

LEARNING MADE EASY



3rd Edition

Windows[®] 10

ALL-IN-ONE

for
dummies[®]
A Wiley Brand



Woody Leonhard

Eponymous factotum of
tech forum AskWoody.com



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by **Woody Leonhard**

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Windows® 10 All-in-One For Dummies®, 3rd Edition

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Contents at a Glance

Introduction	1
Book 1: Starting Windows 10	7
CHAPTER 1: Windows 10 4 NOObS	9
CHAPTER 2: Windows 10 for the Experienced	47
CHAPTER 3: Which Version?	79
Book 2: Personalizing Windows	91
CHAPTER 1: Getting Around in Windows	93
CHAPTER 2: Changing the Lock and Login Screens	109
CHAPTER 3: Working with the Action/Notification Center	123
CHAPTER 4: Controlling Users	131
CHAPTER 5: Microsoft Account: To Sync or Not to Sync?	149
CHAPTER 6: Privacy Control	163
Book 3: Working on the Desktop	179
CHAPTER 1: Running Your Desktop from Start to Finish	181
CHAPTER 2: Personalizing the Start Menu	217
CHAPTER 3: Personalizing the Desktop and Taskbar	233
CHAPTER 4: Internet Explorer, Chrome, and Firefox	255
CHAPTER 5: Hey, Cortana!	303
CHAPTER 6: Maintaining Your System	315
Book 4: Using the Built-in Universal Apps	333
CHAPTER 1: Using the Mail and Calendar Apps	335
CHAPTER 2: Keeping Track of People	361
CHAPTER 3: Zooming the Photos App and Beyond	373
CHAPTER 4: Noting OneNote	387
CHAPTER 5: Maps, Music, Movies — and TV	399
Book 5: Connecting with the Universal Apps	417
CHAPTER 1: Introducing Edge	419
CHAPTER 2: Using Skype in Windows 10	435
CHAPTER 3: Navigating the Microsoft Store	449
CHAPTER 4: Games, Games, and Games	461

Book 6: Socializing with the Universal Apps	477
CHAPTER 1: Using OneDrive.....	479
CHAPTER 2: Getting Started with Facebook.....	493
CHAPTER 3: Getting Started with Twitter	511
CHAPTER 4: Getting Started with LinkedIn.....	525
Book 7: Controlling Your System	533
CHAPTER 1: Settings, Settings, and More Settings	535
CHAPTER 2: Troubleshooting and Getting Help	549
CHAPTER 3: Working with Libraries.....	585
CHAPTER 4: Storing in Storage Spaces	599
CHAPTER 5: Taking Control of Updates and Upgrades	609
CHAPTER 6: Running the Built-In Applications	621
CHAPTER 7: Working with Printers	639
Book 8: Maintaining Windows 10	653
CHAPTER 1: File History, Backup, Data Restore, and Sync	655
CHAPTER 2: A Fresh Start: Restore and Reset.....	673
CHAPTER 3: Monitoring Windows	691
CHAPTER 4: Using System Tools	701
Book 9: Securing Windows 10	721
CHAPTER 1: Spies, Spams, and Scams Are Out to Get You	723
CHAPTER 2: Fighting Viri and Scum.....	761
CHAPTER 3: Running Built-In Security Programs	773
CHAPTER 4: Top Security Helpers	799
Book 10: Enhancing Windows 10	817
CHAPTER 1: Using Your iPad and iPhone with Windows.....	819
CHAPTER 2: Android, Chromecast, Roku, Kindle, and Windows 10.....	839
CHAPTER 3: Getting Started with Gmail, Google Apps, and Drive	859
CHAPTER 4: Using Web-Based Outlook.com (nee Hotmail)	879
CHAPTER 5: Best Free Windows Add-Ons	893
Index	909

Table of Contents

INTRODUCTION	1
About This Book	3
Foolish Assumptions	4
Icons Used in This Book	5
Beyond the Book	5
Where to Go from Here	6
BOOK 1: STARTING WINDOWS 10	7
CHAPTER 1: Windows 10 4 N00bs	9
Hardware and Software	12
Why Do PCs Have to Run Windows?.....	12
A Terminology Survival Kit	17
What, Exactly, Is the Web?	21
Getting inside the Internet	22
What is the World Wide Web?	23
Who pays for all this stuff?	25
Buying a Windows 10 Computer	26
Inside the big box	29
Inside a touch-sensitive tablet	31
Screening	35
Managing disks and drives	35
Making PC connections	39
Futzing with video, sound, and multitudinous media	42
Netbooks and Ultrabooks	44
What's Wrong with Windows 10?	45
CHAPTER 2: Windows 10 for the Experienced	47
If You Just Upgraded from Win7 or 8.1 to Win10	48
A Brief History of Windows 10	50
Exploring the Versions of Windows 10	53
The Different Kinds of Windows Programs, Er, Apps	54
What's New for the XP Crowd	58
Improved performance	58
Better video	60
A genuinely better browser is emerging	61
Cortana	61
Other improvements	62
What's New for Windows 7 and Vista Victims	63
Getting the hang of the new Start menu	64
Exploring new stuff in the old-fashioned desktop	66

What's New for Windows 8 and 8.1 Users	68
What's New for All of Windows	68
The Start menu	68
Microsoft Edge	70
Cortana	72
Virtual desktops and task view	73
Security improvements.	74
Other Universal Windows apps.	74
What you lose.	75
Do You Need Windows 10?	77
CHAPTER 3: Which Version?	79
Counting the Editions	80
Buying the right version the first time	83
Narrowing the choices	83
Choosing 32 Bit versus 64 Bit	85
Which Version of Windows Are You Running?	87
BOOK 2: PERSONALIZING WINDOWS	91
CHAPTER 1: Getting Around in Windows	93
Windows' New Beginnings	94
A tale of two homes	95
Switching to tablet mode and back.	98
Navigating around the Desktop	99
Keying Keyboard Shortcuts	105
CHAPTER 2: Changing the Lock and Login Screens	109
Working with the Lock Screen	110
Using your own picture.	111
Adding and removing apps on the lock screen.	114
Logging On Uniquely.	116
Using a picture password.	116
Creating a PIN	119
Windows Hello	120
Bypassing passwords and login	121
CHAPTER 3: Working with the Action/Notification Center	123
What Is the Action Center?.	124
What, Exactly, Is a Notification?.	125
Working with Notifications.	127
Working with Settings Shortcuts.	129

CHAPTER 4: Controlling Users	131
Why You Need Separate User Accounts	132
Choosing Account Types	133
What's a standard account?	133
What's an administrator account?	135
Choosing between standard and administrator accounts	135
What's Good and Bad about Microsoft Accounts	137
Adding Users	139
Changing Accounts	142
Changing other users' settings	143
Changing your own settings	145
Switching Users	147
The Changing Environment	148
CHAPTER 5: Microsoft Account: To Sync or Not to Sync?	149
What, Exactly, Is a Microsoft Account?	150
Deciding Whether You Want a Microsoft Account	151
Setting Up a Microsoft Account	154
Setting up a Hotmail/Outlook.com account	155
Making any email address a Microsoft account	156
Stop Using Your Microsoft Account	158
Taking Care of Your Microsoft Account	159
Controlling Sync	160
CHAPTER 6: Privacy Control	163
Why You Should Be Concerned	164
Privacy Manifesto	166
The past: Watson to WER	166
Customer Experience Improvement Program	167
Feedback & Diagnostics tab and DiagTrack	168
Denial ain't nuthin' but a river	170
Knowing What Connections Windows Prefers	171
Controlling Location Tracking	172
Blocking all location tracking	175
Blocking location tracking in an app	176
Minimizing Privacy Intrusion	177
BOOK 3: WORKING ON THE DESKTOP	179
CHAPTER 1: Running Your Desktop from Start to Finish	181
Tripping through Win10's Three Personas	182
Working with the Traditional Desktop	184
Changing the background	184
Cleaning up useless icons and programs	186

