ComputorEdge™ Online — 04/10/09

This issue:
In Motion with the Internet

A look at Internet access, whether on the road (at 60 miles per hour) or at home (in the sticks).

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Digital Dave

"Digital Dave answers your tech questions." by *Digital Dave*

A reader needs help getting her digital photos onto her digital photo frame; what could be causing consistent dropped Skype calls?; how can you tell if a slow-booting computer is up and ready to go?

Dear Digital Dave,

I received a photo frame as a gift, and all my best photos are on my computer. Is there a way to download photos from the computer and into the photo frame?

Thank you very much!

Lynne Seiveno
Chula Vista, Calif.

Dear Lynne,

Yes, there are usually a number of ways to get the digital photos into your digital photo frame. Which method will work best for you depends upon the type of frame you have and the capabilities of your computer.

Most digital frames will support the various forms of memory chips (MS, SD/SDHC, MMC, XD, and CF memory cards) that are used in digital cameras and other devices. If this is the case, then you will be able to plug the chip directly into the frame. If you don't have a memory card slot in your computer for copying photos to a chip, you can get an inexpensive card reader that will plug into your USB slot.

Many digital frames include USB slots that can be directly connected to the computer. The frame should appear to your computer as another drive, making it easy to copy your photos over.

Some of the digital frames support Wi-Fi. If you have a Wi-Fi network at home, then you should be able to send photos directly to the frame. Other frames may include Bluetooth wireless, which will allow the downloading of cell phone photos—such as they are.

In any case, there should be multiple ways to get your computer photos into your digital photo frame. If the frame manual doesn't help, check with the manufacturer's Web site.

Digital Dave

Dear Digital Dave,

My wife is actually taking piano lessons over Skype! The only issue is the video calls between her (here in Colorado Springs) and her piano teacher (in Seattle) get dropped a lot—sometimes 20 times in a one-hour lesson. Nothing in the statistics seems to point to any issue. They both have Vista

laptops, Comcast cable and wireless networks. They have no problem with calls to others—it's only between the two of them.

Jim Densmore
Colorado Springs, CO

Dear Jim,

As much as anything, I've included your letter because of the fascinating way that you're using video communications. This is a boon for both the piano teacher, who can reach more students, and your wife, who can take lessons from thousands of miles away. (I believe I saw your note on this topic on the *ComputorEdge* site a few months ago.)

I suspect that either your wife's piano teacher encounters more problems with Skype connections than your wife—or the reverse. When making a video call, there is a chain of devices (and connections) that could be the source of the problem. However, it is likely to be either on one end or the other.

The chain starts with the camera connected to the computer. In your case, it sounds like a built-in laptop camera. If you had a webcam that plugs into the USB port, I would suggest checking the connections to ensure that they are secure.

At this point, the computer and webcam are interacting with the Skype client software. If you have a buggy, older version, it may need updating. Uninstalling and reinstalling Skype may not be a bad idea, although, if you have good connections with other Skype users, it's not likely the problem.

Next, the computer is connected to the Wi-Fi router. I've seen times when Wi-Fi routers may start acting flaky and drop connection—seemingly for no reason. Resetting (power off, then on) the router will often stabilize the connection.

Then the router is connected to the cable or DSL modem. Check to ensure that all of your cable connections are tight, although if you are only losing your Skype connection and all other Internet activities are fine, this is not likely to be the problem.

The next stop is the Skype server. Other than keeping your Skype software up-to-date, you don't have much control over this. The chain continues in the reverse order down to the piano teacher.

If you or your wife are making regular video calls to other people without problems, it's difficult to see how the source could be on your end. Yet, placing a video call is both processor and memory intensive. If there are other programs that your wife (or her piano teacher) needs to load for each piano lesson, then it is possible that Vista is becoming overwhelmed and losing the connection. Close all unnecessary programs before each lesson.

If you've done all of the above and the problem continues, then ask the piano teacher to take the actions described above.

Digital Dave

Dear Digital Dave,

My computer takes a while to completely boot up. I usually just wait until my taskbar appears to be finished populating to determine when the bootup is complete. However, it's not easy to tell when the

taskbar icons are all there. If I start to use my computer before it is fully booted up, things slow down to a crawl. Is there an easier way to tell when my computer is fully booted up and ready to use?
Steve F.
Denver, CO

Dear Steve,

Waiting for the complete boot up is like waiting for the last kernel of popcorn to pop. Just when you think it's done, there is another pop or two.

You have the right idea about waiting for taskbars to load. I would add that the hard drive should stop chipmunking (flashing lights stop). However, this is also unreliable since there may be other maintenance routines that the operation system has decided to launch.

If you have enough capacity in your computer to avoid the swapping of memory to disk, then launching a program during startup will not actually slow down your computer. It will only appear that way because the program will not fully load until the operating system allows it to load. This makes it seems like the computer is becoming sluggish, when it is merely adding the program launch time to the operating system (and startup programs) load time.

I have a gadget on my Vista machine that shows processor (CPU) activity. It is one of the programs that loads on startup. Initially, it shows 90 to 100 percent usage, but drops to about 10 percent once everything is loaded. You can do the same thing with Windows Task Manager. When you are first logging on and see the desktop, load Windows Task Manager with CTRL-SHIFT-ESC (simultaneously) and select the Performance tab (see Figure 1). When the CPU usage level drops down to a low level and tends to stay there (there may be an occasional burst of activity), the system is probably loaded.

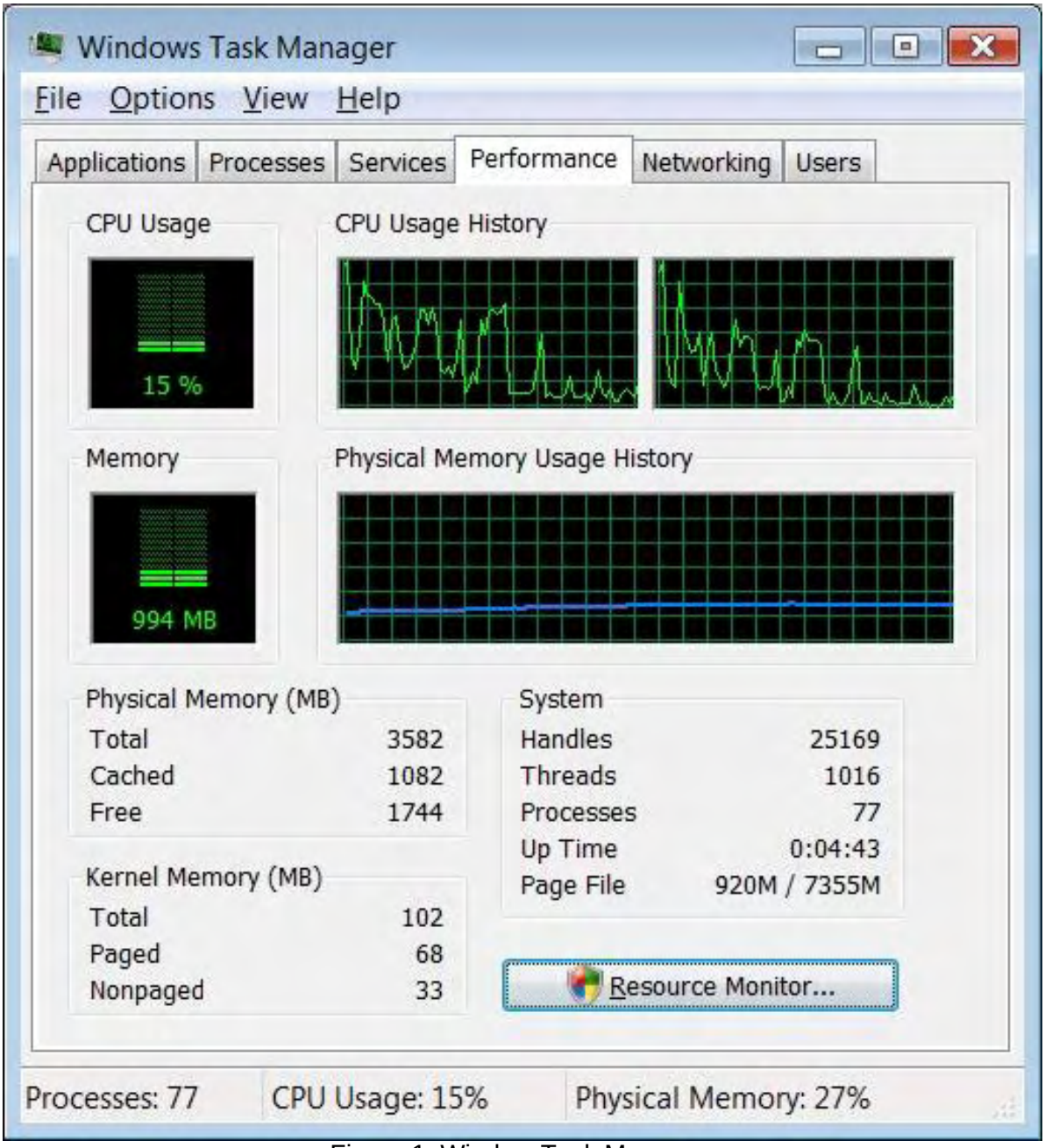

Figure 1. Window Task Manager.

Or, you could just go get a cup of coffee, and the computer will be ready when you get back.

Digital Dave

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On the Move with the Internet

"Web-browsing options when in a moving vehicle." by Jack Dunning

> The Internet can offer very specific and timely driving information for any location in the world. But is in-vehicle Internet access ready for prime time?

Last year, while my daughter was driving from Montana to Oregon, bad weather moved in over Spokane, Washington. It was the type of snow that clogs the roads and leaves cars sitting in drifts on the side of the street. To say the least, this was a disconcerting time for my daughter, having grown up in Southern California with limited experience driving in the snow. Fortunately, she was able to contact me on her cell phone for information about the conditions ahead. I jumped onto the Web and reviewed the sites that provided weather and traffic information for Washington State.

A strong point of one of the Washington Web sites was a webcam system at key points on the highway. I could see the snowy mess in Spokane, as well as the conditions further down the road. I was able to call my daughter and tell her that things would clear up in a few miles, and the rest of her trip would be clear. This is the type of information that is valuable to any driver. If the conditions are worse down the road (traffic backed up or stopped), then it would be wise to stop and spend the night. There is a strong argument for having Internet access in your car—even while in motion.

The vast majority of Web browsing is done while sitting in one place. Even if we have a mobile Internet connection, such as a broadband cellular modem, we usually need to stop the car to use it. It could be too dangerous to use the Internet while driving an automobile. Passengers in a vehicle may use an Internet connection without hazard, although they could find themselves subject to motion sickness. If the information were limited to glancing at screens, such as those found on GPS devices, then roadside webcams and Web weather info could be very helpful. It wouldn't be much different from peeking into the rear-view mirror.

Bringing helpful data into moving vehicles is not new. Global navigation systems and GPS devices have become popular for finding our way around unknown towns. Many GPS models are mounted on the dashboard, verbally giving driving directions. An occasional glance at the screen helps the driver keep his or her bearings. The GPS uses outside (satellite) sources to pin down the car's location and supply critical driving information. Other information that would be useful to a driver is real-time local traffic and weather. XM satellite radio offers continuous reports on both traffic and weather in major metropolitan areas, but what if you're not in one of those

metropolitan areas?

The Internet can offer very specific and timely driving information for any location in the world. Not only is traffic and weather readily available, but in many places webcams, as mentioned in the above example, are mounted on key highways, mountain passes and intersections. Plus, if you have passengers, the entertainment value of the Internet could stave off many of the "Are we there yet?" questions. Sidestepping the issue of increased hazards to the driver's attention, there are many reasons to have Internet connections in a moving vehicle. Someday all cars may come with Internet capability.

Placing the Internet in Moving Vehicles

The primary problem with putting the Internet into cars is that, when the vehicle is moving, it's tough to maintain the connection. Most forms of Internet connections will not work because they are based at a fixed location. Both cable modem and DSL—the most popular forms of Internet service—feed directly into homes and businesses without any way to extend them beyond the short Wi-Fi range. They won't work for a mobile environment. That leaves only cellular broadband and satellite Internet as the current alternatives.

We know that the cell technology works because we use cell phones in cars—some people use them continually. (I use a hands-free unit in the car, but I've noticed that an increasing number of people in California have gone back to holding the cell phone to their ear—in spite of the law prohibiting it.) Cellular broadband seems like a natural match for the automobile. In fact, that is the major type of Internet access that we are starting to see on the road.

