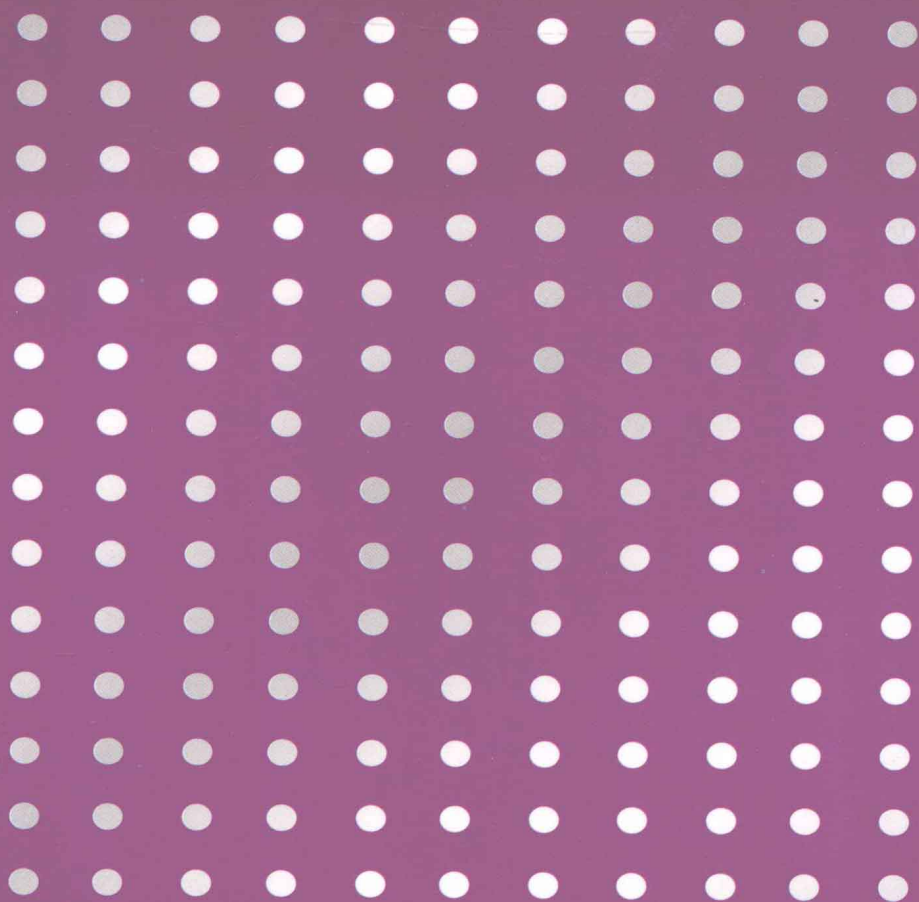


高等院校信息技术规划教材

计算机英语

邱仲潘 等编著

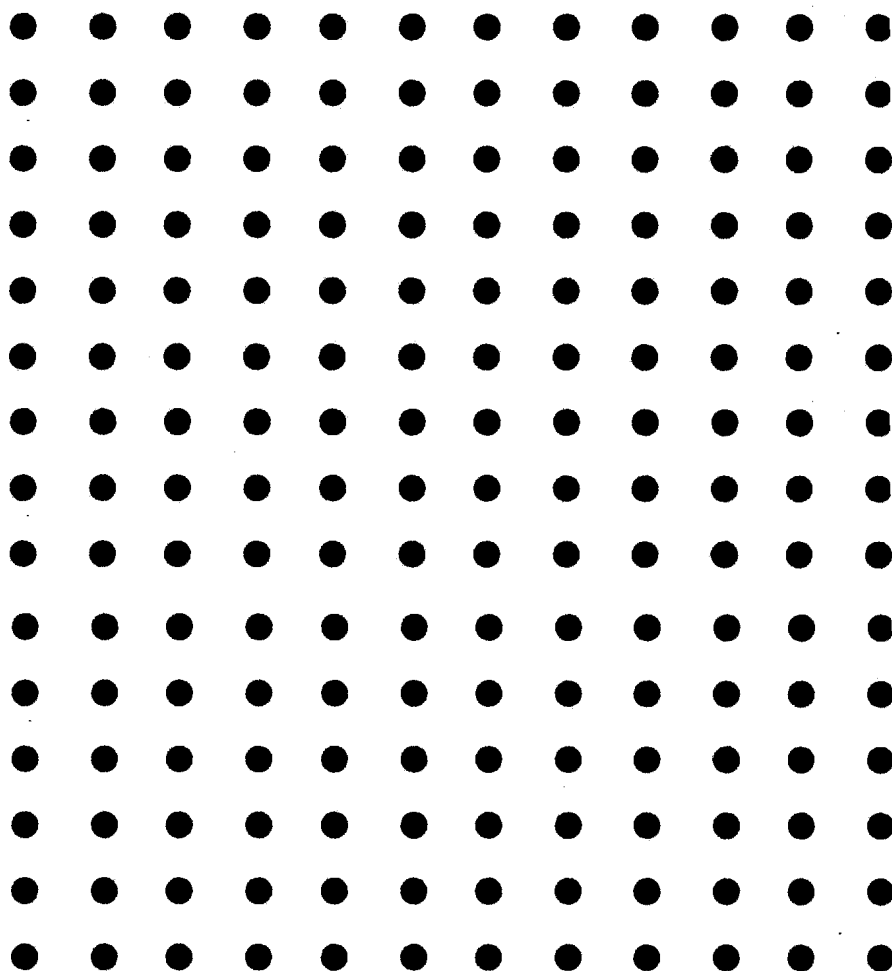


清华大学出版社

高等院校信息技术规划教材

计算机英语

邱仲潘 等编著



清华大学出版社
北京

内 容 简 介

本书共分为 20 章,每章由正文、关键词、练习和课外阅读等部分组成,此外,每章还提供了参考译文。章节安排既成体系又相互独立,涉及了硬件、软件、系统、网络、应用程序等计算机相关知识。

本书由一线教师编写,这些教师了解学生的知识水平、接受能力和需求点,而且翻译过大量计算机图书,有丰富的翻译经验。本书强调阅读理解,注重专业术语和基本科技英语的语法,对一些难句进行了深入的解析,其中相关知识包括翻译技巧以及技术和语言方面的知识。

本书可作为高等院校“计算机英语”课程的教材或教学参考书,也可供有一定英语基础的广大计算机用户学习计算机英语时使用。

本书封面贴有清华大学出版社防伪标签,无标签者不得销售。

版权所有,侵权必究。侵权举报电话:010-62782989 13701121933

图书在版编目(CIP)数据

计算机英语/邱仲潘等编著. —北京:清华大学出版社,2011.10

(高等院校信息技术规划教材)

ISBN 978-7-302-26358-6