Mousing with Your Mouse	187
What's up, dock?	189
Changing the mouse	190
Starting with the Start Icon	192
Touching on the Taskbar	195
Working with Files and Folders	197
Using File Explorer	200
Navigating	200
Viewing	201
Creating files and folders	203
Modifying files and folders	203
Showing filename extensions	204
Sharing folders	207
Using the \Public folder	208
Recycling	209
Creating Shortcuts	211
Keying Keyboard Shortcuts	213
Sleep: Perchance to Dream	214
CHAPTER 2: Personalizing the Start Menu	217
Touring the Start Menu	218
Modifying the Start Menu	220
Changing your picture	221
Manipulating the Most Used section	222
Controlling the left-side lists	222
Circumnavigating the Start apps list	225
Resizing the Start Menu	227
Changing Tiles on the Start Menu	228
Organizing Your Start Menu Tiles	230
Add, add, add your tiles	230
Forming and naming your groups	230
CHAPTER 3: Personalizing the Desktop and Taskbar	233
Decking out the Desktop	234
Resolving Desktop Resolution	239
Setting the screen resolution	239
Using magnification	241
Putting Icons and Shortcuts on the Desktop	243
Creating shortcuts	244
Arranging icons on the desktop	246
Tricking out the Taskbar	248
Anatomy of the taskbar	249
Jumping	249
Changing the taskbar	251
Working with the taskbar	252

CHAPTER 4: Internet Explorer, Chrome, and Firefox	255
Which Browser Is Best?	257
Considering security	258
Looking at privacy	259
Picking a browser	260
Setting a browser as your default	262
Using Internet Explorer on the Desktop	264
Navigating in IE	264
Dealing with cookies	271
Changing the home page	273
Turning on key features	275
Searching with alacrity ... and Google	277
Customizing Firefox	279
Installing Firefox	279
Browsing privately in Firefox	281
Bookmarking with the Fox	283
Changing the default search engine	285
Adding Firefox's best add-ons	286
Optimizing Google Chrome	288
Installing Chrome	288
Navigating in Chrome	290
Searching on the Web	292
Finding what you're looking for	294
Using Advanced Search	295
Pulling out Google parlor tricks	297
Referring to Internet Reference Tools	298
Internet speed test	298
DNSStuff	298
Monitis Traceroute	299
Down for everyone or just me?	300
The Wayback Machine	300
CHAPTER 5: Hey, Cortana!	303
The Cortana Backstory	304
Make Cortana Respond to "Hey, Cortana"	305
Setting up Cortana	309
Using Cortana Settings	311
CHAPTER 6: Maintaining Your System	315
Rolling Back with the Three Rs	316
Creating Password Reset Questions	318
Establishing password security questions	319
Using password recovery questions	320
Making Windows Update Work	321
Maintaining Drives	322

What is formatting?	323
Introducing hard-drive-maintenance tools	323
Running an error check	324
Defragmenting a drive	324
Maintaining Solid-State Drives.	326
Zipping and Compressing	327
Compressing with NTFS	329
Zipping the easy way with compressed (zipped) folders.	330
BOOK 4: USING THE BUILT-IN UNIVERSAL APPS.	333
CHAPTER 1: Using the Mail and Calendar Apps.	335
Choosing a Mail/Calendar App	337
Comparing email programs.	338
Comparing Calendar apps	342
Choosing the right package	344
Drilling Down on Universal Windows 10 Mail	344
Creating a new message.	348
Searching for email in Universal Mail.	351
Universal Mail Settings	351
Adding a new email account	352
Setting extra options.	354
Avoiding Universal Calendar App Collisions	355
Adding Calendar items	357
Struggling with Calendar shortcomings.	358
Beyond Email	358
CHAPTER 2: Keeping Track of People	361
The Contact List in Windows 10	362
Putting Contacts in the Universal People App.	363
Adding accounts to Universal Windows People	363
Editing a contact	367
Adding people in Universal People.	368
Putting a Contact on the Taskbar	370
Alternatives to the Win10 Universal People App	372
CHAPTER 3: Zooming the Photos App and Beyond	373
Discovering What the Windows Photos App Can Do	374
Touring Photos	374
Editing Photos	377
Setting Settings	380
Adding Photos	381

	Importing Pictures from a Camera or an External Drive	382
	Working with Albums	383
	Storing and Managing Photos Online	383
CHAPTER 4:	Noting OneNote	387
	Getting Started in OneNote with or without a Pen	388
	Setting Up Notebooks, Sections, Pages	389
	Embellishing on a OneNote Page	392
	Sending to OneNote	394
	Setting Settings	396
CHAPTER 5:	Maps, Music, Movies — and TV	399
	Making Maps	400
	Basic map functions	400
	Navigating with the Maps app	403
	Taking a map offline	405
	Get Yer Groove Music On	406
	Getting Your Music and Movies into the Apps	408
	Running around the Groove Music App	411
	Finding music and playlists	413
	Running around the Movies & TV App	415
	BOOK 5: CONNECTING WITH THE UNIVERSAL APPS	417
CHAPTER 1:	Introducing Edge	419
	A Walk through Microsoft Edge	420
	Working with Web Notes	425
	A Sampler of Edge Settings	426
	Adding Edge Extensions	431
CHAPTER 2:	Using Skype in Windows 10	435
	Exploring Skype Alternatives	436
	Signing Up with Skype	439
	Making First Contact	442
	Adding a Contact	443
	Settings	445
	A Few Tips from Skype-ologists	446
CHAPTER 3:	Navigating the Microsoft Store	449
	Checking out What a Universal Windows App Can Do	451
	Browsing the Microsoft Store	454
	Searching the Microsoft Store	457
	Updating Your Microsoft Store Apps	459

CHAPTER 4: Games, Games, and Games	461
Searching the Store for Games	463
Bringing Back the Classics	466
Starting with Sudoku.	468
Cutting the Rope with Style	470
Pirates Love Daisies	473
Despicable Me, Sonic, and More	475
 BOOK 6: SOCIALIZING WITH THE UNIVERSAL APPS	477
 CHAPTER 1: Using OneDrive	479
What Is OneDrive?	480
Setting Up a OneDrive Account	482
The Four States of OneDrive Data	484
Changing the States of OneDrive Data	490
Sharing OneDrive Files and Folders	491
 CHAPTER 2: Getting Started with Facebook	493
Choosing a Facebook App	495
Signing Up for a Facebook Account	495
Choosing basic Facebook privacy settings.	500
Interpreting the Facebook interface lingo	503
Building a Great Timeline	505
Using the Universal Facebook App	509
 CHAPTER 3: Getting Started with Twitter	511
Understanding Twitter	512
Setting Up a Twitter Account	515
Tweeting for Beginners	520
Beware hacking	520
Using the @ sign and Reply	521
Retweeting for fun and profit	522
Direct Messaging	523
Hooking Twitter into Windows	523
 CHAPTER 4: Getting Started with LinkedIn	525
Signing Up for LinkedIn	526
Using LinkedIn for Fun and Profit	530