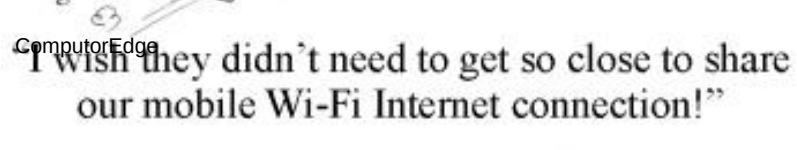
Cellular Broadband in Cars

The major cellular companies (Verizon, AT&T, Sprint, etc.) offer broadband Internet that will work in a moving vehicle as long as you can maintain a cell-reasonable signal. However, you will either be accessing the Internet on your cell phone or via your laptop computer with a broadband modem. It's been reported that the bouncing around on the road doesn't make for a good browsing experience—especially on the phones.

While you will be able to get reasonable speeds with cellular broadband, you will be subject to all of the same dropped-call problems associated with cell phones in moving transports. Plus, the speed will not compete with the cable or DSL you have in your home, and there are problems with video and data streaming. The signal strength will vary, affecting the overall connection speed. In remote areas, if there is no cell coverage, you will have no Internet.

"I wish they didn't need to get so close to share our mobile Wi-Fi Internet connection!"

Automobile manufacturers are starting to put Autonet (*www.autonetmobile.com/*) into some models of cars. (Cadillac just announced a deal with Autonet starting in April). Effectively, Autonet turns your car into a Wi-Fi hotspot. Any Wi-Fi-capable device in the car is able to use the Internet connection. Autonet uses the same cellular broadband as the other cellular systems, installing the wireless modem/Wi-Fi router ($499) in the car (usually in the trunk). Service starts at $29.95 a month, cheaper than the $60 charged by most cellular companies for broadband Internet. You need to implement the usual WPA Wi-Fi security encryption for the Autonet router; otherwise, you may have



someone tailgating you just for your Internet connection.

Sprint has introduced a mobile WiMAX (*en.wikipedia.org/wiki/WiMAX*) service called Xohm (*www.xohm.com/*), (currently only in Baltimore). The advantage of WiMAX service is that it can compete with cable and DSL Internet speeds. (Eventually, WiMAX may also compete in home and business applications.) However, there is plenty of infrastructure to be put in place before WiMAX will be readily available. Even then, coverage will be limited in ways similar to the current cellular broadband.

AT&T and Verizon seem to be betting on Long Term Evolution (LTE) (*en.wikipedia.org/wiki/Long_Term_Evolution*) technology. LTE technology will be significantly faster than even WiMAX, competing directly with all forms of Internet access. LTE together with WiMAX is considered to be the next generation (4G) of digital cellular networks. The significance is that the higher data-transfer rates will make Voice over IP (VoIP), video and other data-streaming applications more feasible for the 4G cellular networks. LTE should start becoming available in the next couple of years. This next generation of cellular networks should be a boon for automobile Internet access.

Satellite Internet on the Move

Commercial satellite service started as a way to deliver television programming to remote areas. Adding Internet capabilities was almost an afterthought. The advantage of satellite Internet service is that it is available anywhere there is a clear path to the southern sky. It reaches areas that will probably never be covered by cellular—including the ocean. In the early days of satellite Internet, downloaded data came from the satellite, but uploading would be done with a separate link (dial-up, DSL, etc.). For some mobile applications, this may still be true. If you're investigating satellite for your in-car Internet, make sure that you are getting a two-way link for your system and an antenna capable of two-way transmissions; otherwise you may run into the same problems that come with cellular broadband.

One of the major issues with satellite Internet access is that the antenna needs to be pointed directly at the satellite. In remote locations, an antenna could be permanently aimed at the satellite; however, when moving on the road, a fixed antenna is useless. Staying aligned with the satellite is a serious problem for a moving vehicle. Every time there is a curve in the road, the antenna needs to compensate. Today the boater or road traveler can get an in-motion antenna that will continually adjust while moving on the water or about the countryside (see Figure 1). Some of the primary players for the in-motion satellite market are the RV King Dome In-Motion Satellite Antenna (*www.kingcontrols.com/king_dome/9754.asp*), Winegard In-Motion (*www.winegard.com/mobile/roadtrip.php*) and KVH TracVision (*www.kvh.com/LandMobile/index.asp*).

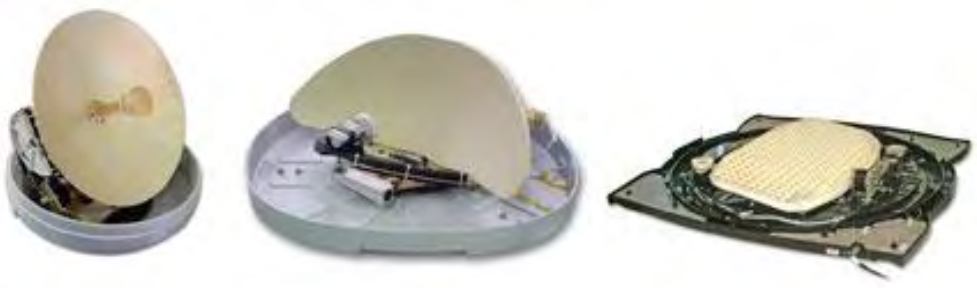


Figure 1. Mobile satellite antennae.

Recreational vehicles and leisure boats are major consumers of satellite services. Initially it was television that they were after, but now that the Internet is available over satellite, there are more reasons for travelers to hook up. Previously, the RV would pull into an overnight camp, and then the satellite antenna needed to be pulled out and manually aligned with the satellite signal. The manual system, although still in use, has given way to an

automatic alignment system that uses GPS to drive the antenna to the proper alignment. The in-motion antennae use a similar automatic system that continually updates the alignment, ensuring the best-possible satellite signal.

The problem with placing an antenna upon the roof of an RV or automobile is its awkward size and shape. The in-motion types have a radome cover, making them more aerodynamic and helping to clear interference caused by rain. (See the figure at the left. The steerable antenna is inside.)

However, they may protrude a foot or more above the vehicle and—if the driver is neglectful—are susceptible to low-hanging branches and bridges. KVH has developed a hybrid phased-array antenna that's only five inches in height and is a little more suitable for automobiles. (See Figure 3 and the antenna on the right in Figure 1.) These antennae use electronic aiming (phased array of elements) as well as a 360-degree swivel and 15-degree vertical motion to align with the satellite. However, I have run into some questions as to whether the KVH TracVisions A7 (*www.kvh.com/Products/Product.asp?id=125*) is suitable for Internet access via satellite. The KVH phased-array antenna is one-way (download only), requiring another connection that uses cellular broadband for the uplink communications. RaySat (*www.raysat.com/?CategoryID=197*) produces low-profile hybrid phased-array in-motion antennas that support two-way Internet access.

Figure 2. The hybrid phased-array antenna can mount on the roof of a car. Where do the skis go?

All of these in-motion satellite solutions are expensive, with the antenna alone running into thousands of dollars. There are also the inherent satellite latency problems (time delays) that will cause problems for VoIP and game playing. The major benefit is that it's possible to get coverage in remote areas with little or no cellular available. Of course, if your Internet depends upon a cellular system for the uplink, you will be out of Internet luck in

many remote areas.

It's going to be a while before Internet access in moving vehicles will be commonplace. Cellular broadband is looking for the next generation of technology, and in-motion satellite is an expensive setup. For now, if you spend your day driving in areas with good cellular coverage, then one of the broadband packages may do the trick for you. If you're navigating the mountains or Death Valley, then in-motion satellite may be the ticket—plus, you will also get your satellite television.

No doubt there are people who have found the optimum solution for browsing the Web while in motion. If you are one of them, I would like to hear how it's worked out for you.

Jack is the publisher of *ComputorEdge* Magazine. He's been with the magazine since first issue on May 16, 1983. Back then, it was called *The Byte Buyer*. His Web site is *www.computoredge.com*. He can be reached at *ceeditor@computoredge.com*

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Satellite Internet Service

“In some areas, it may be your only non-dialup option.” by Michael J. Ross

Commercial satellites orbiting the Earth make possible satellite Internet service, which requires you to have a satellite dish for downloading and uploading data. It beats the heck out of dialup!

If you live in just about any American urban or suburban area, you typically have several options for obtaining access to the Internet from your home. If you have a large amount of patience, but only a small budget, you could go the cheap route and opt for dial-up service with your phone company, in which your computer's modem communicates with the phone company's servers. But dial-up is gradually disappearing, for good reason, as it can be excruciatingly slow—especially for surfing the more popular Web sites, which are increasingly using multimedia and Flash, which provide a richer user experience at the expense of slower performance.

Even if it forces you to dig a bit deeper in your pocketbook, choosing a broadband service—either cable or DSL—is well worth it, and these two types of Internet connectivity are the most popular in the United States, and probably in other advanced countries as well. Cable tends to be the faster of the two, but also the more expensive. The final cost of either option depends upon whether it is bundled with other services that you would have purchased anyway. In the case of cable, such additional services might include premium movie channels. In the case of DSL, they might include a long-distance calling plan and caller ID. Which of the two types of broadband you choose will determine who is your Internet service provider (ISP). That will be the extent of your freedom of choice, because each region of America appears to have just a single phone company and a single cable company.

But what if you are living in a rural area that is not serviced by any such ISP? Or you have decided to trade in your McMansion for a McRV? Would you be forced to go without access to the Internet? Imagine, no Web surfing, no online banking, and complete disconnection from everything from e-mail to eBay. (Some readers at this point may be experiencing anxiety or involuntary twitching at the thought of having to endure "Web withdrawal." Fear not. This was only a hypothetical situation, though admittedly nightmarish for some of us.)

Satellite Savior

Fortunately, there is an alternative, and it does not require a return to the Dark Ages of dial-up, nor a renouncement of the modern high-tech lifestyle. Commercial satellites orbiting the Earth make possible worldwide communications (such as long-distance phone calls), distribution of digital content (such as hundreds of premium television channels), and geographical positioning (such as GPS and Galileo). They also make possible satellite Internet service, which requires you to have a satellite dish for downloading and uploading data. The speeds vary from one vendor to another, as well as which service plan you choose, but the speeds are far better than dial-up, though not as good as cable or DSL.

The minimum hardware for using a satellite service is a bit more than what is required for conventional broadband: The satellite dish can range in diameter from two to three feet, and it needs to be installed in a safe location where it has a clear line of sight to the south (assuming that you are in the northern hemisphere), because the satellites that the dish will be communicating with are orbiting over the Equator. Two modems are needed—one as a downlink and the other as an uplink. Lastly, the modems must be connected to the satellite dish using coaxial cables, and the modem must be connected to your computer using an Ethernet cable.

These requirements are for services that handle both the downlink and uplink through satellite transmission. Initially, some satellite ISPs only downloaded data from the satellite to the customer's dish, allowing the use of reception-only dishes, such as those used for receiving pay television. All uploaded data, including every mouse

click on a Web-page element, was sent from the customer's computer to the ISP using regular dial-up or broadband Internet connectivity. This makes sense if only dial-up service is available in your area, and no broadband service, because most Internet usage is primarily downloading, and the satellite downloading would be a huge improvement over dial-up downloading. But if broadband service is available in your area, requiring its use for uploading defeats the purpose of satellite Internet service: After all, if your computer is located close enough to civilization to have a DSL or cable connection, then what would be the point of paying extra for satellite service, and downloading at a slower speed?

In terms of performance, download and upload speeds for satellite Internet will not be equivalent to those of cable or DSL services, as noted earlier. Secondly, reception of the communication signals can be adversely affected by environmental factors, such as heavy rain and tree branches swaying in the wind and blocking the line of sight periodically.

Satellites Stateside

HughesNet (*www.hughesnet.com/*), formerly known as DIRECWAY, offers satellite Internet for residential needs (*go.gethughesnet.com/*) directly and through dealers. As of this writing, HughesNet has six different levels of service, ranging from its Home plan to ElitePremium. The former, costing about $60 per month, has download speeds ranging from roughly 550Kbps to 1.0Mbps, and upload speeds ranging from 70Kbps to 128Kbps. The ElitePremium plan, at about $350 per month, offers 2.7-5.0Mbps and 165-300Kbps, respectively. HughesNet's geographical coverage, as with most other services, is limited to the 48 contiguous United States. HughesNet provides a 30-day money-back guarantee, but that excludes the installation charges and other fees.

