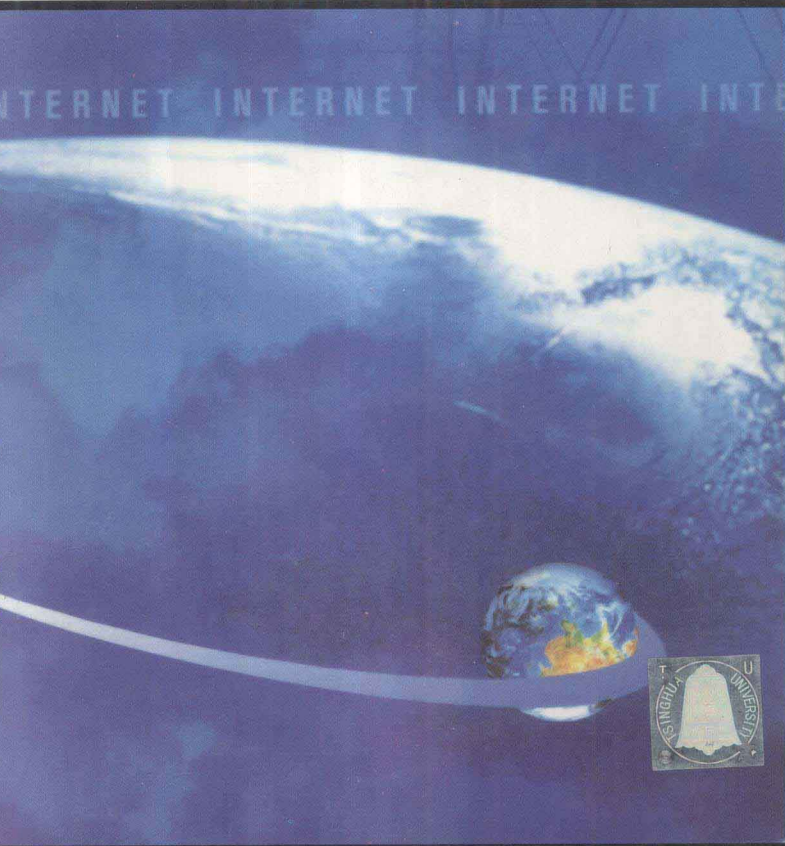


大学计算机教育丛书（影印版）

In-line / On-line:
Fundamentals of the
INTERNET and the World Wide Web
Raymond Greenlaw, Ellen Hepp

因特网与万维网
基本原理与技术



清华大学出版社

<http://www.tup.tsinghua.edu.cn>

Mc
Graw
Hill

WCB
McGraw-Hill

In-line/On-line:

Fundamentals of the

INTERNET and the World Wide Web

因特网与万维网基本原理与技术

RAYMOND GREENLAW

Armstrong Atlantic State University

ELLEN HEPP

The University of New Hampshire

江苏工业学院图书馆
藏书章

清华大学出版社

McGraw-Hill **WCB**
McGraw-Hill

(京)新登字 158 号

**IN-LINE/ON-LINE: FUNDAMENTALS OF THE INTERNET AND
THE WORLD WIDE WEB**

Raymond Greenlaw, Ellen Hepp.

Copyright © 1999 by The McGraw-Hill Companies, Inc.

Original English Language Edition published by The McGraw-Hill Companies, Inc.

All rights Reserved.

For sale in Mainland China only.

