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## *Preface*

Ever since the early 1980s, the Web has grown, expanded, and evolved. HTML5 is a new standard and it promises to revolutionize the Web. Today, the Web is omnipresent and part of our daily lives. In addition to Web access from the home and office, modern users carry it with them on laptops, tablets, and smartphones. Commercial outfits are finding it necessary to offer Web access to their customers, often without charge.

Organizations large and small as well as individuals are increasingly dependent on the Web. The need for well-trained and competent Web developers and maintainers is ever increasing. This book provides a comprehensive and up-to-date guide to Web programming, covering new Web standards as well as emphasizing dynamism and user friendliness.

The text helps you master Web development with a complete set of well-selected topics. Hands-on practice is encouraged; it is the only way to gain experience with the technologies and techniques for building superb sites.

An overview of the Web and Internet provides a whole-forest view. The chapters lead you from page structuring (HTML), page layout/styling (CSS), user input processing (forms and PHP), dynamic user interfaces (JavaScript), database-driven websites (PHP+MySQL), and more, all the way to mobile website development.

There are many examples and complete programs ready to run. A companion website provides appendices, information updates, an example code package, and other resources for instructors as well as students. See page 609 for details.

### **Standard Web Technologies**

The exciting new HTML5 with its associated open Web platform standards is a major focus of this textbook. Topics include the HTML5 markup language, new elements for structuring Web documents and forms, CSS3, the HTML5 Document Object Model, and important JavaScript APIs associated with HTML5.

Dynamic page generation and server-side programming with PHP is another major focus. Topics include page templates, form processing, session control, user login, database access, and server-side HTTP requests.

Also covered are more advanced topics such as XML, AJAX, Web ser-

vices, PHP+MySQL, the LAMP (Linux Apache MySQL and PHP) server environment, SVG, MathML, and mobile websites.

Many examples are given to illustrate programming techniques and to show how things work together to achieve practical goals.

## **User Friendly and Comprehensive**

There is both breadth and depth in this book's presentation. After the overview in Chapter 1, the user is guided through a well-selected set of topics covering the type of detailed material appropriate for an intensive one-semester course, or a comprehensive two-semester sequence, at the advanced undergraduate or beginning graduate level.

## **Concepts and Skills**

The text balances teaching specific Web programming languages, APIs, and coding techniques with in-depth understanding of the underlying concepts, theory, and principles. Both are important for a well-rounded training that can withstand the test of time and rapidly evolving technologies.

## **Flexible Usage**

This book is for people who wish to learn modern standard Web technologies and their practical applications. The book does not assume prior knowledge of Web development, but has the depth to satisfy even those with good experience.

Compared to other Web programming books, this text is not a thick volume. However, it is comprehensive and in depth. Many examples are given to illustrate concepts and usage. It has more than enough material for a one-semester course. An instructor can cover all the chapters in sequence or choose among them depending on the class being taught.

For an introduction to Web programming course, the materials on LAMP Web hosting, XML, MathML, and SVG can safely be omitted. For an advanced Web programming course, the first few chapters can be assigned for reading at the beginning of the class. This will provide more time for the hard-core programming topics later in the book.

For a two-semester sequence, the text can serve the programming part very well. An instructor may consider adding some artistic design topics also. The author has a co-authored text that does an excellent job of integrating visual communication design with Web programming.

For an introduction to database course, the PHP-MySQL part of this book can be a great boost.

For those who wish to develop and maintain their own websites, this book can be a valuable ally.

## Live Examples Online

Throughout the book, concepts and programming techniques are thoroughly explained with examples. Instead of using contrived examples, however, every effort has been made to give examples with practical value and to present them as complete webpages ready to run on your browser. You can experiment with the live examples on the book's companion website (the DWP website) at

<http://dwp.sofpower.com>

The live examples are organized by chapter and cross-referenced to in-text descriptions with a notation such as **Ex:SlideShow** that also appears in the book's index.

Furthermore, all programs covered in the book are collected in an *example code package* ready to download from the DWP website. See page 609 for instructions on obtaining access to the DWP website.

## Appendices Online

The table of contents lists all the appendices, but to reduce the volume of the book, we are keeping the appendices online at the DWP website.

The appendices in PDF are easier to use and search. The appendix "Secure Communication with SSH and SFTP" is a webpage so we can supply download and usage hyperlinks. This arrangement also allows us to add and improve the appendices in the future.

## Easy Reference

You will find a smooth readable style uncharacteristic of a book of this type. Nevertheless, it is understood that such books are used as much for reference as for concentrated study, especially once the reader gets going with Web development. Therefore, information is organized and presented in a way that also facilitates quick and easy reference. The DWP website provides ample resource listings and information updates. The in-text examples are also cross-referenced with live examples online. The book also has a thorough and comprehensive index and should remain a valuable aid for any Web developer.

## Acknowledgments

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- Rex Kenley, Programmer/System Analyst, Davey Tree Expert Company

Several chapters from the book draft have been used in Web development classes here at Kent State, and I would like to thank the students for reading the materials and providing feedback.

Finally, I want to express my sincere gratitude to my wife Jennifer, whose support and encouragement have been so important to me through the years.

To my darling granddaughter Emma Clarke, the *tigger girl*, I dedicate this book.

*Paul S. Wang*

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