There are other satellite ISPs, and we will consider those in a moment, but HughesNet is one of the major players in the market—if not the largest—so let's consider how its service and pricing compares to a standard broadband service. As an example, my own current DSL plan offers download speeds of 1.5Mbps, and upload speeds of 512Kbps. The closest equivalent within the various HughesNet options would be the Elite plan, if we use the typical speeds, and not the maximums (which are what the company somewhat deceptively lists on its pricing page). The service is almost $120 per month, versus my DSL plan at almost $25. That is a significant difference, but that is one of the downsides of living out in the sticks.

WildBlue (*www.wildblue.com/*) has three different plans: Its Value package offers speeds of 512Kbps for downloading and 128Kbps for uploading (all speeds listed here are maximums), at almost $50 per month (the regular rate, aside from any special deals). The Select package offers 1Mbps and 200Kbps, at almost $70 per month. The top-of-the-line package, Pro, offers 1.5Mbps and 256Kbps, at almost $80 per month. WildBlue's failure to list typical usage speeds on its Web site should raise a red flag for prospective customers, since there is no way to know ahead of time what your actual speeds will be.

SkyWay USAre (*www.skywayusa.com/*), based in Kentucky, is clearly aimed at rural America. The company has four different plans, ranging in monthly cost from almost $30 to almost $80, with listed maximum download speeds from 256Kbps to 1.5Mbps. As with any of the other ISPs mentioned here, there are additional installation charges, and probably government-mandated communications fees, as well.

Other satellite Internet access providers in the United States include EarthLink (*www.earthlink.net/access/satellite.faces*), StarBand (*www.starband.com/*), and Tachyon Networks (*www.tachyon.net/*). There may be others in this country that are not as well known, or at least do not advertise effectively. Likewise, there are probably even more that focus on other markets exclusively, such as Europe and Asia.

Surfing the Web Surfside

Skycasters (*www.skycasters.com/*) covers most of the Western hemisphere, making it a better option for

individuals or businesses that plan to have one or more locations in Latin America or other regions in this hemisphere. The company has Platinum and Gold plans, each with a half dozen sub-plans, offering different speeds and different monthly costs. The least expensive package, the Gold sub-plan at $149 per month, offers download/upload speeds of at least 384Kbps/64Kbps. Anyone concerned about the service levels they would receive will be interested in Skycasters's Committed Information Rate (CIR), which means that you will receive at least 110 percent of the stated CIR speeds at least 90 percent of the time—usually more than that. One difference, compared to the American-only satellite ISPs mentioned above, is that the dishes appear larger and a lot more expensive.

These differences are probably to be expected of any satellite ISP that offers coverage on more than one continent. At least when you move to the Caribbean to run your online business, you won't have to deal with the local phone and cable companies for broadband service, assuming they even support it.

So when you want to get away from it all, either in a cabin in the woods or an RV on the highways, you can still stay connected to the "information superhighway," just as long as you and your satellite dish can look up at the equatorial heavens.

Michael J. Ross is a Web developer (*www.ross.ws*), writer, and freelance editor. He creates Web sites that help entrepreneurs turn their ideas into profitable online businesses.

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Windows Vista Tips and Tricks

Windows Vista Tips and Tricks

"Supersized Fun with the F11 Key" by Jack Dunning

The F11 function key is used to expand windows in Firefox and Internet Explorer. But the results in Vista are even more surprising.

I noticed Walter's comment to Digital Dave last week about using the F11 function key in Firefox and Internet Explorer to expand windows. I gave it a try, and the results in Vista were so surprising that I thought it was worth a mention.

The documentation states that the F11 function key will toggle between a regular view and full-screen view of a browser window, similar to clicking the little box in the upper right-hand corner. F11 does do that, but in Windows Vista, the action does even more. Initially, the screen may be maximized with a sidebar displaying at the right, menus across the top of the browser, and open window buttons in the taskbar at the bottom, as shown in Figure 1.

Figure 1. Normal maximized window for Internet Explorer showing taskbar and sidebars.

Where the sidebar, taskbar and top browser menu are included, there is a great deal of space that's not accessible by the browser—even on larger monitors. One click of the F11 key, and Figure 1 turns into Figure 2, taking up the entire screen area. This may be one of the slickest browser tricks I've seen. It isn't merely the growth of the window that's impressive, but the fact that it covers up almost all of the screen with content, including the browser menus at the top. This is truly full-screen.

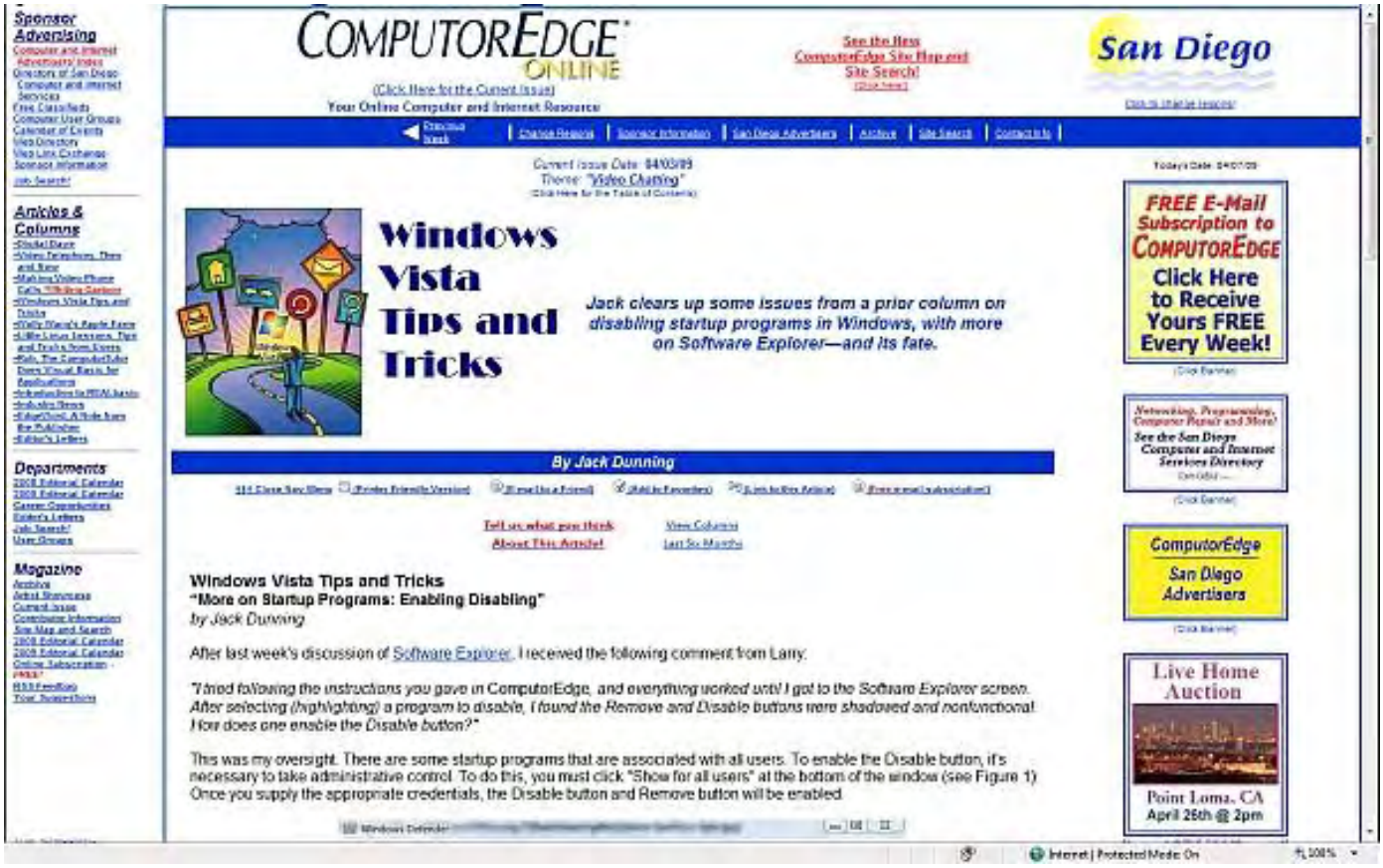

Figure 2. Window maximized for Internet Explorer using the F11 key covering all else.

Another click of F11 returns the windows to the normal maximized size. This should be called the super maximize button, except the effect was a little funky in Firefox. Unless you start in a normal non-max window, the F11 will make the super-max window the regular window. In order to get a regular-size window back in Firefox, the supersized window needs to be resized manually. That's not a easy task when some of the edges are off the screen. I couldn't recommend using F11 with Firefox in a window that's already maximized. (The F11 key doesn't do anything in the Google Chrome browser.)

Forgetting about browsers, there is another Windows Vista program that uses the F11 function key to supersize its window—Window Explorer. For many people, expanding Window Explorer to utilize the whole screen may be more useful that expanding browsers—especially if looking at thumbnails, as in Figure 3.

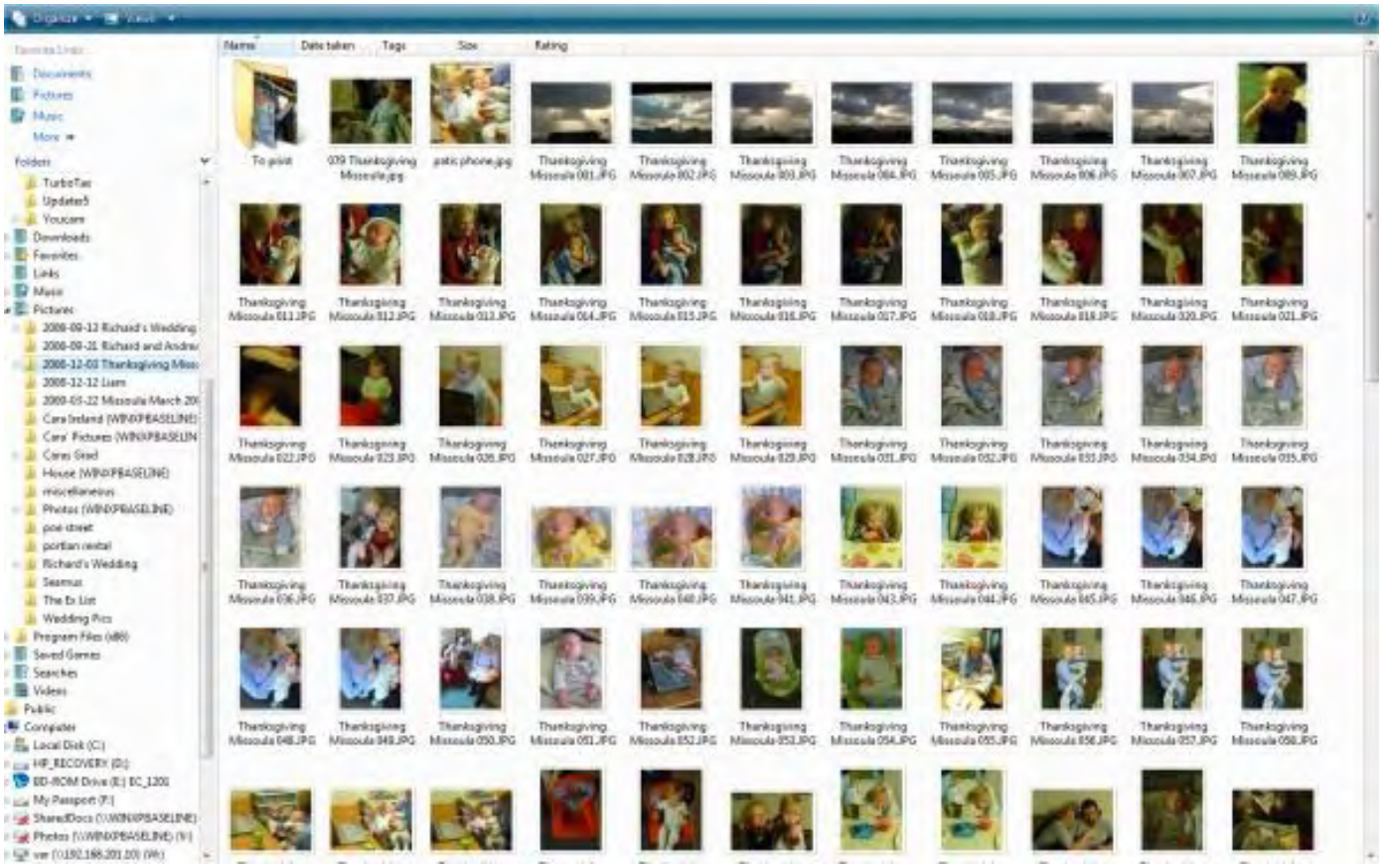

Figure 3. Windows Explorer in super-max view covering the entire screen.