BOOK 7: CONTROLLING YOUR SYSTEM	533
CHAPTER 1: Settings, Settings, and More Settings	535
Introducing the Universal Settings App	537
Spelunking through the Control Panel.....	540
Putting Shortcuts to Settings on Your Desktop.....	542
God Mode.....	546
CHAPTER 2: Troubleshooting and Getting Help	549
Troubleshooting the Easy Way	550
Troubleshooting the Hard Way.....	551
Tackling installation problems.....	551
Problems with installing updates	555
System Stability and Reliability Monitor.....	564
Tricks to Using Windows Help	565
The problem(s) with Windows Help	566
Using different kinds of help	567
How to Really Get Help	567
Snapping and Recording Your Problems	570
Taking snaps that snap.....	571
Recording live.....	572
Connecting to Remote Assistance.....	575
Understanding the interaction	575
Making the connection.....	576
Limiting an invitation	581
Troubleshooting Remote Assistance	581
Getting Help Online.....	582
CHAPTER 3: Working with Libraries	585
Understanding Libraries.....	586
Making Your Libraries Visible	587
Working with Your Default Libraries.....	590
Customizing Libraries	592
Adding a folder to a library	592
Changing a library's default save location	594
Creating Your Own Library.....	596
CHAPTER 4: Storing in Storage Spaces	599
Understanding the Virtualization of Storage.....	600
Setting Up Storage Spaces.....	603
Working with Storage Spaces	606
Storage Space Strategies	608

CHAPTER 5: Taking Control of Updates and Upgrades	609
The Case Against Windows Automatic Update	610
Terminology 101	611
The Great Divide: Home versus Pro	613
Keeping Your Win10 Home Machine Protected	614
Blocking Win10 Pro Updates	617
Keep Up on the Problems	619
CHAPTER 6: Running the Built-In Applications	621
Setting Alarms & Clock	622
Getting Free Word Processing	625
Running Notepad	626
Writing with WordPad	627
Taming the Character Map	630
Calculating — Free	631
Painting	634
CHAPTER 7: Working with Printers	639
Installing a Printer	640
Attaching a local printer	641
Connecting a network printer	643
Using the Print Queue	645
Displaying a print queue	645
Pausing and resuming a print queue	647
Pausing, restarting, and resuming a document	648
Canceling a document	648
Troubleshooting Printing	649
Catching a Runaway Printer	651
BOOK 8: MAINTAINING WINDOWS 10	653
CHAPTER 1: File History, Backup, Data Restore, and Sync	655
What Happened to the Windows 7 Backup?	656
The Future of Reliable Storage Is in the Cloud	656
Backing Up and Restoring Files with File History	658
Setting up File History	658
Restoring data from File History	662
Changing File History settings	664
Storing to and through the Cloud	666
Considering cloud storage privacy concerns	667
Reaping the benefits of backup and storage in the cloud	669
Choosing an online backup and sharing service	669

CHAPTER 2: A Fresh Start: Restore and Reset	673
The Three R's — and an SF and a GB	674
Resetting Your PC	677
Resetting Your PC to Factory Settings	680
Starting Fresh	682
Restoring to an Earlier Point	683
Creating a restore point	685
Rolling back to a restore point	686
Entering the Windows Recovery Environment	688
CHAPTER 3: Monitoring Windows	691
Viewing Events	692
Using Event Viewer	692
Events worthy — and not worthy — of viewing	694
Gauging System Reliability	696
CHAPTER 4: Using System Tools	701
Tasking Task Manager	702
Task Manager Processes	704
Task Manager Performance	705
Task Manager App History	706
Task Manager Startup and Autoruns	707
Task Manager Details and Services	709
Installing a Second Hard Drive	710
Running a Virtual Machine	713
BOOK 9: SECURING WINDOWS 10	721
CHAPTER 1: Spies, Spams, and Scams Are Out to Get You	723
Understanding the Hazards — and the Hoaxes	724
The primary infection vectors	725
Zombies and botnets	727
Phishing	730
419 scams	733
I'm from Microsoft, and I'm here to help	736
Oday exploits	738
Staying Informed	739
Relying on reliable sources	740
Ditching the hoaxes	740
Is My Computer Infected?	742
Evaluating telltale signs	743
Where did that message come from?	743
What to do next	745
Shunning scareware	746

Getting Protected	748
Protecting against malware	748
Disabling Java and Flash	750
Using your credit card safely online	751
Defending your privacy	753
Reducing spam	754
Dealing with Data Breaches	757
CHAPTER 2: Fighting Viri and Scum	761
Basic Windows Security Do's and Don'ts	762
Making Sense of Malware	766
Deciphering Browsers' Inscrutable Warnings	769
Chrome	769
Firefox	771
CHAPTER 3: Running Built-In Security Programs	773
Working with Windows Defender	773
Adjusting Windows Defender	776
Running Windows Defender manually	777
Controlling Folder Access	779
Judging SmartScreen	781
Booting Securely with UEFI	784
A brief history of BIOS	784
How UEFI is different from/better than BIOS	785
How Windows 10 uses UEFI	787
Controlling User Account Control	787
Poking at Windows Firewall	790
Understanding Firewall basic features	791
Speaking your firewall's lingo	792
Peeking into your firewall	793
Making inbound exceptions	794
CHAPTER 4: Top Security Helpers	799
Deciding about BitLocker	800
Managing Your Passwords	803
Using password managers	803
Which is better: Online or in-hand?	804
Rockin' RoboForm	805
Liking LastPass	806
Keeping Your Other Programs Up to Date	807
Blocking Java and Flash in Your Browser	809
Fighting Back at Tough Scumware	812
Securing Your Communication with PIA	813
What's a VPN?	814
Setting up a VPN	815

BOOK 10: ENHANCING WINDOWS 10	817
CHAPTER 1: Using Your iPad and iPhone with Windows	819
Running iTunes on Windows, or Maybe Not.	820
Why you may need or want iTunes for Windows	821
Installing iTunes.	823
Setting up iTunes.	825
Pulling Internet videos onto your iPad.	827
The Inside Story on Office for iPad and Android	829
Great iPad Apps to Use with Windows.	832
Controlling Windows from your iPad	832
Delivering PowerPoint presentations with your iPad.	834
Extending your Windows display with iDisplay.	834
Moving files between your PC and the iPad	835
Playing with Kids on Your iPad or iPhones	836
CHAPTER 2: Android, Chromecast, Roku, Kindle, and Windows 10	839
What, Exactly, Is Android?	841
Getting clear on Android	842
Making Windows talk to your Android phone or tablet.	842
Connecting TVs with Roku, Plex, and Chromecast.	844
Using Office for Android.	847
Wrangling E-Book Files	847
Introducing popular e-book formats	848
Reading e-book files on your PC	848
Organizing your e-book files with calibre	848
Getting Media from Your PC to Your Kindle	852
Emailing books from your PC to your Kindle.	852
Receiving emailed books from a friend	854
Adding music to your Kindle	855
CHAPTER 3: Getting Started with Gmail, Google Apps, and Drive	859
Finding Alternatives to Windows with Google.	860
Setting Up Gmail	865
Moving an Existing Account to Gmail.	867
Using the Google Apps	870
Moving Your Domain to Google	874

CHAPTER 4: Using Web-Based Outlook.com (nee Hotmail)	879
Getting Started with Outlook.com	880
Bringing Some Sanity to Outlook.com Organization	886
Handling Outlook.com Failures	887
Importing Outlook.com Messages into Gmail	889
Weighing the Alternatives	891
CHAPTER 5: Best Free Windows Add-Ons	893
Windows Apps You Absolutely Must Have	894
File History	894
VLC Media Player	895
LastPass	896
Recuva	897
The Best of the Rest — All Free	898
Notepad Next	898
Ninite	899
Revo Uninstaller	899
Paint.net	900
7-Zip	901
Tixati	902
Dropbox, Google Drive, OneDrive, or ...	902
Other interesting free software	903
You may not need to buy Microsoft Office	904
Don't Pay for Software You Don't Need!	905
Windows 10 has all the antivirus software you need	906
Windows 10 doesn't need a disk defragger	906
Windows 10 doesn't need a disk partitioner	907
Windows 10 doesn't need a Registry cleaner	907
Windows 10 doesn't need a backup program	908
Don't turn off services or hack your Registry	908
INDEX	909

Introduction

Windows has a long and glorious history, stretching all the way back to Windows 1.0 in 1985. It was sent to the bit bucket in the sky at the end of 2001. Windows 3.0, starting in 1990, began to fill Microsoft's coffers and 3.1 (1992) is widely held as a landmark achievement in the history of computing. Then came Windows NT — a completely new beast, built to be a server — and the reunification of consumer and server side in Windows 95 (Chicago), Windows 98 (Memphis — the first version to ship with Internet Explorer built-in), 2000, and the much-maligned Windows ME.