I. ①计… II. ①邱… III. ①电子计算机—英语—高等学校—教材 IV. ①H31

中国版本图书馆 CIP 数据核字(2011)第 156645 号

责任编辑:龙啟铭 李 晔

责任校对:时翠兰

责任印制:何 芊

出版发行:清华大学出版社

地 址:北京清华大学学研大厦 A 座

<http://www.tup.com.cn>

邮 编:100084

社 总 机:010-62770175

邮 购:010-62786544

投稿与读者服务:010-62795954, jsjic@tup.tsinghua.edu.cn

质 量 反 馈:010-62772015, zhiliang@tup.tsinghua.edu.cn

印 装 者:三河市李旗庄少明印装厂

经 销:全国新华书店

开 本:185×260

印 张:26.5

字 数:630 千字

版 次:2011 年 10 月第 1 版

印 次:2011 年 10 月第 1 次印刷

印 数:1~3000

定 价:39.50 元

产品编号:037730-01

前言

Foreword

计算机技术的发展,最初是从英语国家开始的,目前美国具有绝对优势。从事计算机行业的人,难免会遇到大量英文资料,无论是外版教材、技术手册、联机说明,还是阅读或者发表高水平的专业论文,都必须使用英语。因此,学好专业英语对计算机专业学生来说非常重要。