本书影印版由 McGraw-Hill 出版公司授权清华大学出版社在中国境内(不包括香港特别行政区、澳门特别行政区和台湾地区)独家出版、发行。

未经出版者书面许可,不得用任何方式复制或抄袭本书的任何部分。

本书封面贴有清华大学出版社激光防伪标签,无标签者不得销售。

北京市版权局著作权合同登记号: 01-99-1447

图书在版编目(CIP)数据

因特网与万维网基本原理与技术: 英文/格林劳(Greenlaw, R.), 赫普(Hepp, E.) 著. - 影印本. - 北京: 清华大学出版社, 2000.5

(大学计算机教育丛书)

ISBN 7-302-03891-0

I. 因… II. ①格…②赫… III. ①因特网-基本知识-手册-英文②万维网-基本知识-手册-英文 IV. TP393

中国版本图书馆 CIP 数据核字(2000)第 61190 号

出版者: 清华大学出版社(北京清华大学学研楼, 邮编 100084)

[http:// www.tup.tsinghua.edu.cn](http://www.tup.tsinghua.edu.cn)

印刷者: 清华大学印刷厂

发行者: 新华书店总店北京发行所

开 本: 787×960 1/16 印张: 36

版 次: 2000 年 7 月第 1 版 2000 年 7 月第 1 次印刷

书 号: ISBN 7-302-03891-0/TP·2271

印 数: 0001~4000

定 价: 49.00 元

出版者的话

今天,我们的大学生、研究生和教学、科研工作者,面临的是一个国际化的信息时代。他们将需要随时查阅大量的外文资料;会有更多的机会参加国际性学术交流活动;接待外国学者;走上国际会议的讲坛。作为科技工作者,他们不仅应有与国外同行进行口头和书面交流的能力,更为重要的是,他们必须具备极强的查阅外文资料获取信息的能力。有鉴于此,在原国家教委所颁布的“大学英语教学大纲”中有一条规定:专业阅读应作为必修课程开设。同时,在大纲中还规定了这门课程的学时和教学要求。有些高校除开设“专业阅读”课之外,还在某些专业课拟进行英语授课。但教、学双方都苦于没有一定数量的合适的英文原版教材作为教学参考书。为满足这方面的需要,我们陆续精选了一批国外计算机科学方面最新版本的著名教材,进行影印出版。我社获得国外著名出版公司和原著作者的授权将国际先进水平的教材引入我国高等学校,为师生们提供了教学用书,相信会对高校教材改革产生积极的影响。

我们欢迎高校师生将使用影印版教材的效果、意见反馈给我们,更欢迎国内专家、教授积极向我社推荐国外优秀计算机教育教材,以利我们将《大学计算机教育丛书(影印版)》做得更好,更适合高校师生的需要。

清华大学出版社
《大学计算机教育丛书(影印版)》项目组
1999.6

Preface

The Internet has experienced spectacular growth over the last few years. A wide range of knowledge is needed by anyone interested in publishing on and participating in the *World Wide Web*. Many would argue that all members of society should have a basic understanding of computing principles and the capability to track down information on the Web. In other words, everyone should be *Internet literate*. The amount of information available on-line is so vast that anyone interested in obtaining timely news, stock updates, a hard-to-find product, or basic research information cannot overlook the Web.

The level of sophistication for which we are aiming in this book is not the “point and click” level, nor the “hacker” end of the spectrum. We are interested in helping you learn enough that you are comfortable performing the following functions (among others):

- Sending and receiving electronic mail (e-mail).
- Browsing the World Wide Web.
- Publishing on the Web.
- Coding in HyperText Markup Language (HTML).
- Using search engines.
- Processing on-line information in a critical fashion.
- Using such Internet applications as Telnet and FTP.
- Submitting forms on-line.
- Conducting research on-line.
- Developing a good grasp of computer terminology and acronyms.
- Reading and posting to newsgroups and mailing lists.
- Understanding chat rooms and MUDs.
- Downloading and installing plug-ins to view multimedia.
- Understanding basic security and copyright issues involving computers.

Who Should Read This Book

Anyone interested in learning about the Internet and the World Wide Web will benefit from this book. You will learn about concepts, rather than specific details about short-lived pieces of software. Our goal is to help you develop the confidence and skills to create a lifelong interest in computers, the Internet, and the Web. Computers already play a significant role in the lives of nearly everyone. So, even if the Web is not around in its current form in five years, a technology based on similar principles involving computers no doubt will be.

