemistry Coursebook comprehensively covers all the knowledge and skills students need for AS/A Level Chemistry 9701 (first examination 2016). Written by renowned experts in Chemistry, the text is written in an accessible style with international learners in mind. The Coursebook is easy to navigate with colour-coded sections to differentiate between AS and A Level content. Self-assessment questions allow learners to track their progression and exam-style questions help learners to prepare thoroughly for their examinations. Contemporary contexts and applications are discussed throughout enhancing the relevance and interest for learners.

Cambridge International AS and A Level Mathematics: Pure Mathematics 2 & 3 Coursebook Sue Pemberton 2018-03-15 This series has been developed specifically for the Cambridge International AS & A Level Mathematics (9709) syllabus to be examined from 2020. Cambridge International AS & A Level Mathematics: Pure Mathematics 2 & 3 matches the corresponding units of the syllabus. It clearly indicates materials required for P3 study only, and contains materials on topics such as logarithmic and exponential functions, trigonometry, differentiation, integration, numerical solutions of equations, vectors and complex numbers. This coursebook contains a variety of features including recap sections for students to check their prior knowledge, detailed explanations and worked examples, end-of-chapter and cross-topic review exercises and 'Explore' tasks to encourage deeper thinking around mathematical concepts. Answers to coursebook questions are at the back of the book.

Cambridge International AS and A Level Physics Coursebook with CD-ROM David Sang 2014-08-07 Fully revised and updated content matching the Cambridge International AS & A Level Physics syllabus (9702). Endorsed by Cambridge International Examinations, the Second edition of the AS/A Level Physics Coursebook comprehensively covers all the knowledge and skills students need for AS/A Level Physics 9702 (first examination 2016). Written by renowned experts in Physics, the text is written in an accessible style with international learners in mind. The Coursebook is easy to navigate with colour-coded sections to differentiate between AS and A Level content. Self-assessment questions allow learners to track their progression and exam-style questions help learners to prepare thoroughly for their examinations. Contemporary contexts are discussed throughout enhancing the relevance and interest for learners.

Cambridge International AS and A Level Literature in English Coursebook Elizabeth Whittome 2014-07-24 Comprehensive student-friendly resources designed for teaching Cambridge International AS and A Level Literature in English (syllabus 9695). This Coursebook is a comprehensive guide to the study of Literature in English at AS and A Level, encouraging both the enjoyment of literature and rigorous academic study. It provides a clear approach for any Literature studies syllabus, and is divided into three parts: Part 1 and Part 2 covering poetry, prose and drama at AS and A Level respectively, and Part 3 covering key skills needed to succeed in assessment. It contains a range of stimulating literary material from around the world, including poems and extracts from plays and prose fiction, selected to include Cambridge set texts.

International Computing for Lower Secondary Student's Book Stage 9 Siobhan Matthewson 2020-10-12 Deliver an exciting computing course for ages 11-14, providing full coverage of Digital Literacy, Computer Science and Information and Communications Technology objectives. The course covers the requirements of the national curriculum for England and is mapped to the Level 2 CSTA K-12 Computer Science Standards and the Cambridge Assessment International Education Digital Literacy Framework for Stages 7-9. - Ensure progression, with a clear pathway of skill steps building on previous experience and knowledge. - Recap and activate students' prior knowledge and skills with Do you remember? panels. - Demonstrate and practise new concepts and skills with Learn and Practice activities. - Broaden knowledge and understanding with Go further activities that apply skills and concepts in different contexts. - Introduce more challenging skills and activities with Challenge yourself! tasks. - Allow students to demonstrate their knowledge and skills creatively with engaging end of unit projects. - Develop computational thinking with panels throughout the activities. - Provide clear guidance on e-safety with a strong focus throughout. - Clear progression for students going on to study IGCSE Computer Science and IGCSE Information Technology. Available in the series: Stage 7 Student's Book: 9781510481985 Stage 8 Student's Book: 9781510481992 Stage 9 Student's Book: 9781510482005

Cambridge International AS and A Level Computer Science Coursebook Sylvia Langfield 2015-12-17 "Cambridge International AS and A Level Computer Science Coursebook delivers an accessible guide to theoretical and practical skills in Computer Science, with a clear progression of tasks that help to consolidate and develop knowledge. Cambridge International AS and A Level Computer Science Coursebook offers students detailed descriptions of the concepts, reinforced with examples that outline complex subject matter in a clear way. Alongside fundamental definitions, higher level programming skills are developed through the explanation of processes and consolidated by practical exam-type questions for students to attempt."-- Publisher description.

Cambridge International AS & A Level Computer Science David Watson 2019-07-15 This title is endorsed by Cambridge Assessment International Education to support the full syllabus for examination from 2021. Develop computational thinking and ensure full coverage of the revised Cambridge Assessment International Education AS & A Level Computer Science syllabus (9618) with this comprehensive Student's Book written by experienced authors and examiners. - Improve understanding with clear explanations, examples, illustrations and diagrams, plus a glossary of key terms - Reinforce learning with a range of activities, exercises, and exam-style questions - Prepare for further study with extension activities that go beyond the requirements of the syllabus and prompt further investigation about new developments in technology - Follow a structured route through the course with in-depth coverage of the full AS & A Level syllabus - Answers are available online www.hoddereducation.co.uk/cambridgeextras Also available in the series Programming skills workbook ISBN: 9781510457683 Student eTextbook ISBN: 9781510457614 Whiteboard eTextbook ISBN: 9781510457621

Unlocking the Clubhouse Jane Margolis 2003-02-28 Understanding and overcoming the gender gap in computer science education. The information technology revolution is transforming almost every aspect of society, but girls and women are largely out of the loop. Although women surf the Web in equal numbers to men and make a majority of online purchases, few are involved in the design and creation of new technology. It is mostly men whose perspectives and priorities inform the development of computing innovations and who reap the lion's share of the financial rewards. As only a small fraction of high school and college computer science students are female, the field is likely to remain a "male clubhouse," absent major changes. In *Unlocking the Clubhouse*, social scientist Jane Margolis and computer scientist and educator Allan Fisher examine the many influences contributing to the gender gap in computing. The book is based on interviews with more than 100 computer science students of both sexes from Carnegie Mellon University, a major center of computer science research, over a period of four years, as well as classroom observations and conversations with hundreds of college and high school faculty. The interviews capture the dynamic details of the female computing experience, from the family computer kept in a brother's bedroom to women's feelings of alienation in college computing classes. The authors investigate the familial, educational, and institutional origins of the computing gender gap. They also describe educational reforms that have made a dramatic difference at Carnegie Mellon—where the percentage of women entering the School of Computer Science rose from 7% in 1995 to 42% in 2000—and at high schools around the country.