本书是针对计算机专业学生编写的。计算机专业学生的基本要求是读懂外方的软件需求文档和在编程中根据要求插入简单的注释文本,因此在本书编写过程中,作者一直认为应该强调阅读理解、强调简单文本写作以及强调专业术语和基本科技英语语法。同时,为了提高效率和便于工作中的资料积累与交流,应该介绍一些翻译技巧,使学生能够把看懂的内容用比较准确和流畅的中文表达出来,能够把软件设计与实现中的思路翻译成简单英文。为此,特意挑选一些难句,在给出准确翻译的同时选择学生常见的翻译错误进行剖析,增加学生的理解深度。课文后面还用英语提供了关键词的解释,便于有兴趣的学生可以了解到许多相关专业知识和有趣的词源知识。相关知识包括翻译技巧以及技术方面和语言方面的知识,非常实用。文章后面还有参考读物,难度略大于课文。建议老师在保证让学生掌握课文内容的前提下,根据学生接受情况和兴趣决定教学内容的深浅。俗话说,“兴趣是成功之母”,教材努力通过各种背景知识和词源知识增加趣味性,老师还可以通过调动学生积极参与课堂教学活动激发学生的学习兴趣,可以鼓励学生自己从网络和其他地方寻找相关资料,扩大视野,并且把学到的专业英语知识应用到其他专业课程的学习中,学以致用,切实体会计算机英语的作用,变“要我学”为“我要学”。

本书1~12章由邱仲潘负责,作者翻译了大量计算机科学图书,积累了许多素材,辅助材料大部分是由邱仲潘提供的。宋智军同志负责13~17章,王帅同志负责18~20章内容。在本书写作过程中,刘文红、邹文、邓欣欣、王润涛、周丹丹、朱敏、张朋丽、刘文琼、张艺永等同志也投入了大量工作,在此深表感谢。由于时间仓促,书中难免存在错误和缺漏之处,期待各位老师和同学不吝赐教,以便今后修订时改正和增补。

编 者

2011年9月

目录

Contents

Chapter 1	PC Basic	1
1.1	Text	1
1.1.1	Storage	1
1.1.2	Outer Hardware	4
1.2	Notes	6
1.2.1	Keywords	6
1.2.2	Exercise	8
1.3	Related Topics	8
	计算机英语漫谈	8
1.4	Additional Reading	10
	Flash Memory	10
1.4.1	The Basics	10
1.4.2	Removable Flash Memory Cards	11
1.4.3	SmartMedia	11
1.4.4	CompactFlash	12
1.5	Text Translation	13
Chapter 2	How Computer Monitors Work	17
2.1	Text	17
2.1.1	The Basics	17
2.1.2	Display Technology Background	18
2.1.3	Display Technologies: VGA	18
2.1.4	Display Technology: DVI	19
2.1.5	Viewable Area	19
2.1.6	Maximum Resolution and Dot Pitch	19
2.1.7	Dot Pitch	20
2.1.8	Refresh Rate	20

2.1.9	Color Depth	21
2.1.10	Power Consumption	21
2.1.11	Monitor Trends: Flat Panels	22
2.2	Notes	22
2.2.1	Keywords	24
2.2.2	Exercise	25
2.3	Additional Reading	25
	Liquid Crystal Display	25
2.3.1	Brief History	27
2.3.2	Transmissive and Reflective Displays	27
2.3.3	Color Displays	28
2.3.4	Passive-matrix and Active-matrix	28
2.3.5	Quality Control	28
2.3.6	Zero-power Displays	29
2.3.7	Drawbacks	29
2.4	Text Translation	30
	计算机显示器是如何工作的?	30
Chapter 3	How Cell Phones Work	35
3.1	Text	35
3.1.1	Cell-phone Frequencies	36
3.1.2	Cell-phone Channels	37
3.1.3	Analog Cell Phones	38
3.1.4	Along Comes Digital	39
3.1.5	Inside a Digital Cell Phone	39
3.2	Notes	42
3.2.1	Keywords	42
3.2.2	Exercise	43
3.3	Related Material	43
	科技英语概述	43
3.4	Additional Reading	47
	Cell Phone	47
3.4.1	History	48
3.4.2	Handsets	50
3.5	Text Translation	54
	手机如何工作	54