With Windows XP (Whistler) in 2001, Microsoft took on the mantle of juggernaut, and blew away everything in its path. Also in 2001, the US Department of Justice sued Microsoft for using its monopoly power to roll over other Internet browsers. XP has such staying power that it's still used in a significant number of PCs.

Windows Vista came along in 2006/2007, but it was upstaged in 2009 by Windows 7 — arguably the most-loved version of Windows. It continues to capture a large share of Windows users and was only recently upstaged by Windows 10.

Then, in 2012, there was Windows 8. Think of Windows 8/8.1 as an extended, bad, no-good, horrible nightmare. Microsoft's woken up now. They fired almost everybody who ran the Win8 operation, cleaned out the house, and brought in some truly gifted engineers. Windows 10 is a brand-new day. Whether it's *your* brand-new day is another story.

Windows 10, released in July 2015, looks a little bit like Windows 7 and a little bit like Windows 8.1. It doesn't work like either of them, but for the billion-and-a-half Windows users out there, at least it's recognizable as Windows.

If you haven't yet taken the plunge with Windows 10, I advise you to go slowly. Microsoft is furiously working on extending the product and shoring up problems. The Windows 10 you know today will change in a few months — a new version appears every six months — and you may like the new one better. Before installing Windows 10, I would simply count to ten.

For most Windows 8 and 8.1 users, Win10 is a no-brainer. You can kvetch about some problems — the disappearance of Windows Media Center, for example. There are dozens of additional details, but by and large, Windows 10 is what Windows 8.1 should've been.

Windows 7 users don't have as much incentive to move to Windows 10, but there are some good changes. Microsoft effectively ditched Internet Explorer and built a much lighter and more capable browser called Microsoft Edge. Instead of desktop gadgets, which in Win7 were held together with baling wire and chewing gum, Win10 sports an entire infrastructure for tiled Universal apps. Win10 works with all the new hardware, touchscreens, and pens. There's an improved Task Manager, File Explorer, and a dozen other system utilities.

Is that enough to convince Win7 users to abandon ship in droves? Probably not. The single biggest allure of Windows 10 for the Win7 battle-hardened is that it's clearly the way of the future.

If you want a better Windows, for whatever reason, you'll have to go through Windows 10.

Here's what you should ask yourself before you move from Windows 7 to Windows 10:

- » Are you willing to learn a new operating system, with a number of new features that may or may not appeal to you?
- » Are you willing to let Microsoft snoop on your actions, more than they do with Windows 7? We don't know exactly what's being snooped, but it appears to be roughly on par with Google snooping and arguably less intrusive than Apple snooping.
- » Are you willing to let Microsoft take control of your machine? MS has already shown that it can take Win7 and 8.1 machines to town, with the Get Windows 10 campaign. But in Win10, it's considerably more difficult to keep patches at bay.

This isn't the manual Microsoft forgot. This is the manual Microsoft wouldn't dare print. I won't feed you the Microsoft party line or make excuses for pieces of Windows 10 that just don't work: Some of it's junk, some of it's evolving, and some of it's devolving. My job is to take you through the most important parts of Windows, give you tips that may or may not involve Microsoft products, point out the rough spots, and guide you around the disasters. Frankly, there are some biggies.

I also look at using non-Microsoft products in a Windows way: iPads, Androids, Kindles, Gmail and Google apps, Facebook, Twitter, Dropbox, Firefox, Google Chrome, iCloud, and many more. Even though Microsoft competes with just about every one of those products, each has a place in your computing arsenal and ties into Windows in important ways.

I'll save you more than enough money to pay for the book several times over, keep you from pulling out a whole shock of hair, lead you to dozens if not hundreds of "Aha!" moments, and keep you awake in the process. Guaranteed.

About This Book

Windows 10 All-in-One For Dummies, 3rd Edition, takes you through the Land of the Dummies — with introductory material and stuff your grandmother can (and should!) understand — and then continues the journey into more advanced areas, where you can truly put Windows to work every day.

I start with the Win10 Start menu, and for many of you, that's the only Start you'll ever need. The Start menu coverage here is the best you'll find anywhere because I don't assume that you know Windows and I step you through everything you need to know both with a touchscreen and a mouse.

Then I dig in to the desktop and take you through all the important pieces.

I don't dwell on technical mumbo jumbo, and I keep the baffling jargon to a minimum. At the same time, though, I tackle the tough problems you're likely to encounter, show you the major road signs, and give you lots of help where you need it the most.

Whether you want to get two or more email accounts set up to work simultaneously, turn your tiles a lighter shade of pale, or share photos of your Boykin Spaniel in OneDrive, this is your book. Er, I should say ten books. I've broken out the topics into ten minibooks, so you'll find it easy to hop around to a topic — and a level of coverage — that feels comfortable.

I didn't design this book to be read from front to back. It's a reference. Each chapter and each of its sections are meant to focus on solving a particular problem or describing a specific technique.

Windows 10 All-in-One For Dummies, 3rd Edition, should be your reference of first resort, even before you consult Windows Help and Support. There's a big reason why: Windows Help was written by hundreds of people over the course of many, many years. Some of the material was written ages ago, and it's confusing as all get-out, but it's still in Windows Help for folks who are tackling tough legacy problems. Some of the Help file terminology is inconsistent and downright misleading, largely because the technology has changed so much since some of the articles were written. Finding help in Help frequently boggles my mind: If I don't already know the answer to a question, it's hard to figure out how to coax Help

to help. Besides, if you're looking for help on connecting your iPad to your PC or downloading pictures from your Galaxy phone, Microsoft would rather sell you something different. The proverbial bottom line: I don't duplicate the material in Windows 10 Help and Support, but I point to it if I figure it can help you.



WARNING

A word about Windows 10 versions: Microsoft is trying to sell the world on the idea that Windows 10 runs on everything — desktops, laptops, tablets, phones, assisted reality headsets, huge banks of servers, giant conference room displays, refrigerators, and toasters. While that's literally true — Microsoft can call anything Windows 10 if it wants — for those of us who work on desktops and laptops, Windows 10 is Windows 10. If you're getting Windows 10 on a tablet, you need to check to see if it's the version that runs on phones. Windows 10 Mobile has some small resemblance to what's presented here, but this book won't take you through the tough times.

Foolish Assumptions

I don't make many assumptions about you, dear reader, except to acknowledge that you're obviously intelligent, well-informed, discerning, and of impeccable taste. That's why you chose this book, eh?

Okay, okay. The least I can do is butter you up a bit. Here's the straight scoop: If you've never used Windows, bribe your neighbor (or, better, your neighbor's kids) to teach you how to do four things:

- » Play a game with your fingers (if you have a touchscreen) or with a mouse (if you're finger-challenged). Any of the games that ship with Windows 10, or free games in the Microsoft Store, will do. If your neighbor's kids don't have a different recommendation, try the new Microsoft Solitaire Collection.
- » Start File Explorer.
- » Get on the web.
- » Turn Windows off. (Click or tap the Start icon in the lower left of the screen, click the universal on/off button thingy, and then click Shut down.)