More specifically, this book is a good starting point:

1. For the student with an interest in becoming computer literate.
2. For the professional who needs to ramp up quickly before getting left behind in the technological world.
3. For all those seeking a career in a computer-related field.
4. For the retired person who wants to add another dimension to their¹ life.

Organization of the Text

The material in this text is organized for a one-semester college course. The subject matter is presented in an order acceptable to an inexperienced computer user. Those with more experience may decide to skim over some of the early sections. The book also contains numerous exercises at the end of each section. It can also be used as a self-study guide for anyone interested in recent computing developments revolving around the Internet.

The book chapters deal with the following topics: e-mail, Web browsing, Web page installation, the Internet, the World Wide Web, search tools, Telnet and FTP, HTML, Web graphics, HTML tools, newsgroups and mailing lists, chat rooms and MUDs, electronic publishing, Web programming, multimedia, and privacy and security issues.

The appendices provided deal with more specialized issues, such as Internet Service Providers, text editors, mailers, and operating systems. In addition, we provide a list of references, a list of all HTML tags presented in the book, a glossary, a list of all acronyms used in the book, a place for you to record your own URLs, and an index.

Icons are used in the margin of the text to highlight important or interesting points and to suggest activities to the reader.

¹ In this book, we use the pronouns “their,” “them,” and “they,” even where the correct usage is singular. This seems to be a better solution than: (1) using he/she, (2) alternating the gender of pronouns throughout the book, or (3) using “she” to compensate for years of overuse of masculine pronouns.



Denotes an interesting tidbit of information, a factoid.



Notes a hint.



Marks extensive or important information.



Go on-line and experiment using the commands described in the text.



Flags a recent news item.



Surf the Web to experiment with the topic explained in the text.

Accompanying Web Presentations

Two Web presentations are associated with this book: one called “class” and the other called “book.” The class presentation can be customized by an instructor and includes the following material: assignments, frequently asked questions, grading information, a hall of fame, information for parents, a project outline, a student directory, a syllabus, and a “welcome” message.

The book presentation contains the following items: a set of lecture summaries, a collection of useful links for each chapter, additional examples (not contained in the book) that utilize many HTML tags, HTML code for all of the “screen shots” contained in the book, search engine links, sample quizzes, updates of recent material/new developments, and corrections.

The on-line presentations can be accessed through McGraw Hill’s Web presentation:

www.mhhe.com

or by visiting one of our Web pages.



Legal and Ethical Guidelines

You will want to read on-line information, review paper handouts, and discuss local policies with your system administrator. The standard rules follow common sense. Let us express the guidelines in the form of a “do not” list:

- Copy, borrow, or steal another person’s work.
- Try to break into another person’s account.
- Forge e-mail.
- Steal passwords.
- Make selfish use of system resources.
- Produce offensive material.
- Violate computer policies.

In summary, exercise good judgment and remember that using computer facilities is considered a privilege, not a right.

Suggestions and Corrections

The text may contain some errors, and certain topics that readers feel are especially relevant may have been omitted. In anticipation of possible future printings, we would like to correct our mistakes and incorporate as many suggestions as possible. Please send comments to us via e-mail at:

emhepp@aol.com or greenlaw@pirates.Armstrong.edu



Corrigenda and additions to this work can be found at:

www.mhhe.com/greenlaw

We especially welcome input from students.

Acknowledgements

A very special thanks to Jim Cerny for providing expert advice on a large number of topics described in this book and for braving the original Internet course waters with me. Jim greatly influenced the way the course and book developed; both are much better because of his early involvement. Jim provided us with hundreds of wonderful suggestions.

A very special thanks to Jim Wogulis, also known as “Javaman,” who co-authored Chapter 12 with us.

A very special thanks to Laurel for a careful and timely reading. Her comments greatly helped to improve this work.

A very special thanks to Christine Ransom for a careful reading and for her expert help in developing the Web presentations for the book.