Chapter 4	Digital Camera Basics	60
4.1	Text	60
4.1.1	How does Digital Camera Work?	60
4.1.2	CCD and CMOS: Filmless Cameras	60
4.1.3	Digital Camera Resolution	62
4.1.4	Capturing Color	63
4.1.5	Digital Photography Basics	63
4.1.6	Megapixel Ratings	64
4.1.7	Digital Camera Settings and Modes	65
4.1.8	Shutter Speed	65
4.2	Notes	66
4.2.1	Keywords	67
4.2.2	Exercise	68
4.3	Related Topics	69
	科技英语概述(续)	69
4.4	Additional Reading	73
	How to Take Good Photos	73
4.4.1	Digital Camera Problems	74
4.4.2	Image Editing Software	74
4.5	Text Translation	77
Chapter 5	How Bits and Bytes Work	82
5.1	Text	82
5.1.1	Decimal Numbers	82
5.1.2	Bits	83
5.1.3	Bytes	84
5.1.4	Bytes: ASCII	84
5.1.5	Standard ASCII Character Set	85
5.1.6	Lots of Bytes	86
5.1.7	Binary Math	86
5.1.8	Quick Recap	87
5.2	Notes	87
5.3	Related Topics	87
	英语数字书写规则	87
5.4	Additional Reading	89
	How Boolean Logic Works	89

5.4.1	Simple Gates	90
5.4.2	Simple Adders	93
5.4.3	Flip Flops	96
5.4.4	Implementing Gates	98
5.5	Text Translation	100
	位和字节是怎样工作的	100
Chapter 6	Microprocessors	105
6.1	Text	105
6.1.1	Microprocessor History	105
6.1.2	Microprocessor Progression	106
6.1.3	Inside a Microprocessor	107
6.1.4	Microprocessor Instructions	109
6.1.5	Decoding Microprocessor Instructions	113
6.1.6	Microprocessor Performance	113
6.1.7	Microprocessor Trends	114
6.1.8	64-bit Processors	114
6.2	Notes	115
6.3	Related Topics	115
	翻译方法简述	115
6.4	Additional Reading	118
	E-commerce	118
6.4.1	Commerce	118
6.4.2	The Elements of Commerce	119
6.4.3	Why the Hype?	121
6.4.4	The Dell Example	122
6.4.5	The Lure of E-commerce	123
6.4.6	Easy and Hard Aspects of E-commerce	124
6.4.7	Building an E-commerce Site	124
6.4.8	Affiliate Programs	125
6.4.9	Implementing an E-commerce Site	126
6.5	Text Translation	127
	微处理器概述	127
Chapter 7	Application Software	135
7.1	Text	135
7.1.1	What is Software	135

7.1.2	Programming Languages	135
7.1.3	Libraries	137
7.1.4	The Program Development Process	138
7.1.5	Writing your Own Programs	140
7.2	Notes	140
7.3	Related Topics	141
	词义的选择	141
7.4	Additional Reading	143
	Computer Software	143
7.4.1	Relationship to Hardware	143
7.4.2	System and Application Software	144
7.4.3	Users See Three Layers of Software	144
7.4.4	Software Creation	145
7.4.5	Software in Operation	145
7.4.6	Software Reliability	145
7.4.7	Software Patents	145
7.4.8	System Software	145
7.5	Text Translation	146
	应用软件	146
Chapter 8	Compiler	150
8.1	Text	150
8.1.1	Introduction to Compiler	150
8.1.2	Introduction and History	150
8.1.3	Types of Compilers	151
8.1.4	Compiled vs. Interpreted Languages	152
8.1.5	Compiler Design	152
8.1.6	Compiler Front End	153
8.1.7	Compiler Back End	153
8.1.8	Notes	154
8.1.9	References	154
8.2	Notes	154
8.3	Related Topics	155
	翻译中的直译和意译	155
8.4	Additional Reading	158
	Assembly Language	158
8.4.1	Assemblers	158
8.4.2	Assembly Language	160

8.4.3	Machine Instructions	161
8.4.4	Assembly Language Directives	162
8.4.5	Usage of Assembly Language	162
8.4.6	Cross Compiler	163
8.4.7	Compiling a Gcc Cross Compiler	163
8.5	Text Translation	164
	编译器	164
Chapter 9	How Java Works	168
9.1	Text	168
9.1.1	A Little Terminology	169
9.1.2	Downloading the Java Compiler	169
9.1.3	Your First Program	171
9.1.4	Understanding What Just Happened	173
9.2	Notes	175
9.3	Related Topics	176
	词法和句法翻译技巧简介	176
9.4	Additional Reading	178
	How Perl Works	178
9.4.1	Getting Started	178
9.4.2	Hello World	178
9.4.3	Variables	180
9.4.4	Loops and Ifs	181
9.4.5	Functions	182
9.4.6	Reading	183
9.5	Text Translation	184
	Java 是如何工作的	184
Chapter 10	Database & C++	190
10.1	Text	190
	Choosing Visual C++ as Your Database Development Platform	191
10.2	Notes	193
10.3	Related Topics	194
	加/减词译法	194
10.4	Additional Reading	197
	C++	197
10.4.1	Technical Overview	197