Jack is the publisher of *ComputorEdge* Magazine. He's been with the magazine since first issue on May 16, 1983. Back then, it was called *The Byte Buyer*. His Web site is *www.computoredge.com*. He can be reached at *ceeditor@computoredge.com*

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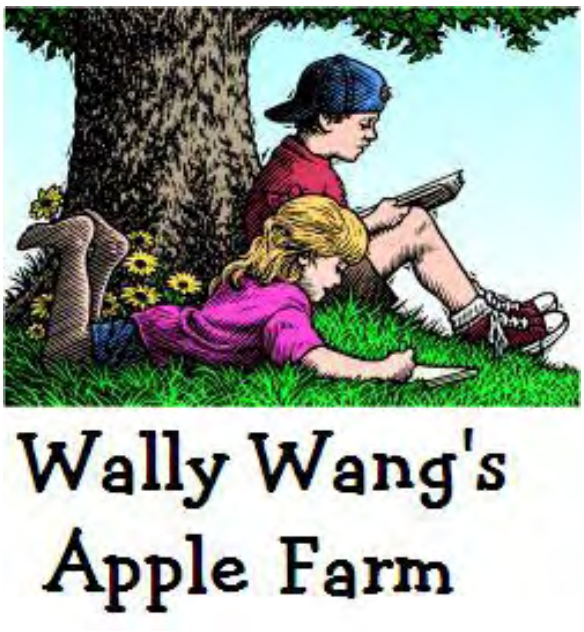

Wally Wang's Apple Farm

“Learning on the Internet” by Wally Wang

Stanford University's online offerings can extend a quality college education to everyone. Also, a discussion about getting a wireless router for your new Mac; a look at Web page editors; and a tip on using Spaces to change your physical screen into multiple virtual screens.

One of the hottest topics these days is learning to program the iPhone. While there are plenty of iPhone programming books available, few universities offer iPhone programming classes (since most iPhone programmers are busy making money selling iPhone apps and don't have time to teach anyone what they know). To help teach more people how to program the iPhone, Stanford University is running an iPhone programming class, taught by Apple programmers themselves. Since not everyone can rush up and enroll in this course, Stanford will post their iPhone programming classes for free.

Just follow this link (*deimos.apple.com/WebObjects/Core.woa/Browsev2/itunes.stanford.edu*) and you can download each lecture within iTunes. Now you can transfer this course to your iPhone, or just study it from your desktop computer. You'll get a Stanford University education on iPhone programming without the hassle of attending classes or even paying tuition. (Of course, you won't get any college credit for the course, but it's the knowledge that really counts anyway.)

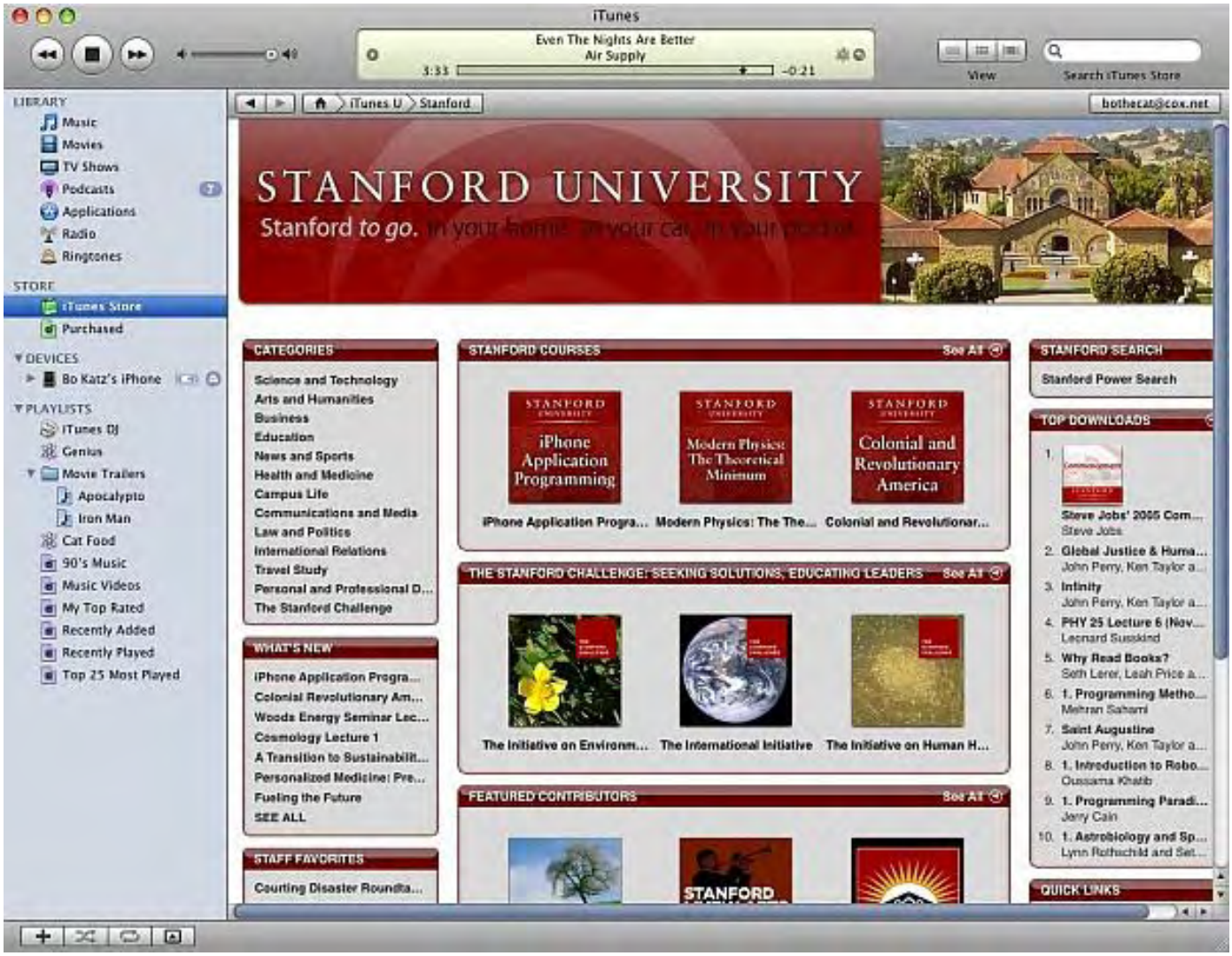

Figure 1. Downloading Stanford University's iPhone programming course through iTunes.

Stanford University's online offering can extend a quality college education to everyone. If you have the desire and motivation, you could pick and choose the best classes from Stanford University and other schools, and get a college education from your computer. Or you could browse the Internet and read the latest gossip about Lindsay Lohan. Which option do you think will help you in the long run?

Of course, the key to learning over the Internet is getting access to the Internet. While some people still remain offline, almost everyone else is getting online. If you're still one of the few using dial-up connections, you'll need to buy an optional USB modem if you get a new Macintosh because the latest models no longer include a built-in modem.

Every Macintosh includes an Ethernet port for plugging in a cable to get on the Internet, but many people may want wireless access, especially for laptops. The simple solution is to get a wireless router from Apple, such as AirPort Express, AirPort Extreme or Time Capsule. Apple's routers tend to cost more than routers from other companies, but they're much easier to set up and run with Macintosh computers.

If you're going to get a wireless router from a company other than Apple, you'll have to worry about four wireless standards:

• 802.11a
• 802.11b

• 802.11g
• 802.11n

For all intents and purposes, the 802.11a and 802.11b standards are obsolete and can be safely ignored. The 802.11g standard is currently in widespread use, but the 802.11n draft standard promises longer range and higher speeds, and that's why the latest Macintosh models use 802.11n. Without getting bogged down with the technical details, the 802.11n standard is the fastest wireless standard available. If you get Apple's Time Capsule or AirPort Express or Extreme, you'll have 802.11n wireless access with no hassles.

If you want to save money, get a wireless router made by another company. The one drawback is that 802.11n isn't officially a standard yet, so if you buy an 802.11n wireless router from another company, it should (note the emphasis on "should") still work with your Macintosh. If not, it will just connect at the slower and shorter-range 802.11g standard.

In other words, unless you really care about absolute speed with the 802.11n draft standard, you can plug in practically any wireless router and connect your Macintosh to the Internet with few problems.

* * *

When you get access to the Internet, it's an easy step toward wanting to put up your own Web site as well. There are plenty of free and low-cost hosting sites that provide simple templates to help you design a Web page without knowing hardly anything about computers. Just point, click and drag stuff around, and you can create a decent Web site in minutes.

For those who want something more than cookie-cutter Web page designs, the next step up is to use Web page editors. Apple provides iWeb (*www.apple.com/ilife/iweb*) as part of its iLife suite, so you might as well toy around with it and see what you think. For another easy, yet powerful Web page editor, take a look at RapidWeaver (*www.realmacsoftware.com/rapidweaver*).

I tried iWeb, loved it, but eventually found RapidWeaver more flexible. Both iWeb and RapidWeaver are great programs for helping you create Web pages in a hurry, but I've now run into limitations with both programs. After designing a Web page quickly and easily, it's much harder to modify those Web pages.

For example, iWeb lets you insert Google AdSense ads as a banner at the top of the page, but RapidWeaver makes this seemingly simple task more complicated. After struggling with RapidWeaver's limitations, I've decided it's time to move on.

At one extreme I tried Nvu (*www.net2.com/nvu*), a free Web page editor. Nvu worked great, but I decided to try Dreamweaver (*www.adobe.com/products/dreamweaver*) as well. If you just need to put up a personal Web site, you probably won't need Dreamweaver's firepower (or $399 price tag). After using Dreamweaver, it's obvious why the program is the choice of professional Web designers.

One particularly handy feature is the program's ability to display your Web pages as pure HTML code, as preview mode so you can see exactly how your Web pages will look in a browser, or a split screen that shows both your HTML code and Web page preview at the same time.

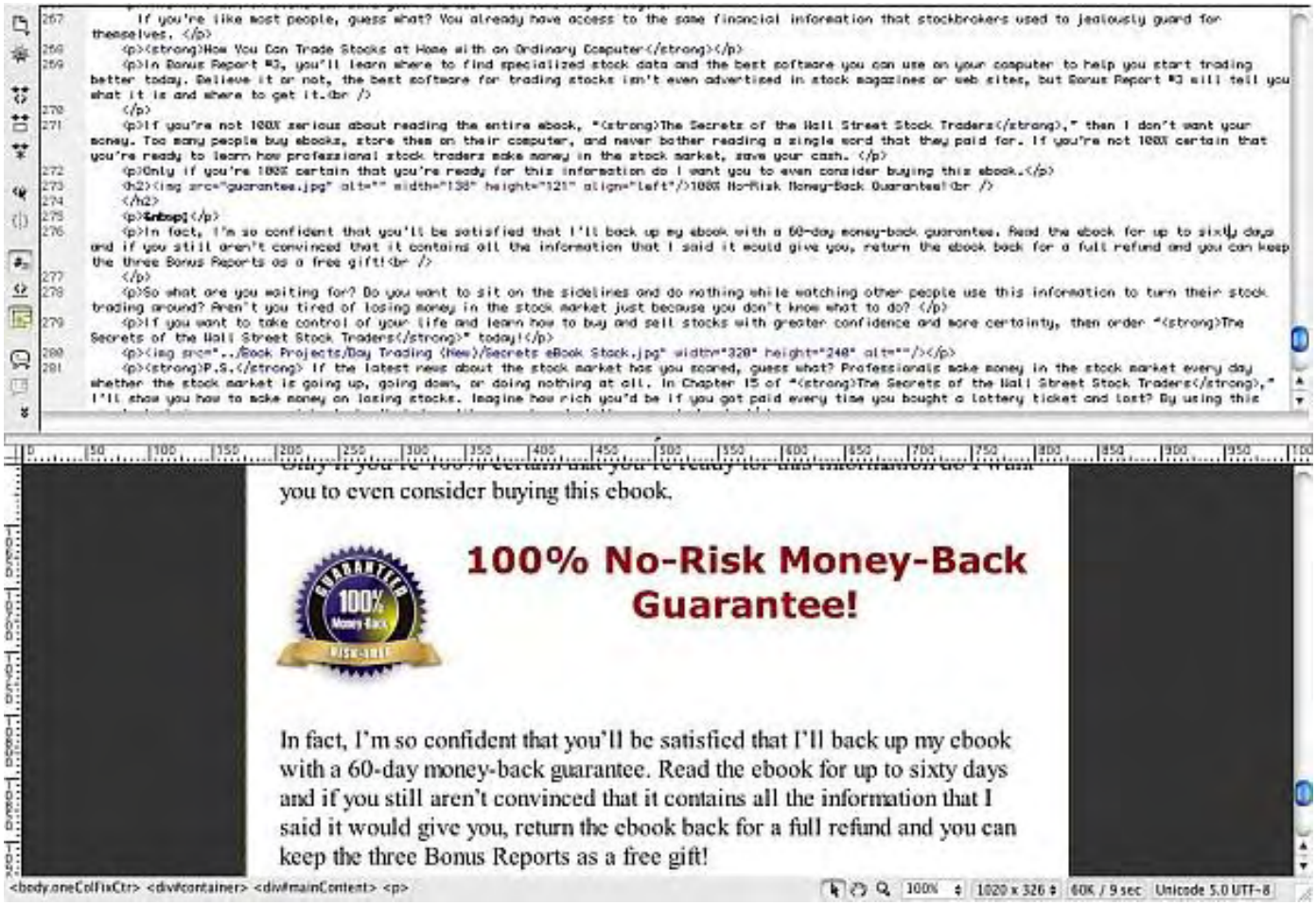

Figure 2. Dreamweaver's split screen feature lets you modify HTML code and see the results immediately.