Thanks to Chris Plummer for designing the graphics for the book’s accompanying Web presentations. Chris developed the “swoosh” idea.

A very special thanks to Andy Evans for quick, concise, and knowledgeable answers to numerous technical questions. Thanks to Gina Ross and Andy Evans for excellent technical support.

A special thanks to Mark Bochert who taught from an early version of the book.

Thanks to Linda Spring-Andrews for her support during this project. Thanks to Linda and Dana Pavel Hulubei for assistance with the cover design.

Thanks to Dan Bergeron for his timely answers to a number of questions relating to the graphics material.

Thanks to the reviewers: Dennis Foreman, of Binghamton University; Sherry Clark, of Oregon State University; Hugo Moortgat, of San Francisco State University; Tom Costello, of the University of Massachusetts, Lowell; Floyd Lecureux, of California State University, Sacramento; and Hilbert Levitz, of Florida State University. We appreciate your interest in this book and your valuable suggestions.

A very special thanks to the students at the University of New Hampshire who enrolled in Computer Science 403 during the academic years 1996–97 and 1997–98. Their comments and suggestions have helped to make this a better book. Many students in these classes deserve a special mention and thanks: Nathaniel Burnham, Carolyn Coe, Jeremy Collins, Christine Connelly, Rebecca Cook, Damon Gabrielle, Matthew Goddard, James Sabol, Meghan Simone, Natalia Starosselskaia, Heather Tatham, Katharine Tristaino, Jonathan Whorf, and Jeremy Willis. An extra special thanks to Monalisa Agrawal, Michael Klein, Dan Lipsa, and Tyrone Lochmandy.

Ray Greenlaw
Ellen Hepp

Contents in Brief

Preface	xix
1 Fundamentals of Electronic Mail	1
2 Jump Start: Browsing and Publishing	37
3 The Internet	87
4 The World Wide Web	127
5 Searching the World Wide Web	169
6 Telnet and FTP	195
7 Basic HTML	209
8 Web Graphics	259
9 Advanced HTML	299
10 Newsgroups, Mailing Lists, Chat Rooms, and MUDs	349
11 Electronic Publishing	383
12 Web Programming Material	395
13 Multimedia	423
14 Privacy and Security Topics	437
A Internet Service Providers	455
B Text Editing	461
C Pine Mail Program	467
D Basic UNIX	477
E HTML Tags	487
F Acronyms	495
G My URLs	499
Glossary	515
Bibliography	529
Index	535

Contents

Preface	xix
1 Fundamentals of Electronic Mail	1
1.1 Introduction	1
1.2 E-Mail: Advantages and Disadvantages	2
1.2.1 Advantages	3
1.2.2 Disadvantages	3
1.3 Userids, Passwords, and E-Mail Addresses	5
1.3.1 Userids	5
1.3.2 Passwords	6
1.3.3 E-Mail Addresses	7
1.3.4 Domain Names	8
1.3.5 E-Mail Address Determinations	10
1.3.6 Local and Systemwide Aliases	10
1.4 Message Components	13
1.5 Message Composition	16
1.5.1 Structure	17
1.5.2 Netiquette	19
1.5.3 Composition	20
1.6 Mailer Features	22
1.6.1 Compose, File, and Reply	23
1.6.2 Bracketed Text and Include	23
1.6.3 Forwarding	25
1.7 E-Mail Inner Workings	26
1.7.1 Mailer, Mail Server, and Mailbox	26
1.7.2 Store and Forward Features	27
1.7.3 Central Mail Spool and IMAP	29
1.7.4 Bounce Feature	30
1.8 E-Mail Management	32
1.8.1 Action Options	32
1.8.2 Vacation Programs	33
1.8.3 E-Mail and Businesses	34
1.9 MIME Types	35