10.4.2	Features Introduced in C++	197
10.4.3	C++ Library	198
10.4.4	Object-oriented Features of C++	199
10.4.5	Design of C++	202
10.4.6	History of C++	203
10.4.7	C++ is not a Superset of C	205
10.5	Text Translation	205
	数据库与VC++	205
Chapter 11	Artificial Intelligence	209
11.1	Text	209
11.1.1	Overview	209
11.1.2	Strong AI and Weak AI	209
11.1.3	History Development of AI Theory	212
11.1.4	Experimental AI Research	213
11.2	Notes	214
11.3	Related Topics	216
	英汉词汇的比较	216
11.4	Additional Reading	219
	Alan Turing	219
11.4.1	Childhood and Youth	219
11.4.2	College and his Work on Computability	220
11.4.3	Cryptanalysis (Code Breaking)	221
11.4.4	Work on Early Computers and the Turing Test	222
11.4.5	Work on Pattern Formation and Mathematical Biology	223
11.4.6	Prosecution for Homosexuality and Turing's Death	223
11.5	Text Translation	223
	人工智能	223
Chapter 12	Neural Network	228
12.1	Text	228
12.1.1	Structure	229
12.1.2	Advantages	230
12.1.3	Applications	230
12.1.4	Types of Neural Networks	231
12.1.5	Relation to Optimization Techniques	235
12.2	Notes	235

12.3	Related Topics	236
	介词的翻译	236
12.4	Additional Reading	239
	Artificial Intelligence	239
12.4.1	Sub-fields of AI Research	240
12.4.2	History	241
12.4.3	Modern AI	243
12.4.4	Micro-World AI	244
12.4.5	Applications	245
12.4.6	Languages, Programming Style and Software Culture	245
12.4.7	AI Research in Various Countries	246
12.4.8	United Kingdom	246
12.4.9	AI in Business	246
12.4.10	Machines Displaying Some Degree of Intelligence	247
12.5	Text Translation	248
	神经网络	248
Chapter 13	How DSL Works	253
13.1	Text	253
13.1.1	Telephone Lines	254
13.1.2	Asymmetrical DSL	254
13.1.3	Distance Limitations	255
13.1.4	Splitting the Signal; CAP	256
13.1.5	Splitting the Signal; DMT	256
13.1.6	DSL Equipment	257
13.1.7	DSL Equipment; Transceiver	258
13.1.8	DSL Equipment; DSLAM	258
13.2	Notes	258
13.3	Related Topics	260
	科技英语术语	260
13.4	Additional Reading	262
	How Telephones Work	262
13.4.1	A Simple Telephone	263
13.4.2	A Real Telephone	263
13.4.3	The Telephone Network; Wires and Cables	264
13.4.4	The Telephone Network; Digitizing and Delivering	264
13.4.5	Creating Your Own Telephone Network	265
13.4.6	Calling Someone	265

13.4.7	Tones	266
13.5	Text Translation	267
	DSL 是如何工作的	267
Chapter 14	Internet Infrastructure	271
14.1	Text	271
14.1.1	A Network Example	271
14.1.2	Bridging The Divide	272
14.1.3	Backbones	273
14.1.4	Internet Protocol; IP Addresses & Domain Name System	273
14.1.5	Uniform Resource Locators	274
14.1.6	Clients, Servers and Ports	275
14.2	Notes	276
14.3	Related Topics	277
	科技英语的常见句型	277
14.4	Additional Reading	279
	Modem	279
	DNS	280
	Client-server	282
14.5	Text Translation	282
	Internet 基础结构	282
Chapter 15	How Internet Search Engines Work	286
15.1	Text	286
15.1.1	Looking at the Web	286
15.1.2	Building the Index	289
15.1.3	Building a Search	290
15.1.4	Future Search	291
15.2	Notes	291
15.3	Related Topics	293
	被动语态的译法	293
15.4	Additional Reading	296
	Internet Explorer	296
15.4.1	History	296
15.4.2	Features	297
15.4.3	Component Architecture	298
15.4.4	Usability and Accessibility	298