That covers it. If you can play a game, you know how to turn on your computer, log in if need be, touch and drag, and tap and hold down. If you run File Explorer, you know how to click a taskbar icon. After you're on the web, well, it's a great starting point for almost anything. And if you know that you need to use the Start menu, you're well on your way to achieving Windows 10 enlightenment.

And that begins with Book 1, Chapter 1.

Icons Used in This Book

Some of the points in *Windows 10 All-in-One For Dummies*, 3rd Edition, merit your special attention. I set off those points with icons.



TIP

When I'm jumping up and down on one foot with an idea so absolutely cool that I can't stand it anymore, I stick a tip icon in the margin. You can browse any chapter and hit its highest points by jumping from tip to tip.



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When you see this icon, you get the real story about Windows 10 — not the stuff that the Microsoft marketing droids want you to hear — and my take on the best way to get Windows 10 to work for you. You find the same take on Microsoft, Windows, and more at my eponymous website, www.AskWoody.com.



REMEMBER

You don't need to memorize the information marked with this icon, but you should try to remember that something special is lurking.



WARNING

Achtung! Cuidado! Thar be tygers here! Anywhere that you see a warning icon, you can be sure that I've been burnt — badly. Mind your fingers. These are really, really mean suckers.



TECHNICAL
STUFF

Okay, so I'm a geek. I admit it. Sure, I love to poke fun at geeks. But I'm a modern, New Age, sensitive guy, in touch with my inner geekiness. Sometimes, I just can't help but let it out, ya know? That's where the technical stuff icon comes in. If you get all tied up in knots about techie-type stuff, pass these paragraphs by. (For the record, I managed to write this entire book without telling you that an IPv4 address consists of a unique 32-bit combination of network ID and host ID, expressed as a set of four decimal numbers with each octet separated by periods. See? I can restrain myself sometimes.)

Beyond the Book

At the time I wrote this book, I covered Windows 10 Spring Creators Update, version 1803. Microsoft promises to keep Windows 10 updated twice a year, but it isn't clear if they'll be able to maintain that breakneck pace. For details about significant updates or changes that occur between editions of this book, go to www.dummies.com, search for *Windows 10 All-in-One For Dummies*, and open the Download tab on this book's dedicated page.

In addition, the cheat sheet for this book has handy Windows shortcuts and tips on other cool features worth checking out. To get to the cheat sheet, go to www.dummies.com, and then type *Windows 10 All-in-One For Dummies Cheat Sheet* in the search box.

Where to Go from Here

That's about it. It's time for you to crack this book open and have at it.

If you haven't yet told Windows 10 to show you filename extensions, flip to Book 3, Chapter 1. If you haven't yet set up the File History feature, go to Book 8, Chapter 1. If you're worried about Microsoft keeping a list of all the searches that you conduct *on your own computer*, check out Book 2, Chapter 5.



Don't forget to bookmark my website: www.AskWoody.com. It keeps you up to date on all the Windows 10 news you need to know — including notes about this book, the latest Windows bugs and gaffes, patches that are worse than the problems they're supposed to fix, and much more — and you can submit your most pressing questions for free consultation from The Woodmeister and his merry gang.

See ya! Shoot me mail at woody@AskWoody.com.

Sometimes, it's worth reading the Intro, eh?

1

Starting Windows 10

Contents at a Glance

CHAPTER 1: Windows 10 4 N00bs	9
Hardware and Software	12
Why Do PCs Have to Run Windows?	12
A Terminology Survival Kit	17
What, Exactly, Is the Web?	21
Buying a Windows 10 Computer	26
What's Wrong with Windows 10?	45
CHAPTER 2: Windows 10 for the Experienced	47
If You Just Upgraded from Win7 or 8.1 to Win10	48
A Brief History of Windows 10	50
Exploring the Versions of Windows 10	53
The Different Kinds of Windows Programs, Er, Apps	54
What's New for the XP Crowd	58
What's New for Windows 7 and Vista Victims	63
What's New for Windows 8 and 8.1 Users	68
What's New for All of Windows	68
Do You Need Windows 10?	77
CHAPTER 3: Which Version?	79
Counting the Editions	80
Choosing 32 Bit versus 64 Bit	85
Which Version of Windows Are You Running?	87

IN THIS CHAPTER

- » Reading the newbie's quick guide
- » Understanding that hardware is hard — and software is hard, too
- » Seeing Windows place in the grand scheme of things
- » Defining computer words that all the grade-schoolers understand
- » Finding out what, exactly, is the web
- » Buying a Windows 10 computer

Chapter **1**

Windows 10 4 N00bs

Don't sweat it. We all started out as noobs (newbies).

If you've never used an earlier version of Windows, you're in luck — you don't have to force your fingers to forget so much of what you've learned. Windows 10 is completely different from any Windows that has come before. It's a melding of Windows 7 and Windows 8 and 8.1, tossed into a blender, speed turned up full, poured out on your screen.

If you heard that Windows 8 was a dog, you heard only the printable part of the story. By clumsily forcing a touchscreen approach down the throats of mouse-lovers everywhere, Windows 8 alienated the touch-first people, drove the mousers nuts, and left everybody — aside from a few diehards — screaming in pain.

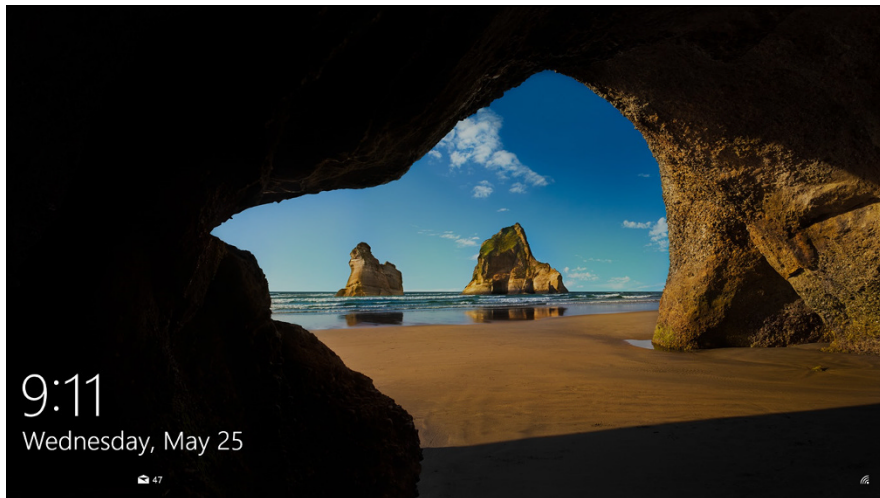
Windows 10 brings a kinder, gentler approach for the 1.7 billion or so people who have seen the Windows desktop and know a bit about struggling with it. Yes,

Win10 will expose you to those tappy phone-style tiles, but they aren't nearly as intrusive, or as scary, as you think.

Some of you are reading this book because you specifically chose to run Windows 10. Some of you are here because Windows 10 came preinstalled on a new computer. Some of you are here because your work forced you to upgrade to Win10. Some of you are here because you fell victim to Microsoft's much-maligned "Get Windows 10" campaign or you figured you better get on Win10 while the gettin's good. Whatever the reason, you've ended up on a pretty good operating system and — as long as you understand and respect its limitations — it should serve you well.