2	Jump Start: Browsing and Publishing	37
2.1	Introduction	37
2.2	Browser Bare Bones	37
2.2.1	Browser Window Terminology	38
2.2.2	Menu Bar	39
2.2.3	Toolbar	40
2.2.4	Hot Buttons	42
2.2.5	Hyperlinks	43
2.3	Coast-to-Coast Surfing	43
2.3.1	Web Terminology	44
2.3.2	Uniform Resource Locator (URL)	45
2.4	HyperText Markup Language: Introduction	47
2.4.1	HTML Tag Syntax	48
2.4.2	HTML Document Creation	49
2.5	Web Page Installation	52
2.5.1	Basic Principles	53
2.5.2	A Specific Example	53
2.6	Web Page Setup	56
2.6.1	Head Tag	56
2.6.2	HTML and Colors	62
2.6.3	Body Tag	64
2.6.4	HTML Font Colors	68
2.6.5	Font Size	68
2.6.6	Font Face	69
2.6.7	HTML Comments	70
2.7	HTML Formatting and Hyperlink Creation	73
2.7.1	Paragraph Tag	74
2.7.2	Heading Tags	75
2.7.3	Anchor Tag	77
2.7.4	Image Tag	82
3	The Internet	87
3.1	Introduction	87
3.2	The Internet Defined	88
3.2.1	The Information Superhighway	88
3.2.2	Interesting Internet Facts	89
3.3	Internet History	90
3.3.1	1960s Telecommunications	91
3.3.2	1970s Telecommunications	91
3.3.3	1980s Telecommunications	92
3.3.4	1990s Telecommunications	93
3.3.5	Internet Growth	95

3.4	The Way the Internet Works	96
3.4.1	Network Benefits	96
3.4.2	Interconnected Networks and Communication	97
3.4.3	Physical Components	99
3.4.4	Network Connections	99
3.4.5	Client-Server Model	100
3.4.6	IP Addresses	100
3.4.7	Internet Protocol Version 6 (IPv6)	103
3.4.8	Web Page Retrieval	103
3.5	Internet Congestion	105
3.5.1	World Wide Wait Problem	105
3.5.2	Technical Solutions	106
3.5.3	Issues and Predictions	107
3.6	Internet Culture	108
3.6.1	Critical Evaluation of Information	109
3.6.2	Freedom of Expression	109
3.6.3	Communication Mechanisms	111
3.6.4	Advertising	112
3.6.5	Societal Impact	113
3.7	Business Culture and the Internet	114
3.7.1	On-Line Businesses	115
3.7.2	Three Sample Companies	116
3.7.3	On-Line Business Hurdles	118
3.7.4	Cookies	118
3.7.5	Business and Safety/Security on the Web	119
3.7.6	Legal Environment	119
3.7.7	U.S. Government's Commitment to Electronic Commerce	120
3.8	Collaborative Computing and the Internet	121
3.8.1	Collaborative Computing Defined	121
3.8.2	Applications	122
3.8.3	Impact	123
3.8.4	Future Prospects	124
4	The World Wide Web	127
4.1	Introduction	127
4.2	The Web Defined	127
4.3	Miscellaneous Web Browser Details	129
4.3.1	Personal Preferences	129
4.3.2	Bookmarks	130
4.3.3	Plug-ins and Helper Applications	133
4.3.4	Web Browsers Comparison: Netscape and Microsoft	134