15.4.5	Security Framework	298
15.4.6	Standards Support	298
15.4.7	Proprietary Extensions	299
15.4.8	Criticisms	299
15.4.9	Market Adoption	299
15.4.10	Industry Adoption	300
15.5	Text Translation	301
	网络搜索引擎工作原理	301
Chapter 16	Encryption	305
16.1	Text	305
16.1.1	In the Key of... ..	306
16.1.2	Hash This!	307
16.1.3	Are You Authentic?	307
16.2	Notes	308
16.3	Related Topics	310
	长句的翻译	310
16.4	Additional Reading	312
	Identity Theft	312
16.4.1	Types of Identity Theft	312
16.4.2	Stealing Your Identity	313
16.4.3	Accessing Your Personal Information	314
16.4.4	Public Information	314
16.4.5	How To Protect Yourself	314
16.4.6	Internet Transactions	315
16.4.7	If It Happens To You	316
16.4.8	What Congress Is Doing About It	317
16.4.9	What the Future Holds	317
16.5	Text Translation	318
	加密术构成及应用	318
Chapter 17	Taking a Closer Look at the DCE	322
17.1	Text	322
17.1.1	Common Threads	322
17.1.2	Remote Calls	323
17.1.3	Directory Services	323
17.1.4	Distributed Security Service	324

17.1.5	Distributed File System	324
17.1.6	Distributed Time Service	325
17.1.7	Extending and Using the DCE	325
17.2	Notes	326
17.3	Related Topics	327
	地道与自然	327
17.4	Additional Reading	329
	How to Kerberize Your Site	329
17.4.1	Introduction	329
17.4.2	Pick a Kerberos Server Machine (kdc)	329
17.4.3	DCE and Kerberos	330
17.4.4	Install the Kerberos Server	330
17.4.5	Obtain the Necessary Code	330
17.4.6	Do You Need More Code?	330
17.4.7	Building the Gnu Tools	331
17.4.8	Building the Gnu C Compiler	331
17.4.9	Compiling Kerberos	332
17.4.10	For All Platforms	334
17.4.11	Configuring the Kerberos kdc	334
17.4.12	Setting Up a Host Server	337
17.4.13	Domain Names	338
17.4.14	Kerberos Clients	338
17.4.15	Getting a Ticket for Another Realm	338
17.4.16	Kerberos Security Problems	339
17.4.17	Kerberos Authentication Option in SSL	339
17.4.18	Available Kerberized Goodies	340
17.4.19	CygnusKerberos for NT, Macs, and UNIX	340
17.5	Text Translation	340
	近看 DCE	340
Chapter 18	How MP3 Files Work	344
18.1	Text	344
18.1.1	Introduction to MP3 Files	344
18.1.2	The MP3 Format	345
18.1.3	Using the MP3 Format	346
18.1.4	Downloading and Listening	347
18.1.5	Creating Your Own	348
18.1.6	Distributing Original Music	349

18.2	Notes	349
18.3	Related Topics	350
	人名、地名的翻译	350
18.4	Additional Reading	351
	Sound Cards	351
18.4.1	Anatomy of a Sound Card	351
18.4.2	Catching The Wave	353
18.4.3	Producing Sound	353
18.4.4	Sound Card Upgrades	354
	USB Ports	354
18.4.5	Introduction	354
18.4.6	What is USB?	355
18.4.7	Running Out of Ports	356
18.4.8	Behind the Scenes	356
18.4.9	USB 2.0	358
18.5	Text Translation	359
	MP3 文件是如何工作的	359
Chapter 19 Shockwave 3-D Technology		363
19.1	Text	363
19.1.1	Uses of Shockwave Technology	364
19.1.2	Making 3-D Content Accessible	365
19.1.3	Developing New 3-D Content	367
19.2	Notes	368
19.3	Related Topics	368
	科技论文阅读与写作	368
19.4	Additional Reading	374
	Computer Viruses	374
19.4.1	Types of Infection	374
19.4.2	What's a "Virus"?	375
19.4.3	What's a "Worm"	375
19.4.4	Code Red	376
19.4.5	Early Cases: Executable Viruses	377
19.4.6	Boot Sector Viruses	377
19.4.7	E-mail Viruses	378
19.4.8	Prevention of Virus	379
19.4.9	Origins of Virus	380
19.4.10	History of Virus	381