By letting you modify Web pages like typing in a word processor or by modifying the underlying HTML code, Dreamweaver gives you absolute control over every aspect of your Web pages, whether you want to control them by editing the raw HTML code or choosing commands from the user interface.

Since Web pages can be more than just HTML code, Dreamweaver supports Cascading Style Sheets (CSS), Extensible Markup Language (XML), VBScript, ColdFusion and PHP, which is the language used extensively for creating dynamic Web pages.

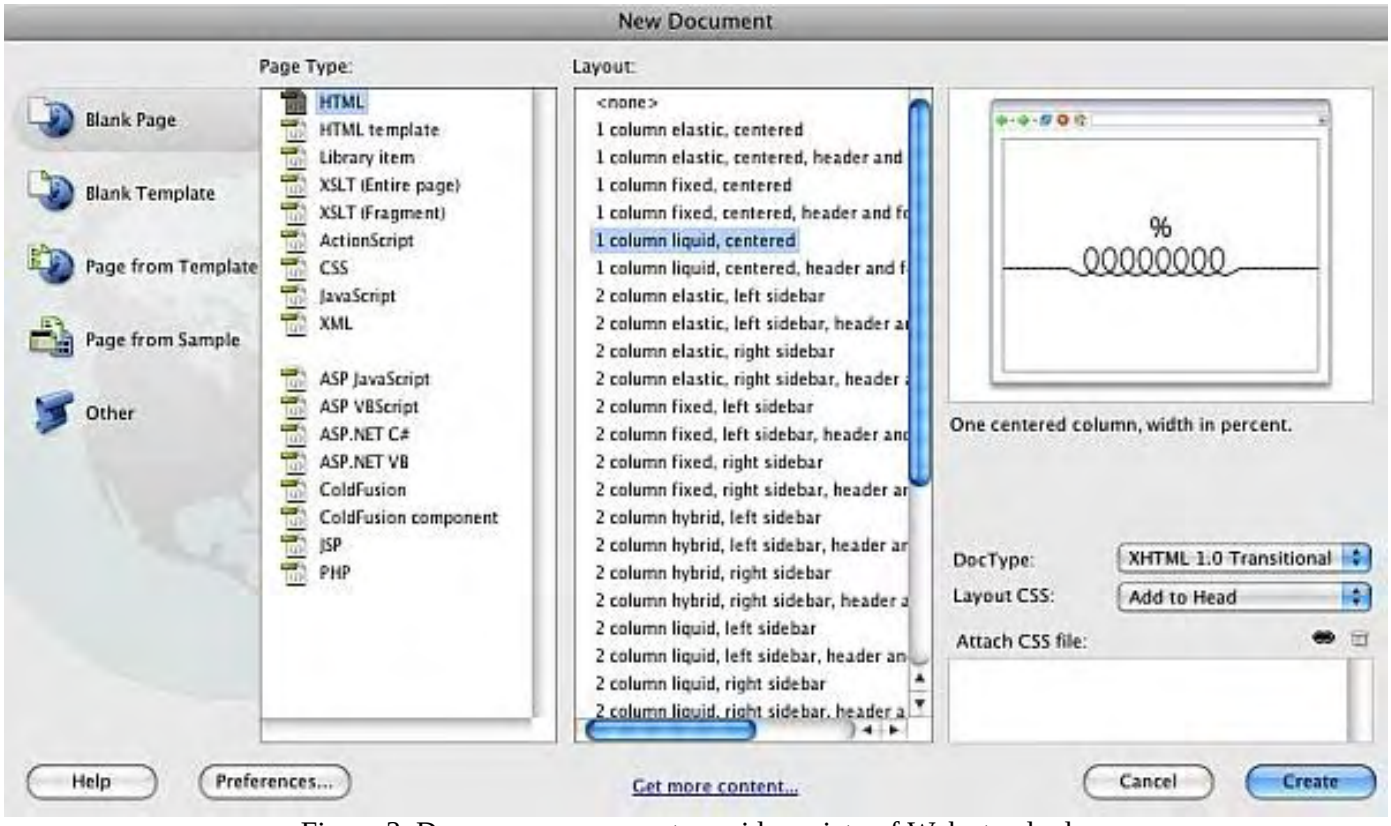

Figure 3. Dreamweaver supports a wide variety of Web standards.

While you can design a Web page without bothering with any particular language at all, you may want to dig into your Web page's code and tweak something yourself. To give you a hand, Dreamweaver displays pop-up menus that guide you into choosing acceptable commands. That way you won't mistype a command or choose an inappropriate command by mistake.

Figure 4. Pop-up menus help you edit code.

If you just want to throw text and pictures to create a personal Web page, use iWeb or RapidWeaver. When you're ready to craft custom-designed Web pages, that's the time to use Dreamweaver.

* * *

Many people just keep getting bigger and bigger monitors so they can view and open multiple program windows at the same time. While bigger screens always give you more room, there's a simpler way to organize your open program windows, and that's by using Spaces.

Just click on the Apple menu and choose System Preferences. Then click the Exposé and Spaces icon to open the Exposé and Spaces dialog. Click the Enable Spaces check box and click on the Plus and Minus sign icons next to the Rows and Columns labels. This will let you define the number of screens you want open, such as four.

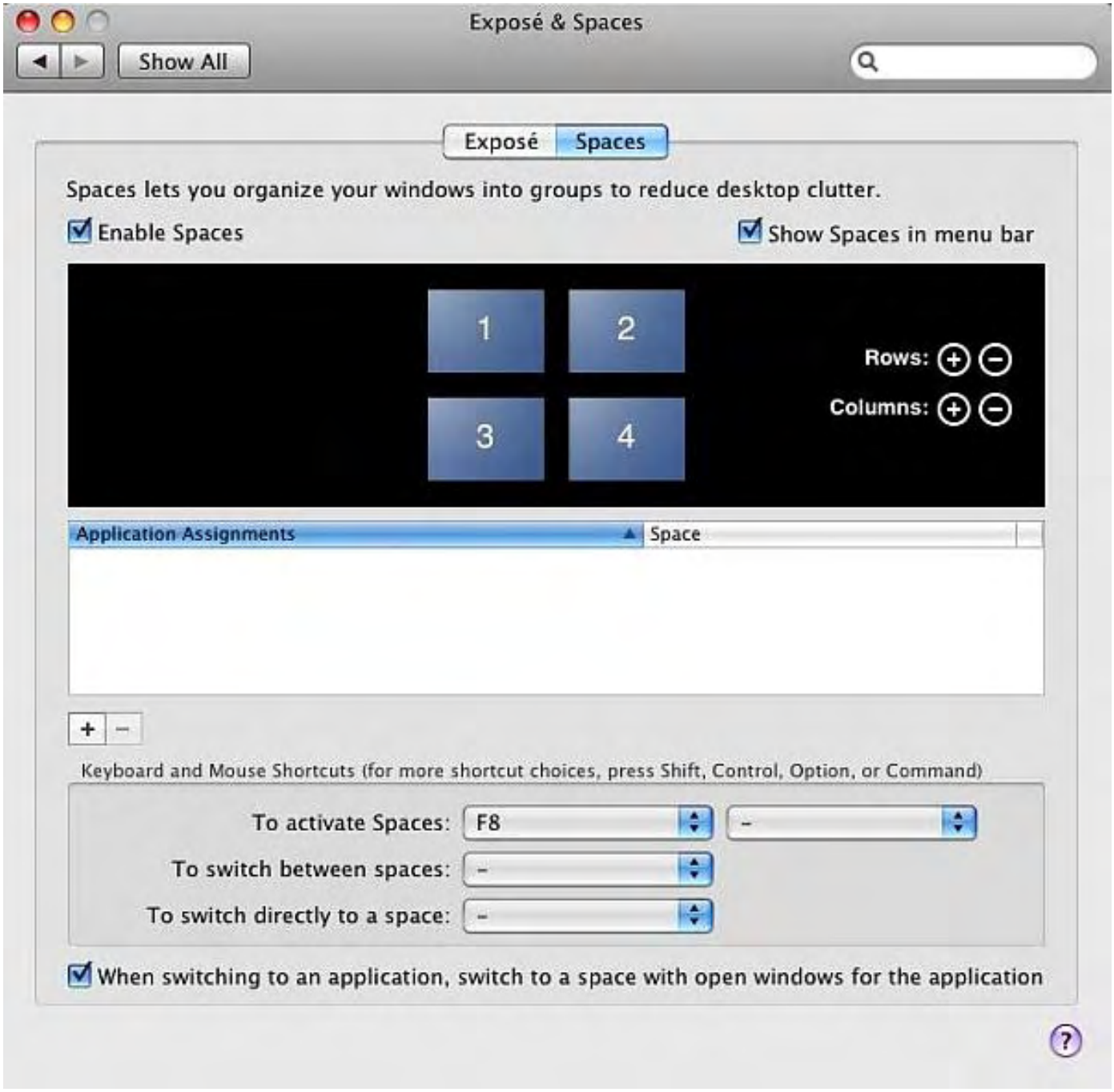

Figure 5. Spaces lets you define how many virtual screens to create.

Now you can press F8, and Spaces displays multiple virtual screens where each screen can contain a different set of open windows. For example, one screen might contain your word processor document, another might contain iTunes or Safari, and still another screen might contain Mail or iChat windows.

By dividing your physical screen into multiple virtual screens, you can keep yourself organized without cramming everything on one screen and feeling like you need to buy a bigger screen to hold everything.