So you're sitting in front of your computer, and this thing called Windows 10 is staring at you. Except the screen (see Figure 1-1), which Microsoft calls the lock screen, doesn't say *Windows*, much less *Windows 10*. In fact, the screen doesn't say much of anything except the current date and time, with maybe a tiny icon or two that shows you whether your Internet connection is working, how many unopened emails await, or whether you should just take the day off because your holdings in AAPL stock soared again.

FIGURE 1-1:
The Windows 10 lock screen. Your picture may differ, but the function stays the same.



You may be tempted to just sit and admire the gorgeous picture, whatever it may be, but if you use your finger or mouse to swipe up from the bottom, or press any key on an attached keyboard, you see the login screen, possibly resembling the one in Figure 1-2. If more than one person is set up to use your computer, you'll see more than one name.



FIGURE 1-2:
The Windows 10
login screen.

That's the login screen, but it doesn't say *Login* or *Welcome to Win10 Land* or *Howdy* or even *Sit down and get to work, Bucko*. It has names and pictures for only the people who can use the computer. Why do you have to click your name? What if your name isn't there? And why in the %\$#@! can't you bypass all this garbage, log in, and get your email?

Good for you. That's the right attitude.

Windows 10 ranks as the most sophisticated computer program ever made. It cost more money to develop and took more people to build than any previous computer program — ever. So why is it so blasted hard to use? Why doesn't it do what you want it to do the first time? Why do updates constantly break it? For that matter, why do you need it at all?

Someday, I swear, you'll be able to pull a PC out of the box, plug it into the wall, turn it on, and then get your email, look at the news, or connect to Facebook — bang, bang, bang, just like that, in ten seconds flat. In the meantime, those stuck in the early 21st century have to make do with PCs that grow obsolete before you can unpack them, software so ornery that you find yourself arguing with it, and Internet connections that surely involve turtles carrying bits on their backs.

If you aren't comfortable working with Windows and you still worry that you may break something if you click the wrong button, welcome to the club! In this chapter, I present a concise, school-of-hard-knocks overview of how all this hangs together and what to look for when buying a Windows computer. It may help you understand why and how Windows has limitations. It also may help you communicate with the geeky rescue team that tries to bail you out, whether you rely on the store that sold you the PC, the smelly guy in the apartment downstairs, or your 8-year-old daughter's nerdy classmate.

Hardware and Software

At the most fundamental level, all computer stuff comes in one of two flavors: hardware or software. *Hardware* is anything you can touch — a computer screen, a mouse, a hard drive, a DVD drive (remember those coasters with shiny sides?). *Software* is everything else: email messages, that letter to your Aunt Martha, digital pictures of your last vacation, programs such as Microsoft Office. If you shoot a bunch of pictures, the pictures themselves are just bits — software. But they're probably sitting on some sort of memory card inside your phone or camera. That card's hardware. Get the difference?

Windows 10 is software. You can't touch it. Your PC, on the other hand, is hardware. Kick the computer screen, and your toe hurts. Drop the big box on the floor, and it smashes into a gazillion pieces. That's hardware.

Chances are very good that one of the major PC manufacturers — Lenovo, HP, Dell, Acer, or ASUS, for example — or maybe even Microsoft, with its Surface line, or even Apple, made your hardware. Microsoft, and Microsoft alone, makes Windows 10.

When you bought your computer, you paid for a license to use one copy of Windows on the PC you bought. The PC manufacturer paid Microsoft a royalty so it could sell you Windows along with your PC. (That royalty may have been, in fact, zero dollars, but it's a royalty nonetheless.) You may think that you got Windows from, say, Dell — indeed, you may have to contact Dell for technical support on Windows questions — but, in fact, Windows came from Microsoft.

If you upgraded from Windows 7 or 8.1 to Windows 10, you may have received a free upgrade license — but it's still a license, whether you paid for it or not. You can't give it away to someone else.



REMEMBER

These days, most software, including Windows 10, asks you to agree to an End User License Agreement (EULA). When you first set up your PC, Windows asked you to click the Accept button to accept a licensing agreement that's long enough to reach the top of the Empire State Building. If you're curious about what agreement you accepted, take a look at the official EULA repository, www.microsoft.com/en-us/Useterms/Retail/Windows/10/UseTerms_Retail_Windows_10_English.htm.

Why Do PCs Have to Run Windows?

Here's the short answer: You don't have to run Windows on your PC.

The PC you have is a dumb box. (You needed me to tell you that, eh?) To get the dumb box to do anything worthwhile, you need a computer program that takes control of the PC and makes it do things, such as show web pages on the screen, respond to mouse clicks or taps, or print résumés. An *operating system* controls the dumb box and makes it do worthwhile things, in ways that mere humans can understand.

Without an operating system, the computer can sit in a corner and count to itself or put profound messages on the screen, such as *Non-system disk or disk error* or maybe *Insert system disk and press any key when ready*. If you want your computer to do more than that, though, you need an operating system.



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Windows is not the only operating system in town. The other big contenders in the PC and PC-like operating system game are Chrome OS, macOS, and Linux:

» **ChromeOS:** Cheap Chromebooks have long dominated the best-seller lists at many computer retailers, and for good reason. If you want to surf the web, work on email, compose simple documents, or do anything in a browser — which covers a whole lot of ground these days — ChromeOS is all you need. Chromebooks, which by definition run Google's ChromeOS, can't run Windows programs such as Office or Photoshop (although they *can* run web-based versions of those programs, such as Office Online or the Photoshop Express Editor). In spite of the limitations, they don't get infected and have very few maintenance problems. You can't say the same about Windows: That's why you need a thousand-page book to keep Windows going. Yes, you do need a reliable Internet connection to get the most out of ChromeOS. But some parts of ChromeOS and Google's apps, including Gmail, can work even if you don't have an active Internet connection.

ChromeOS, built on Linux, looks and feels much like the Google Chrome web browser. There are a few minor differences, but in general you feel like you're working in the Chrome browser.

For friends and family who don't have big-time computer needs, I find myself recommending a Chromebook more often than not. It's easier for them, and it's easier for me to support.

» **macOS:** Apple has made great strides running on Intel hardware, and if you don't already know how to use Windows or own a Windows computer, it makes a great deal of sense to consider buying an Apple computer or running macOS or both. Yes, you can build your own computer and run macOS on it: Check out www.hackintosh.com. But, no, it isn't legal — the macOS End User License Agreement specifically forbids installation on a non-Apple-branded computer — and it's certainly not for the faint of heart.

That said, if you buy a Mac — say, a MacBook Air or Pro — it's very easy to run Windows 10 on it. Some people feel that the highest quality Windows environment today comes from running Windows on a MacBook, and for years I've run Windows on my MacBook Pro and Air. All you need is a program called Boot Camp, and that's already installed, free, on the MacBook.

» **Linux:** The big up-and-coming operating system, which has been up and coming for a couple of decades now, is Linux, which is pronounced "LIN-uchs." It's a viable contender for netbooks (covered in more depth at the end of this chapter). If you expect to use your PC only to get on the Internet — to surf the web and send email from the likes of your Gmail or Hotmail account — Linux can handle all that, with few of the headaches that remain as the hallmark of Windows. By using free programs such as LibreOffice (www.libreoffice.org) and online programs such as GSuite and Google Drive (www.drive.google.com), you can even cover the basics in word processing, spreadsheets, presentations, contact managers, calendars, and more. Linux may not support the huge array of hardware that Windows offers — but more than a few wags will tell you, with a wink, that Windows doesn't support that huge of an array, either.

WINDOWS RT, RIP

Back in the early days of Windows 8, Microsoft developed a different branch of Windows that was christened *Windows RT*. New Windows RT computers at the time were generally small, light, and inexpensive, and had a long battery life and touch-sensitive displays.

