PowerPoint Slides

C for Engineers and Scientists

An Interpretive Approach

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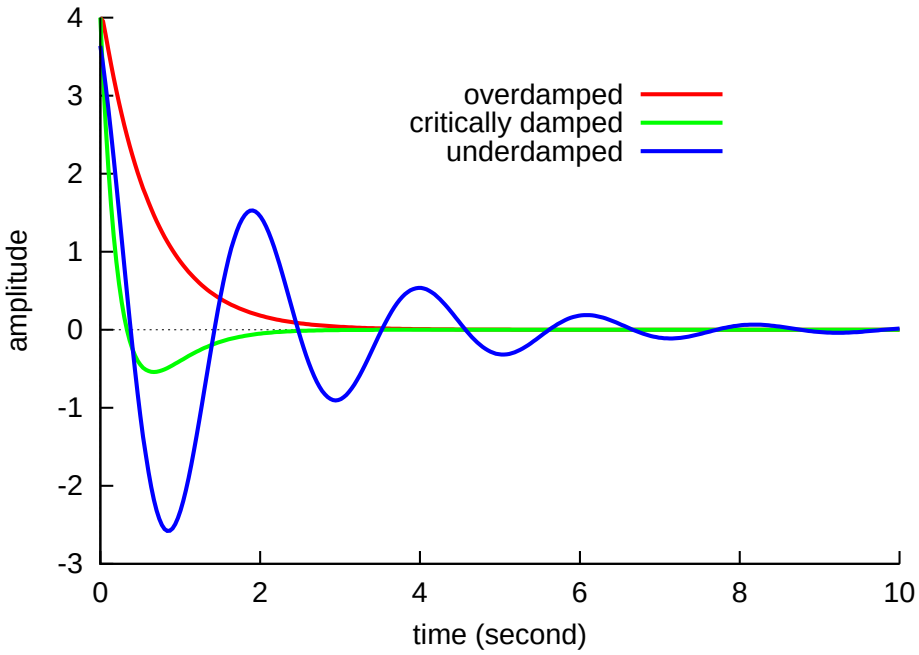

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Preface to the Instructor

C for Engineers and Scientists: An Interpretive Approach is a comprehensive book on software development for solving problems in engineering and science with complete coverage of the C language and other programming languages. The materials are more than enough for a one-semester course. The book can be used as an introductory textbook for students majoring in engineering, computer science, and science.

Unlike other introductory textbooks for teaching one course only, this book can also serve as a reference book for students who intend to take other advanced courses or during engineering practice after their graduation. Sections and chapters marked with the double dagger symbol **'‡'** in the title can be skipped without hindering learning about the later chapters. The materials marked with the symbol '‡', however, are very useful for those who plan on serious software development in C, need to read existing C code written by experienced programmers, or intend to take other advanced courses.

Part I is organized cumulatively except for Chapter 16 "Scientific Computing in the Entire Real Domain in C99," and Chapter 17 "Programming with Complex Numbers in C99 and C++." These two chapters can be read after Chapter 11 "Pointers" is finished. Other parts are self-contained. After covering sections not marked with the double dagger symbol '‡' in Part I, one can move to Part II. Likewise, after finishing Chapter 10 "Arrays" in Part I, one can continue to Part III or Part IV.

There are over 1,400 PowerPoint slides for lectures and 200 PowerPoint slides for discussion sessions. These suplementary PowerPoint slides for the book have been used for an introductory computer programming course **Computer Programming for Engineering Applications** for freshman students at the University of California, Davis over the years. In this course, it is assumed that students have no any prior computer programming experience. All sections and chapters not marked with the double dagger symbol '‡' are covered in one quarter with ten weeks. Each week has three one-hour lectures, one hour discussion, and several lab hours. It takes eight weeks to cover Chapters 1-8 and 10-14 in Part I, one week on computational arrays in Chapter 21 in Part III and plotting in Chapter 20 in Part II, and one week on Chapter 23 in Part IV for comparison study with MATLAB.

PowerPoint slides in other chapters have been used in other advanced undergraduate and graduate courses. The optional materials marked with the double dagger symbol '‡' are in slides at the end of each chapter following the slide labeled ‡**Slides for optional topics in C**. If C/C++ interpreter Ch specific features are presented, they will be placed in slides following the slide labeled ‡**Slides for optional topics in Ch** at the end for each chapter.

Depending on your teaching objectives, you may teach at a different pace and select different topics. If your course is offered in a semester, additional topics marked with the double dagger symbol '‡' may be covered.

For your convenience, all programs presented in the PowerPoint slides for each discussion session are located in in a separate directory in this distribution of PowerPoint slides. All programs in the book and presented the PowerPoint slides for lectures can be downloaded from the author's Web site http://iel.ucdavis.edu/cfores.

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