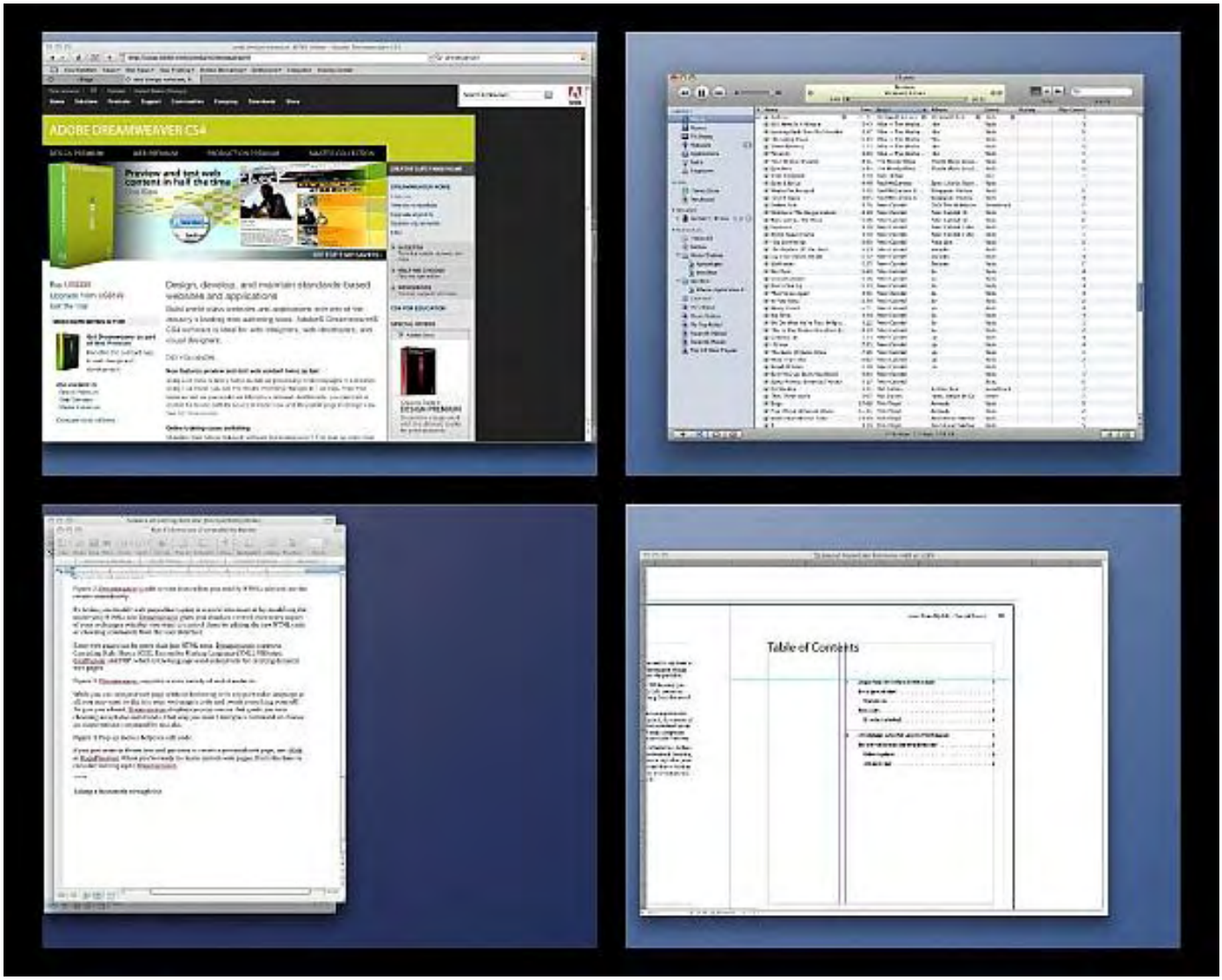

Figure 6. Spaces lets you organize windows in multiple screens.

In the early days, before Wally became an Internationally renowned comedian, computer book writer, and generally cool guy, Wally Wang used to hang around *The Byte Buyer* dangling participles with Jack Dunning and go to the gym to pump iron with Dan Gookin.

Wally is responsible for *Microsoft Office 2007 for Dummies*, *Breaking Into Acting for Dummies*, *Beginning Programming All-in-One Reference for Dummies*, and *Mac All-in-One Reference for Dummies* from *www.dummies.com*, as well as, *Steal This Computer Book 4.0*, *Visual Basic Express 2005: Now Playing*, and *My New Mac* from *www.nostarch.com*. He is also the co-author of *Strategic Entrepreneurism* from *www.selectbooks.com*.

Every Saturday morning from 9:00 am - 10:00 am in San Diego, you can hear Wally with fellow co-hosts Dane Henderson and Candace Lee, on the radio show CyberSports Today (*www.cybersportstoday.com*), which covers the video gaming industry on ESPN Radio 800 AM. Wally covers the military history side of the video game industry.

When not performing stand-up comedy or writing computer books, he likes to paper trade stocks with the video game Stock Reflex (*www.plimus.com/jsp/download_trial.jsp?contractId=1722712&referrer=wwang*).

Wally can be reached at *wally@computoredge.com*.

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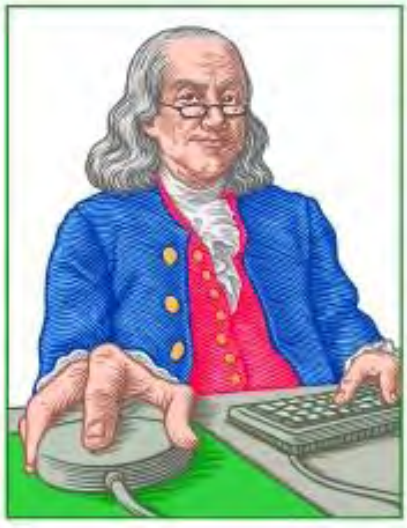

Little Linux Lessons: Tips and Tricks from Users

“Linux users share ideas and ask for help.” by ComputorEdge Staff

For manipulating and analyzing files, one of the most important operators is the pipe (|).

Building Commands with Pipes

For manipulating and analyzing files, one of the most important operators is the pipe (|), which is represented by the vertical line character often on the same key as the backslash. As the name suggests, by using the pipe, the output from one command can be sent to another. For example, the sorting of a directory listing using the ls command can be piped to the sort command to reverse the order:

```
[/var]$ ls | sort -r
yp
tmp
spool
rwho
run
preserve
named
msgs
mail
log
lib
heimdal
games
ftp
empty
db
cron
crash
backups
audit
at
account
[/var]$
```

In this case, the -r parameter tells the sort command to reverse the order of the sort. (See "man sort" for more

parameters for the sort command.)

The pipe adds a great deal of power when combining commands. In the following example, an e-mail log is analyzed for how many incoming e-mails have been rejected for being on the Spamhaus blacklist:

```
grep spamhaus /var/log/maillog | wc -l
```

The command "grep spamhaus" will find each line in the log that contains the word "spamhaus," which is then piped to the wc (word count) command. The -l parameter tells wc to count each line and ultimately returns the number of times "spamhaus" was found.

Linux commands can be piped together in many ways, limited only by your imagination. You can use multiple pipes on the same line—each working on the output from the previous line. If you don't see the command that you need, you may be able to build it by piping Linux commands together.

Give Us Your Linux Tips and/or Questions

*If you have an opinion on these or other Linux topics, then please let us know. Also, if you have another Linux tip that works for you and would like to pass it along (or have a question), please drop us a line at Linux Lessons (*ceeditor@computoredge.com*).*

This is a column for Linux and Unix-like operating system users. The goal is to give Linux users an opportunity to share tips, tricks and ideas with both fellow users and the *ComputorEdge* Linux newbies. Each week in this column, we will highlight the thoughts you submit to us. This is your column. As long as a submission is dealing with the Linux/Unix-like world, we want to share it.

The tips and tricks may be short or long, and can include graphics. If there is a little technique or program that you use on a regular basis, then we want to hear about it. You may also pose questions for other Linux users to answer. E-mail your ideas or questions to Linux Lessons (*ceeditor@computoredge.com*). Be sure to put the word "Linux Lessons" in the subject line so it won't get lost in junk mail. We depend upon you to make this column a success.

Jack Dunning
ComputorEdge

ComputorEdge always wants to hear from you, our readers. If you have specific comments about one of our articles, please click the "Tell us what you think about this article!" link at the top or bottom of the article/ column. Your comments will be attached to the column and may appear at a later time in the "Editor's Letters" section.

If you want to submit a short "ComputorQuick Review", or yell at us, please e-mail us at *ceeditor@computoredge.com*.

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Rob, The ComputorTutor Does Visual Basic for Applications

“Even More Mailing List Fun” by Rob Spahitz

Last week, we looked at how to take some imported data, filter out the unwanted records, and put the rest into our own tables. This week, we'll review that with another table and see some of the problems we may encounter.

Last week, we looked at how to take some imported data, filter out the unwanted records, and put the rest into our own tables. This week, we'll review that with another table and see some of the problems we may encounter.

You can grab last week's database from my *ComputorEdge* Web page at *www.dogopoly.com/ce*.

We had previously pulled a bunch of area codes from the Web site *www.tollfree.att.net/area_codes.html* and stored these, their corresponding states and a collection of cities into a temporary table called tbl_Import_AreaCodeInfo. If you look at the area codes in there, sometimes the records contain three-digit numbers; some have parentheses and some are blank. We need to find a way to filter out the blanks and to remove the parentheses.

Let's go build a new query. In the Query section, add the Import table and select just the NPA field (which is apparently the area code field). It would probably also look nice to see everything sorted, so sort it Ascending. Since we want to filter out the blank (null) entries, add the Criteria "Is Not Null" (or just "Not Null," and Access will put "Is" in for you), as seen in Figure 1.

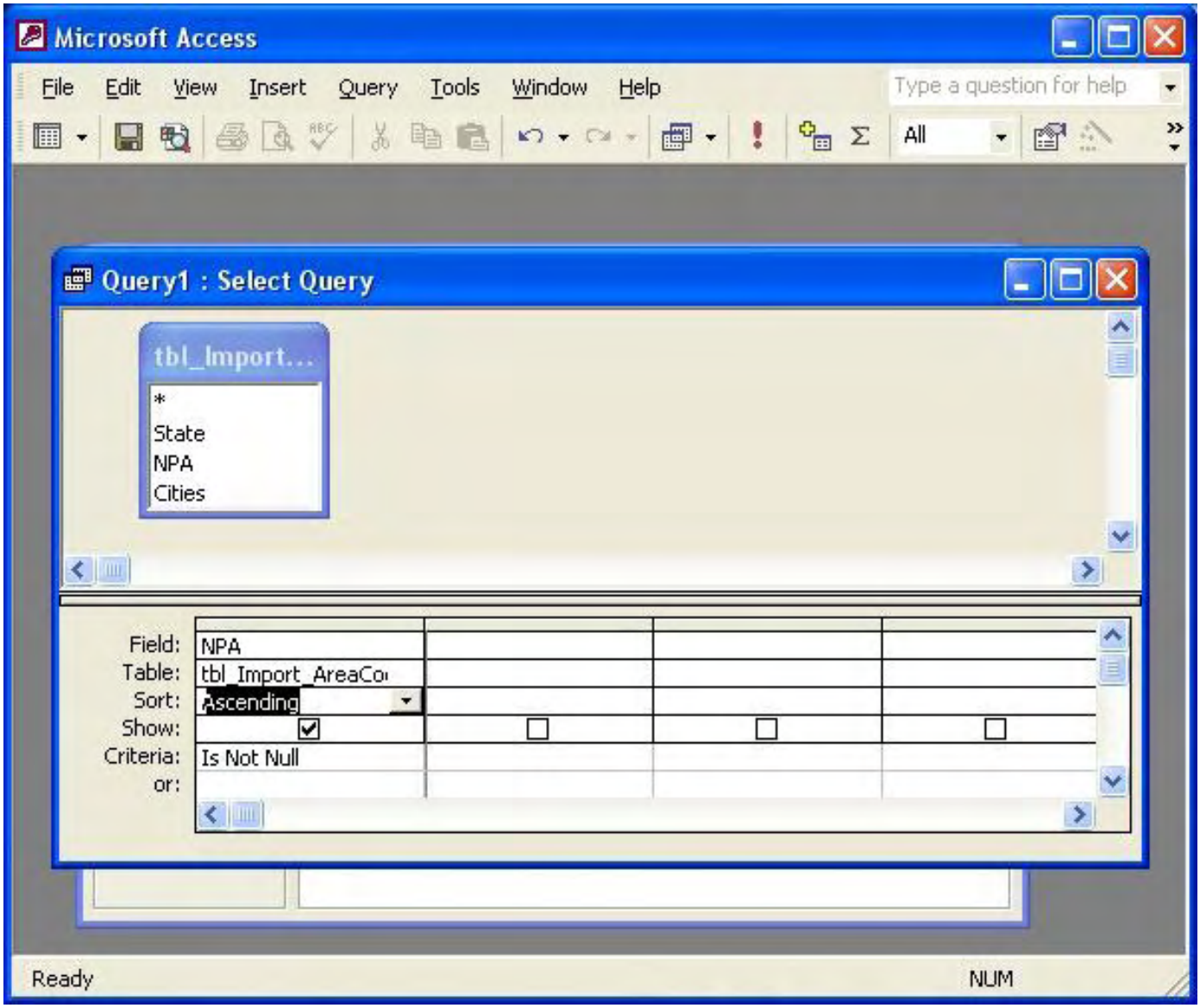

Figure 1. Selecting Area Codes.

When you go to Datasheet view, you get all of the non-null area codes, but five have parentheses and one is "(tba)," which is apparently a new area code that has not yet been defined. We also see at least one duplicate entry that should be filtered out like we did last week.