Several manufacturers made Windows RT machines, but in the end the only company that sold more than a dumpster full of them was Microsoft. Microsoft's original Surface (later renamed Surface RT) and Surface 2 ran Windows RT — and even they didn't sell worth beans.

The fundamental flaw with Windows RT? It wasn't Windows. You couldn't (and can't) run Windows programs on it. You can't upgrade the machine to real Windows. But try explaining that to a garden-variety customer. Microsoft really blew it when they gave the new, odd operating system the name *Windows RT*.

Microsoft has essentially orphaned Windows RT. If you own a Windows RT device (most likely a Microsoft Surface or Surface 2), the folks in Redmond provided one last update, called Windows RT 8.1 Update 3, which plugs what little they could muster. See www.microsoft.com/surface/en-us/support/install-update-activate/windows-8-1-rt-update-3.

WINDOWS 10 MOBILE

Generally, devices with screens smaller than 9 inches run the other kind of Windows, known (at least unofficially) as Windows 10 Mobile. Yes, there are devices larger than 9 inches that run Windows 10 Mobile and devices 8 inches and smaller with the “real” Windows 10. The general argument goes like this: If you don’t need to use the traditional Windows 7-style desktop, why pay for it? Windows 10 centers on the mouse-friendly desktop. Windows 10 Mobile sticks to the tiled world, and it’s much more finger-friendly.

Believe me, running the Windows desktop on a 7-inch tablet takes a tiny stylus, or a pencil sharpener for your fingertips.

This book talks about Windows 10. Although some of the topics also apply to Windows 10 Mobile, there’s quite a bit of difference. Since Microsoft gave up and sold its Nokia business in May 2016, the few Windows 10 phone fans have largely given up hope.

In the tablet sphere, iOS and Android rule, with iOS for iPhones and iPads — all from Apple — and Android for phones and tablets from a bewildering number of manufacturers. Windows 10 doesn’t exactly compete with any of them, although Microsoft tried to take on iPad with the now-defunct Windows RT (see the sidebar “Windows RT, RIP”) and is trying to dip its billion-dollar toe back in the bare-bones water with Windows 10 S mode.

There’s yet another branch of Windows, which is geared toward phones and tablets, especially 8-inch and smaller tablets. Windows 10 Mobile (see the sidebar) owes its pedigree to Windows Phone 8 and Windows RT. At least conceptually (and, in fact, under the hood in no small part), Microsoft has grown Windows Phone up and Windows RT down to meet somewhere in the middle. As we went to press, Windows 10 Mobile was basically dead.



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While some of the nostrums in this tome apply to Windows 10 Mobile, most do not. The mobile layout’s different, the approach is different, the way you interact with things is different, and most of the details are different. There is, however, some overlap in the Universal apps that can run on both Windows 10 and Windows 10 Mobile, and the tiles in many cases look the same.



WARNING

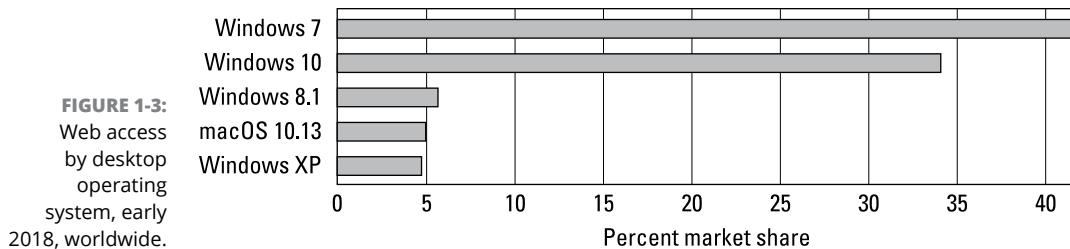
Windows 10 in S mode is a relatively new development that’s just starting to unfold. Designed to compete with ChromeOS and iPads, *S mode* refers to a set of restrictions on “real” Windows 10. Supposedly in an attempt to improve battery life, reduce the chance of getting infected, and generally simplify your life, the S mode versions of Windows 10 won’t run regular Windows programs — no Chrome, no Firefox, no Photoshop — and the only version of Office that runs is the Universal (read: stunted) version available in the Microsoft Store.

Fortunately, Windows 10 S mode systems can be upgraded so that they're no longer in S mode. For most people who want more than the basics, that's a smart move. Details aren't yet available, but if you find that you can't run real Windows programs on your Windows 10 in S mode machine, look into dropping S mode.

What do other people choose? It's hard to measure the percentage of PCs running Windows versus Mac versus Linux. One company, Net Applications, specializes in inspecting the online records of big-name websites and tallying how many Windows computers hit those sites, compared to Apple and Linux.

I hesitate to mention Net Applications (www.netapplications.com), because there's a great deal of controversy surrounding its sampling and error correction methods, but it's still (arguably) the best source of information on operating system penetration.

If you look at only desktop operating systems — Windows (on desktops, laptops, 2-in-1s) and macOS X — the numbers in early 2018 (according to Net Applications) broke as shown in Figure 1-3. (Linux just barely broke 1 percent.)



Yes, you read the graph correctly: As of early 2018, when Windows 10 had been out for almost three years, Win10 ran only a 34 percent market share (that is, 34 percent of the desktop browser hits recorded by Net Applications came from Win10). Windows 8.1 had 6 percent, and even old WinXP hit nearly 5 percent. Win7 was the reigning champ, with a 42 percent market share. That share is declining rapidly, though, as Microsoft pushes and shoves more Win7 customers onto Windows 10.



If you look at the bigger picture, including tablets and phones, the numbers change completely. As of May 2016, Google says that more than half of the searches it handles in the US, Japan, and ten other countries come from tablets and phones, as opposed to desktops or laptops. Google hasn't revisited the figures since, but you can bet they're swinging even further in mobile's favor. Back in July 2015, Andreesen Horowitz reported that the number of iOS devices (iPhones, iPads) sold per month zoomed ahead of the number of Windows PCs. Traditionally, Android phones and tablets show twice the usage rate of iOS devices.

Mobile operating systems are swallowing the world — and the trend's been in mobile's favor, not Windows.

The number of smartphones sold every year exceeded the number of PCs sold in 2011, and the curve has gone steeply in favor of mobile ever since. The number of PCs sold every year peaked in 2014 and has been declining steadily ever since. These days, something like 15 percent of all computers sold run Windows — if you include phones and tablets in the “computers” category.

Windows was once king of the computing hill. Not so any more. Which is good news for you, the Windows customer. Microsoft's branching out to make software for phones and tablets of all stripes, and Windows itself works better with whatever phones and tablets you may like.

It's a brave new Windows world.

A Terminology Survival Kit

Some terms pop up so frequently that you'll find it worthwhile to memorize them, or at least understand where they come from. That way, you won't be caught flat-footed when your first-grader comes home and asks whether he can install a Universal app on your computer.



TIP

If you want to drive your techie friends nuts the next time you have a problem with your computer, tell them that the hassles occur when you're “running Microsoft.” They won't have any idea whether you mean Windows, Word, Outlook, Hotmail, Messenger, Search, Defender, or any of a gazillion other programs — and they won't know if you're talking about a Microsoft program on Windows, the Mac, iPad, iPhone, or Android.

Windows, the *operating system* (see the preceding section), is a program. So are computer games, Microsoft Office, Microsoft Word (the word processor part of Office), Google Chrome (the web browser made by Google), Xbox Video, those nasty viruses you've heard about, that screen saver with the oh-too-perfect fish bubbling and bumbling about, and others.

An *app* or a *program* is *software* (see the earlier “Hardware and Software” section in this chapter) that works on a computer. *App* is modern and cool; *program* is old and boring, *application* manages to hit both gongs, but they all mean the same thing.