4.4	Web Writing Styles	136
4.4.1	The Biography	137
4.4.2	The Business Exposition	139
4.4.3	The Guide	141
4.4.4	The Tutorial	141
4.4.5	Writing Genres Summary	144
4.5	Web Presentation Outline, Design, and Management	145
4.5.1	Goal Setting	146
4.5.2	Outlining	148
4.5.3	Navigating	153
4.5.4	Designing and Coding	156
4.5.5	Revising	157
4.6	Registering Web Pages	159
4.7	Lynx: Text-Based Web Browser	160
4.7.1	Starting Lynx	163
4.7.2	Basic Navigation	163
4.7.3	Features	164
4.7.4	Bookmarks	164
4.7.5	Printing	164
4.7.6	Images	165
4.7.7	Lynx Commands Summary	166
5	Searching the World Wide Web	169
5.1	Introduction	169
5.2	Directories, Search Engines, and Metasearch Engines	170
5.2.1	Directories	170
5.2.2	Popular Directories	171
5.2.3	Search Engines	171
5.2.4	Popular Search Engines	173
5.2.5	Metasearch Engines	173
5.2.6	Popular Metasearch Engines	173
	Ellen and Ray's Choices	174
5.2.7	White Pages	174
5.2.8	Popular White Pages	174
5.3	Search Fundamentals	175
5.3.1	Search Terminology	177
5.3.2	Pattern Matching Queries	178
5.3.3	Boolean Queries	180
5.3.4	Search Domain	181
5.3.5	Search Subjects	182

5.4	Search Strategies	183
5.4.1	Too Few Hits: Search Generalization	183
5.4.2	Too Many Hits: Search Specialization	184
5.4.3	Sample Searches	184
5.5	How Does a Search Engine Work?	186
5.5.1	Search Engine Components	186
5.5.2	User Interface	187
5.5.3	Searcher	187
5.5.4	Evaluator	187
5.5.5	Gatherer	188
5.5.6	Indexer	192
5.5.7	Summary	192
6	Telnet and FTP	195
6.1	Introduction	195
6.2	Telnet and Remote Login	195
6.2.1	Telnet	196
6.2.2	Remote Login	199
6.3	File Transfer	200
6.3.1	Graphical File Transfer Clients	201
6.3.2	Text-Based File Transfer Clients	203
6.3.3	File Compression	204
6.3.4	Anonymous File Transfer	204
6.3.5	Archie	205
6.4	Computer Viruses	206
6.4.1	Definitions	206
6.4.2	Virus Avoidance and Precautions	207
7	Basic HTML	209
7.1	Introduction	209
7.2	Semantic Versus Syntactic Based Style Types	209
7.2.1	Semantic Based Style Types	210
7.2.2	Syntactic Based Style Types	215
7.2.3	Style Type Usage	218
7.3	Headers and Footers	219
7.3.1	Headers	219
7.3.2	Horizontal Rule Tag	221
7.3.3	Footers	222

7.4	Lists	225
7.4.1	Ordered Lists	225
7.4.2	Unordered Lists	227
7.4.3	Definition Lists	229
7.4.4	Nested Lists	231
7.5	Tables	237
7.5.1	Table Usage	237
7.5.2	HTML Table Tags	238
7.5.3	Frequently Asked Questions	252
7.6	Debugging	255
8	Web Graphics	259
8.1	Introduction	259
8.2	Popular Image Formats	260
8.2.1	Image Compression	260
8.2.2	Image Acquisition and Display	260
8.2.3	Graphics Interchange Format (GIF)	263
8.2.4	Joint Photographic Experts Group (JPG)	264
8.2.5	Portable Network Graphics (PNG)	266
8.3	GIF Features	267
8.3.1	Animated GIFs	267
8.3.2	Interlaced GIFs	269
8.3.3	Transparent Images	269
8.4	Image Tag Revisited	271
8.4.1	Image and Text Alignment	272
8.4.2	Additional ALIGN Attribute Values	273
8.4.3	Summary: ALIGN Attribute Values	273
8.4.4	Horizontal Image Alignment	275
8.4.5	Wrapped Text	275
8.4.6	Text Wrap Prevention	276
8.4.7	Spacing Control	277
8.4.8	Centered Images	278
8.4.9	Image Borders	279
8.4.10	Low Source (LOWSRC) Images	279
8.5	Image Maps	281
8.5.1	Server-Side Image Maps	281
8.5.2	Client-Side Image Maps	283
8.5.3	Summary: Image Maps	288
8.6	Scanners	289
8.6.1	Scanner Types	289
8.6.2	Scanner Selection	291