Remove the "tba" entry by updating Criteria with this:

```
Is Not Null And Not "(tba)"
```

Now let's tackle the parentheses problem. This probably has many solutions. I'm going to offer one that will work in Access, but probably not other databases. Since Access queries often let you insert functions that are similar to those found in Visual Basic, I decided to try one function, and it worked: Replace. The Replace function in Visual Basic lets you search through some text for specific matching text and replace that with something else. In our case, we want to search for parentheses and replace them with nothing. Since the Replace function works one match at a time, we actually have to use the function twice, once to remove the left parenthesis and again to remove the right parenthesis.

Currently, we simply have the field NPA. If we view it, we see both parentheses. To remove the first

parenthesis, put this into a blank column's Field:

```
Replace(NPA,"(","")
```

We now have a new entry called Expr1. View the query and notice that the opening parentheses are gone. You could take that one step further and update that field to also remove the right parentheses with Replace(Replace (NPA, "(", ""), ")", "")) but we'll handle it another way so we can ensure that each step works. In another empty column, enter this into the field:

```
Replace(Expr1,")","")
```

As long as the previous item was named Expr1, you can now use that in another expression in a new calculated field. You should now have something like Figure 2.

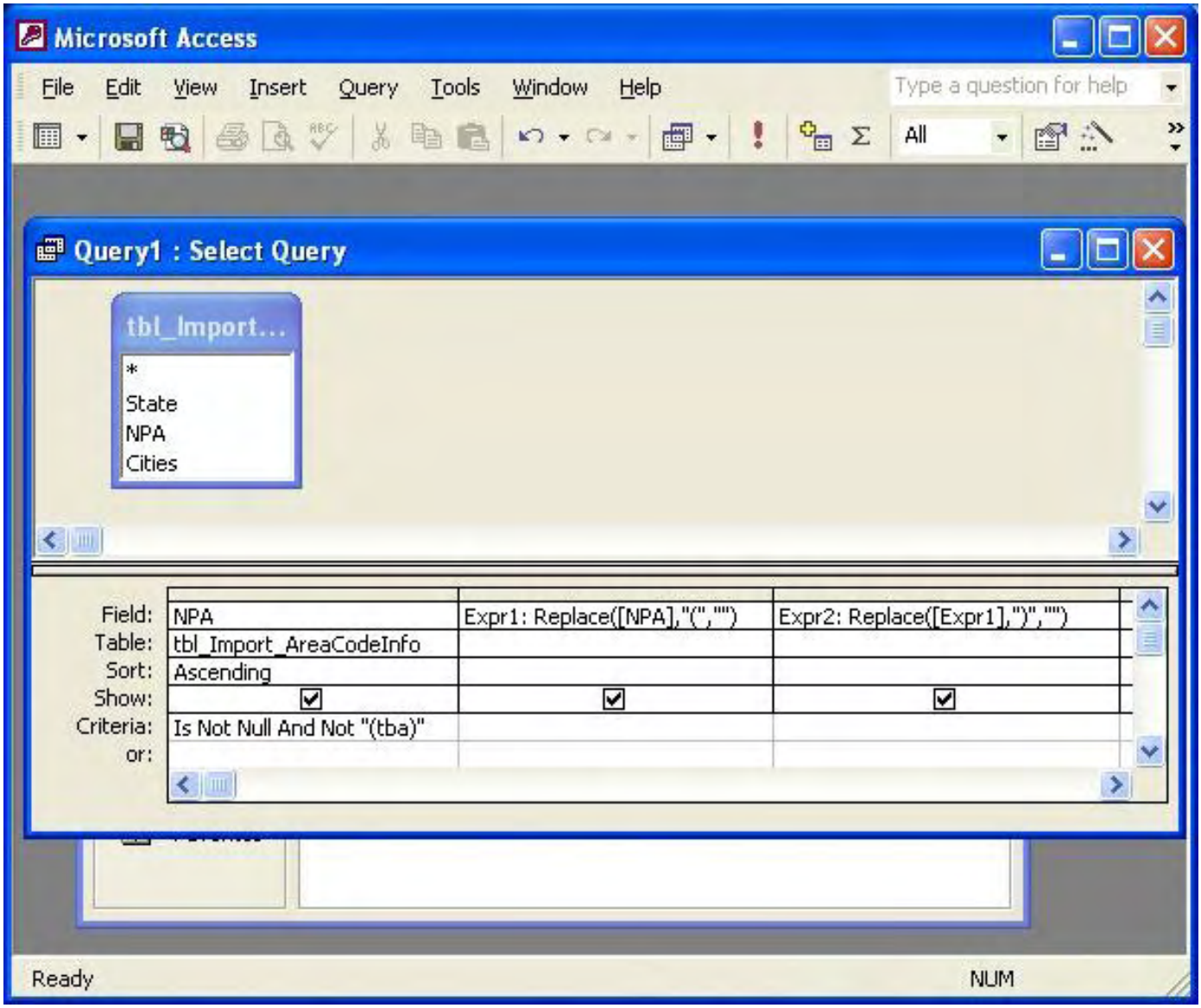

Figure 2. Extracting Area Codes.

Viewing these, we see that the third column has the information we want to add to tblAreaCode. The items are

no longer sorted, but if you try to sort them according to the third column (rather than the first), Access wants to sort first, then calculate the fields, so it doesn't know what Expr1 is and pops up a dialog box to ask you. The way around this problem is to save the query and create a new query based on this query, but with the third field sorted. So save the query with the name qryAreaCode_Temp. Create a new query in Design view using that query (found in the "Queries" tab of the Show window).

Select the third field from the other query and Sort it Ascending. Switch this to an Insert Query like we did last week: From Design view, select menu Query/Append Query.... From the list, pick tblAreaCode, then click the OK button. In the column's Append To row, select AreaCode. Preview the data to ensure that the list is as expected. If it's good (apparently 255 records), go ahead and Run the query (menu Query/Run). At the message warning that you are about to append 255 records, click on the Yes button. Uh oh! You get another warning, as seen in Figure 3.

Figure 3. Insert problem discovered.

What this basically indicates is that it found one of several types of problems with the data. In this case, it was trying to save values into a number field, and there were some problems with some of the data. What happened? Wasn't the data that we saw correct?

Well, sometimes what you see is not what you get. The problem here is that the data that we loaded contained "newline" characters. When we view the data, Access shows us just the first row of data. First, click the No button to cancel the Append. Now go back to your original query, and let's add one more thing to see if we can figure out the problem records.

In a new column in qryAreaCode_Temp, add the following (just a hunch I had since the data looked fine):

```
Len([Expr2])
```

This will become a new expression. When you view the data, you see the problem. Some of the records have lengths of 8, 9, 13 or 14. However, the data looks fine. To see more, grab one of the lines between rows and make it about twice as high. When you do that, the problem is revealed, as seen in Figure 4.

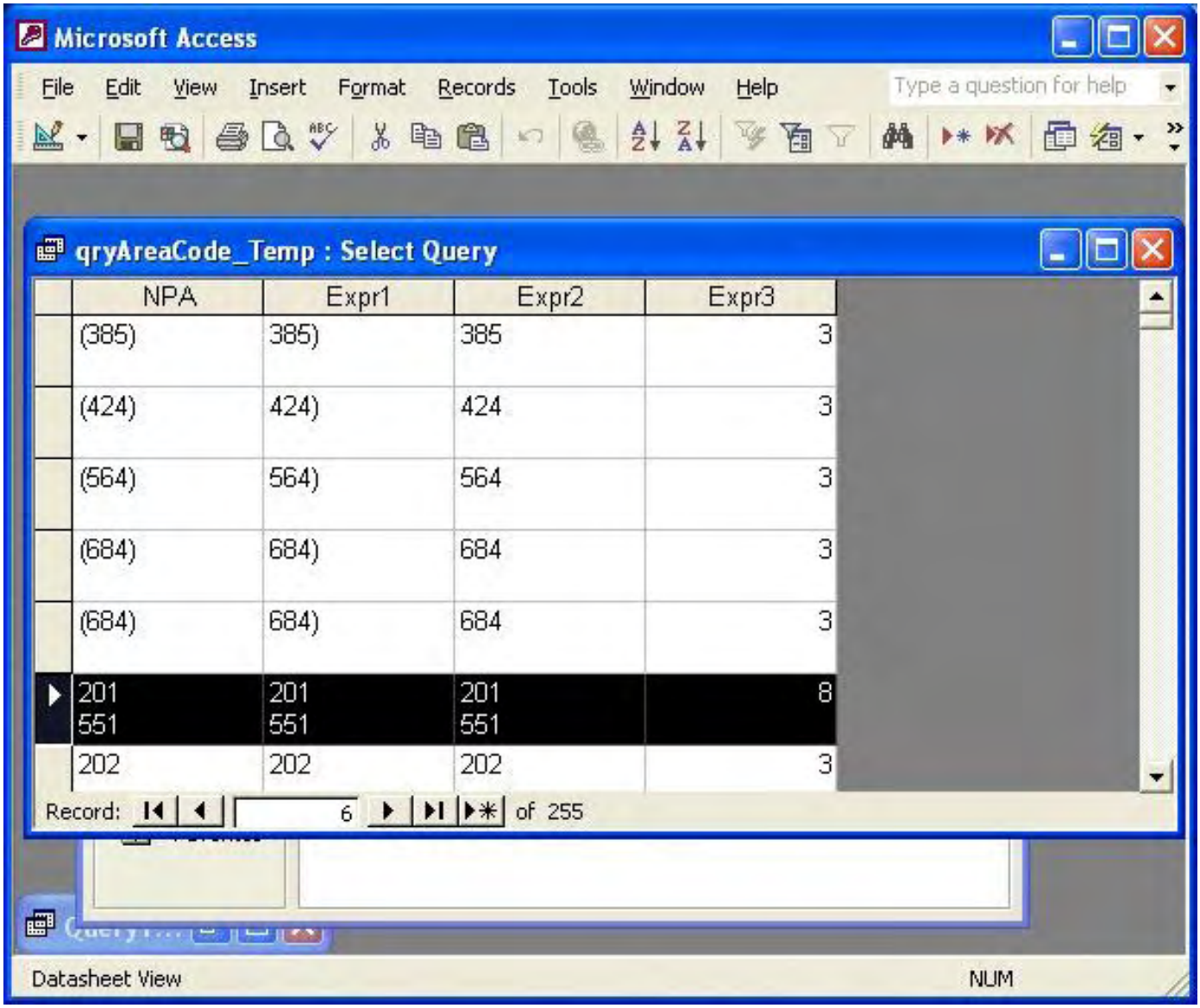

Figure 4. Data problem revealed.

OK, now what? First, let's evaluate the problem data. If you sort the data, descending, by the length column in preview mode, the problem cases appear at the top. We see that some end in a space-question mark. Others have either one, two or three sets of three-digit numbers.

Strip off the question mark and extra space by adding a new field with this:

```
Trim(Replace([expr2],"?",""))
```

The trim function is used to remove excess spaces at the beginning and end of the data. After removing the question mark, the trim will take off any spaces that remain.

Now, a little side discussion. Why is the data length 8 when there are two sets of three digits? Obviously, if the length were 6, you'd have a 6-digit number, so there must be another character to separate the two 3-digit numbers. But why is it 8 instead of 7? The answer goes back to the way Windows handles "new lines." Stuck inside the computer are a set of codes that represent each letter, number and special symbol. This code is called the ASCII code set. (ASCII = American Standard Code for Information Interchange. This dates back over 30 years and is used in almost every computer.)

Anyway, in the old days, computer work was done on teletypes—essentially computerized typewriters. Two special codes were set up to make the teletype go to the next line. One was the carriage return (since the printing head was referred to as the carriage, and you wanted it to return to the beginning of the line). The second was the line feed (since you wanted to feed the paper up one line).

In the Microsoft world, this "CR" and "LF" were carried forward and used to represent a "new line." In other systems, like Unix and the Mac, they use only one of these codes to indicate a new line. For this reason, transferring files between systems can cause some problems with improper spacing. So in Windows, those two codes are embedded in the data, separating the two 3-digits numbers, making 8 characters. Add another new line and 3-digit number, and you get a length of 13, the other data that you'll see.

So now that this is in place, how can we fix the problem? There are probably several solutions again. I'll offer one that has some minor side-effects that we'll deal with. If the data were more complex, I would probably write some VBA to manage it, but it's generally good to avoid writing VBA if Access can handle it, since computer code can have unexpected results when not created carefully (which is likely for anything bigger than a very small project.)