A *Universal Windows app* is a program that, at least in theory, runs on any version of Windows 10. By design, Universal apps (also called Universal Windows

Platform, or UWP, apps) should run on Windows 10 on a desktop, a laptop, a tablet, a phone — and even on an Xbox game console, a giant wall-mounted Surface Hub, a HoloLens augmented reality headset, and possibly Internet of Things tiny computers. They run also on Windows 10 in S mode (see previous section).



WARNING

For most people, “Universal” does not mean what they might think it means. Universal Windows apps *don’t* work on Windows 8.1 or Windows 7. They don’t even run on Windows RT tablets (see the “Windows RT, RIP” sidebar). They’re universal only in the sense that they’ll run on Windows 10. In theory.



REMEMBER

A special kind of program called a *driver* makes specific pieces of hardware work with the operating system. For example, your computer’s printer has a driver, your monitor has a driver, your mouse has a driver, and Tiger Woods has a driver (several, actually, and he makes a living with them). Wish that everyone were so talented.

Many drivers ship with Windows, even though Microsoft doesn’t make them. The hardware manufacturer’s responsible for making its hardware work with your Windows PC, and that includes building and fixing the drivers. (Yes, if Microsoft makes your computer, Microsoft’s responsible for the drivers, too.) Sometimes you can get a driver from the manufacturer that works better than the one that ships with Windows.

When you stick an app or program on your computer — and set it up so it works — you *install* the app or program (or driver).

When you crank up a program — that is, get it going on your computer — you can say you *started* it, *launched* it, *ran* it, or *executed* it. They all mean the same thing.

If the program quits the way it’s supposed to, you can say it *stopped*, *finished*, *ended*, *exited*, or *terminated*. Again, all these terms mean the same thing. If the program stops with some sort of weird error message, you can say it *crashed*, *died*, *cratered*, *croaked*, *went belly up*, *jumped in the bit bucket*, or *GPFed* (techspeak for “generated a General Protection Fault” — don’t ask), or employ any of a dozen colorful but unprintable epithets. If the program just sits there and you can’t get it to do anything, no matter how you click your mouse or poke the screen, you can say the program *froze*, *hung*, *stopped responding*, or *went into a loop*.

A *bug* is something that doesn’t work right. (A bug is not a virus! Viruses work as intended far too often.) US Navy Rear Admiral Grace Hopper — the intellectual guiding force behind the COBOL programming language and one of the pioneers in the history of computing — often repeated the story of a moth being found in a relay of an ancient Mark II computer. The moth was taped into the technician’s logbook on September 9, 1947. (See Figure 1-4.)

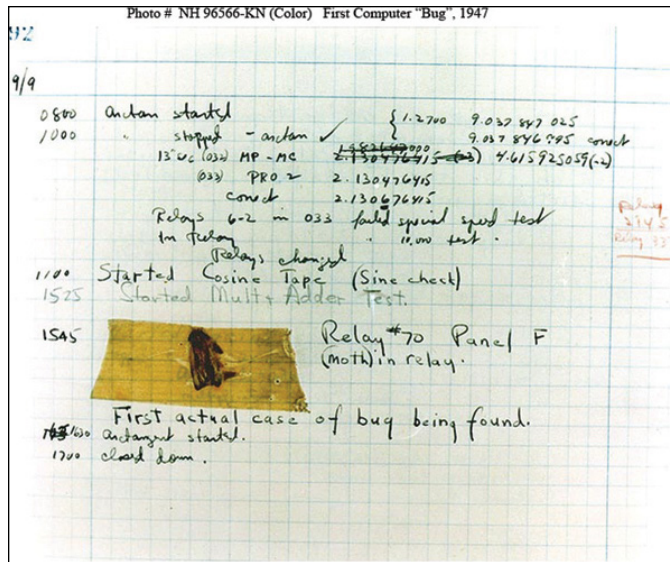


FIGURE 1-4:
Admiral Grace
Hopper's log of
the first actual
case of a bug
being found.

Source: US Navy

The people who invented all this terminology think of the Internet as being some great blob in the sky — it's *up*, as in "up in the sky." So if you send something from your computer to the Internet, you're *uploading*. If you take something off the Internet and put it on your computer, you're *downloading*.

The *cloud* is just a marketing term for the Internet. Saying that you put your data "in the cloud" sounds so much cooler than saying you copied it to storage on the Internet. Programs can run in the cloud — which is to say, they run on the Internet. Just about everything that has anything to do with computers can now be done in the cloud. Just watch your pocketbook.



REMEMBER

If you use *cloud storage*, you're just sticking your data on some company's computer. Put a file in Microsoft OneDrive, and it actually goes onto one of Microsoft's computers. Put it in Google Drive, and it goes to Google's storage in the sky. Move it to Dropbox, and it's sitting on a Dropbox computer.

When you put computers together, you *network* them, and if your network doesn't use wires, it's commonly called a *Wi-Fi network*. At the heart of a network sits a box, commonly called a *hub*, or a *router*, that computers can plug in to. If the hub has rabbit ears on top for wireless connections, it's usually called a *Wi-Fi router*. (Some Wi-Fi routers may not have antennae outside.) Yes, there are fine lines of distinction among all these terms. No, you don't need to worry about them.

There are two basic ways to hook up to the Internet: *wired* and *wireless*. Wired is easy: You plug it into a router or some other box that connects to the Internet.

Wireless falls into two categories: Wi-Fi connections, as you'll find in many homes, coffee shops, airports, and some exceptionally enlightened cities' common areas; and cellular (mobile phone-style) wireless connections.

Cellular Wireless Internet connections are usually identified with one of the G levels: 2G, 3G, 4G, or maybe even 5G. Each G level should be faster than its predecessor.

This part gets a little tricky. If your phone can connect to a 3G or 4G network, it may be possible to set your phone up to behave like a Wi-Fi router: Your computer talks to the phone, the phone talks to the Internet over its 3G or 4G (or 5G) connection. That's called *tethering* — your laptop is tethered to your phone. Not all phones can tether, and not all phone companies allow it.

Special boxes called *mobile hotspot* units work much the same way: The mobile hotspot connects to the 3G or 4G (or 5G) connection, and your laptop gets tethered to the mobile hotspot box. Most phones these days can be configured as mobile hotspots.

If you plug your Internet connection into the wall, you have *broadband*, which may run via *fiber* (a cable that uses light waves), *DSL* or *ADSL* (which uses regular old phone lines), *cable* (as in cable TV), or *satellite*. The fiber, DSL, cable, or satellite box is commonly called a *modem*, although it's really a *router*. Although fiber optic lines are inherently much faster than DSL or cable, individual results can be all over the lot. Ask your neighbors what they're using and then pick the best. If you don't like your current service, vote with your wallet.



Turning to the dark side of the force, Luke, the distinctions among *viruses*, *worms*, and *Trojans* grow blurrier every day. In general, they're programs that replicate and can be harmful, and the worst ones blend different approaches. *Spyware* gathers information about you and then phones home with all the juicy details. *Adware* gets in your face, all too frequently installing itself on your computer without your knowledge or consent. *Ransomware* scrambles (or threatens to scramble) your data and demands a payment to keep the data intact. I tend to lump the three together and call them *scumware* or *crapware* or something a bit more descriptive and less printable.

If a bad guy (and they're almost always guys) manages to take over your computer without your knowledge, turning it into a zombie that spews spam by remote control, you're in a *botnet*. (And yes, the term *spam* comes from the immortal *Monty Python* routine that's set in a cafe serving Hormel's SPAM luncheon meat, the chorus bellowing "lovely Spam, wonderful Spam.") Check out Book 9 for details about preventing scumware and the like from messing with you.