Since the data we want to split is now in the column named Expr4, we'll grab the first 3, middle 3 and right 3 characters, which should always be a 3-digit number. If we do this right, all values should be unique, but we're not really sure of the resulting data, so we'll want to update our table to warn us about duplicate values (since there's no good reason to have the same area code twice in our table.)

OK, so add the following three entries into three new columns:

```
Left(Expr4,3)
Mid(Expr4,6,3)
Mid(Expr4,11,3)
```

These will become new expressions Expr5, Expr6 and Expr7 and will either pull out the proper data from Expr4 or it will pull out nothing. That means that we will have to insert three columns into our table. Save this when you are happy with the results.

Now let's address the problem where we may have duplicate data appearing. Back in the Tables section, go to Design view for tblAreaCode. Select the AreaCode field and change the Indexed property to "Yes (No Duplicates)." This will prevent you from inserting entries. This should probably be applied to many other areas of the database, such as the StateName, CityName and most of your other lookup tables. However, that's a hassle, so I suggest putting it in as you need it, unless you have time to go through all of the tables. So save the new settings and close the window.

Back to Queries: Open a new query and let's try again. (You can close and discard the other query we started making, since in this case it's easier to start over.) Again, select the query we saved from the Queries tab. Add Expr5 to the first column. Since we may have some duplicates, we should probably filter them out before we try to insert, so go into SQL and add the word DISTINCT after the SELECT so you have this:

```
SELECT DISTINCT qryAreaCode_Temp.Expr5
FROM qryAreaCode_Temp;
```

Change the select query into an append query to tblAreaCode, appending the field to AreaCode and Run it.

When asked if you'd like to append 253 records, click on the Yes button.

Now replace Expr5 with Expr6 and Run again. Since we're still using the DISTINCT word in our query, we won't get any duplicates. Run and accept the 33 records that it tries to append.

Now we get a message similar to that in Figure 3, except that it indicates that there are six key violations. These are likely to be duplicate records. Click the Yes button to accept the other 27 records.

One more time, change the field to Expr7 and run the append query. Of the six records, two are detected as violations. Click the Yes button to accept the other four.

Next week, we'll find out which records were duplicated (and discarded.) That will show us some new techniques that may be useful. We'll also explore how to manage updates.

Rob has been in the computer industry for over 25 years and is currently a part-time teacher, offering classes in Excel, Access, Visual Basic, and a variety of other technical tools. He has loved *ComputorEdge* since 1990 and can be contacted at *RSpahitz@Dogopoly.com*.

Looking for a great boardgame? Grab a copy from DOGOPOLY.com (*dogopoly.com*) and have a dog-gone great time.

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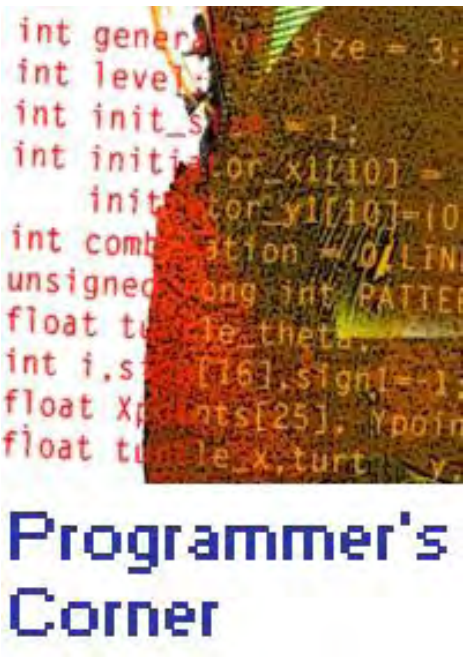

Introduction to REALbasic

"Part 2: Getting to Know REALbasic" by Wally Wang

The general idea behind REALbasic is to design your user interface, customize it, and then write BASIC commands to make your program do something.

Last week, "Part 1: The Roots of REALbasic" introduced this four-part series.

To learn how to program any computer, you essentially need to learn three different tasks:

• How to identify a problem and define a solution
• How to use a programming editor and compiler to create a program
• How to use the syntax of a specific programming language

The first, and most crucial task of programming is knowing the right problem to solve. If this sounds obvious, it's not. Government agencies and Fortune 500 companies have all been guilty of spending millions of dollars and years of programming—only to discover that nobody knew what problem they needed to solve in the first place. If you don't know what you want your program to do, you'll never be able to write a program that can do it.

Every program solves a problem by performing a specific task. A missile-control program solves the problem of hitting a target by aiming a missile as it flies. An inventory-management program solves the problem of tracking products stored in a warehouse. Even a video game solves the problem of entertaining someone by displaying animated characters on the screen that you can manipulate.

After you can clearly identify the specific problem to solve, you need to decide how you want your program to solve it. The specific steps that your program follows to solve a problem is called an algorithm.

Here's the secret about computer programming and problem-solving in general—there are literally an infinite number of ways to solve the exact same problem. The first step is to find any way to solve a problem. The second step is finding the simplest way to solve that problem.

For example, suppose your problem is how to add a series of numbers, such as the numbers 1 through 10. One way to solve this problem is to simply add each number in consecutive order, such as:

```
1+2+3+4+5+6+7+8+9+10 = 55
```

A less straightforward, but equally effective way to solve this exact same problem is to use the following formula:

```
        (L2 – F2 + F + L)/2
where F is the first number of the series (1 in this example)
      L is the last number of the series (10 in this example)
```

So using this formula looks like this:

```
        = (102 – 12 + 1 + 10)/2
        = (100 – 1 + 11)/2
        = (99 + 11)/2
        = (110)/2
        = 55
```

Notice that this formula calculated the same answer, but in a much less intuitive manner. Once you understand that there is more than one way to solve the same problem, you can choose the best method. This best method may be the one that's the easiest to follow and understand (such as adding all numbers consecutively), or that's easiest to implement in a programming language (such as using a formula).

Once you understand that programming is nothing more than problem-solving, you can start writing your solutions down in step-by-step fashion like a recipe, or what computer scientists call an algorithm. An algorithm simply tells the computer exactly which steps to follow in which order to solve a problem.

After you have identified both your problem and a solution for solving that problem, you're ready to start converting your solution into an actual computer program.

You can write a program in any programming language, just as you can say the phrase, "How are you?" in any human language from Spanish and Arabic to Swahili and Chinese. The specific programming language you use can determine how simply or elegantly you can create your program.

Every programming language is designed to solve different types of problems. The C language is designed for maximum efficiency, which is why the language uses lots of strange symbols and commands that resemble cryptic abbreviations. In REALbasic, the emphasis is on helping you create a program quickly using commands that resemble English, so you can write, edit, and understand them easily. As a result, writing and editing a program in REALbasic is much easier than writing that same program in C.

To write a program in REALbasic, you need to get familiar with the REALbasic IDE (Integrated Development Editor), which is just a fancy term for the REALbasic user interface.

At first glance, the REALbasic interface might look intimidating and confusing, but you'll see that it's actually pretty simple once you understand the purpose of each part, as shown in Figure 1.

The three main parts of REALbasic are:

- The Toolbox
- The Window
- The Properties palette

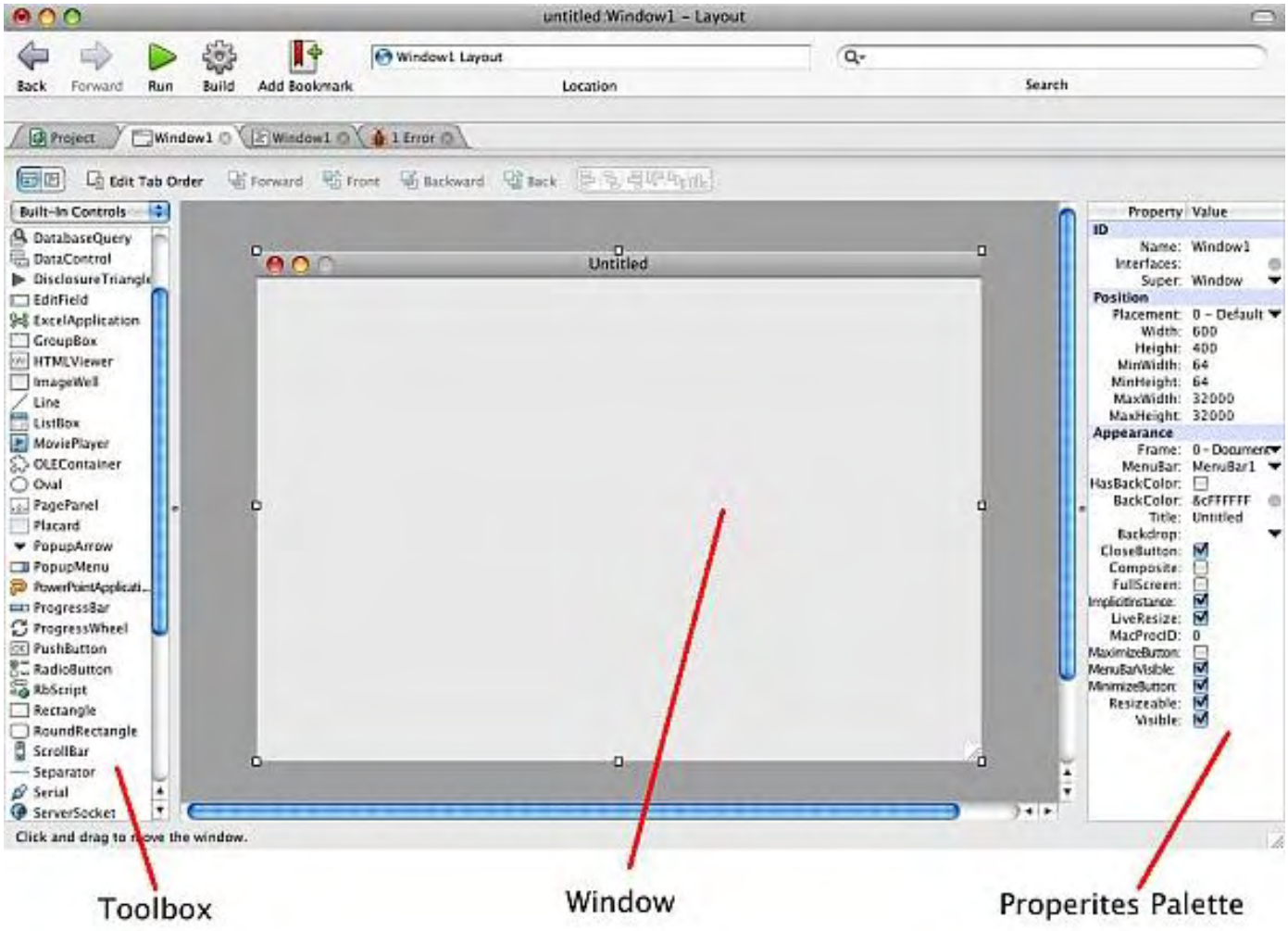

Figure 1. The Toolbox displays the parts of a user interface.

The Toolbox contains icons that represent different parts that make up a typical user interface. Some of the more common user-interface parts are buttons, check boxes, text and scroll bars.

Writing a program in REALbasic involves a three-step process:

1. Design your user interface.
2. Customize your user interface.
3. Write BASIC commands to make your user interface do something.

In REALbasic, the basic idea is that you first create your user interface (all the windows, buttons and other stuff that the user sees on the screen). When your user interface looks nice and pretty, you'll wind up with a generic user interface consisting of buttons or check boxes that you'll need to customize for your particular program.

The most common way to customize the parts of a user interface is to type the names of commands directly on different parts, such as typing "Cancel" on a button or "Male" or "Female" on two adjacent radio buttons.

After customizing your user interface, the final step is to write BASIC commands to make your user interface actually do something.

Designing a User Interface

The window, which appears in the middle of the REALbasic interface, represents the actual window that your

program displays on the screen. Initially, this window will be blank. Since displaying a blank window is relatively useless, you'll need to place objects on that window that let the user do something.

These objects, also called controls, appear in the left side of the screen, grouped together in the Toolbox. By clicking and dragging an icon off the Toolbox, you can place and resize it on your program window.

Some common types of controls in the Toolbox include:

• Check boxes
• Push buttons
• Radio buttons
• Text boxes
• Scroll bars
• Sliders

After you place a control on the window, you can drag the control on the window using the mouse until it appears exactly where you want it. Do this with enough controls, and you'll wind up with a generic user interface, as shown in Figure 2.

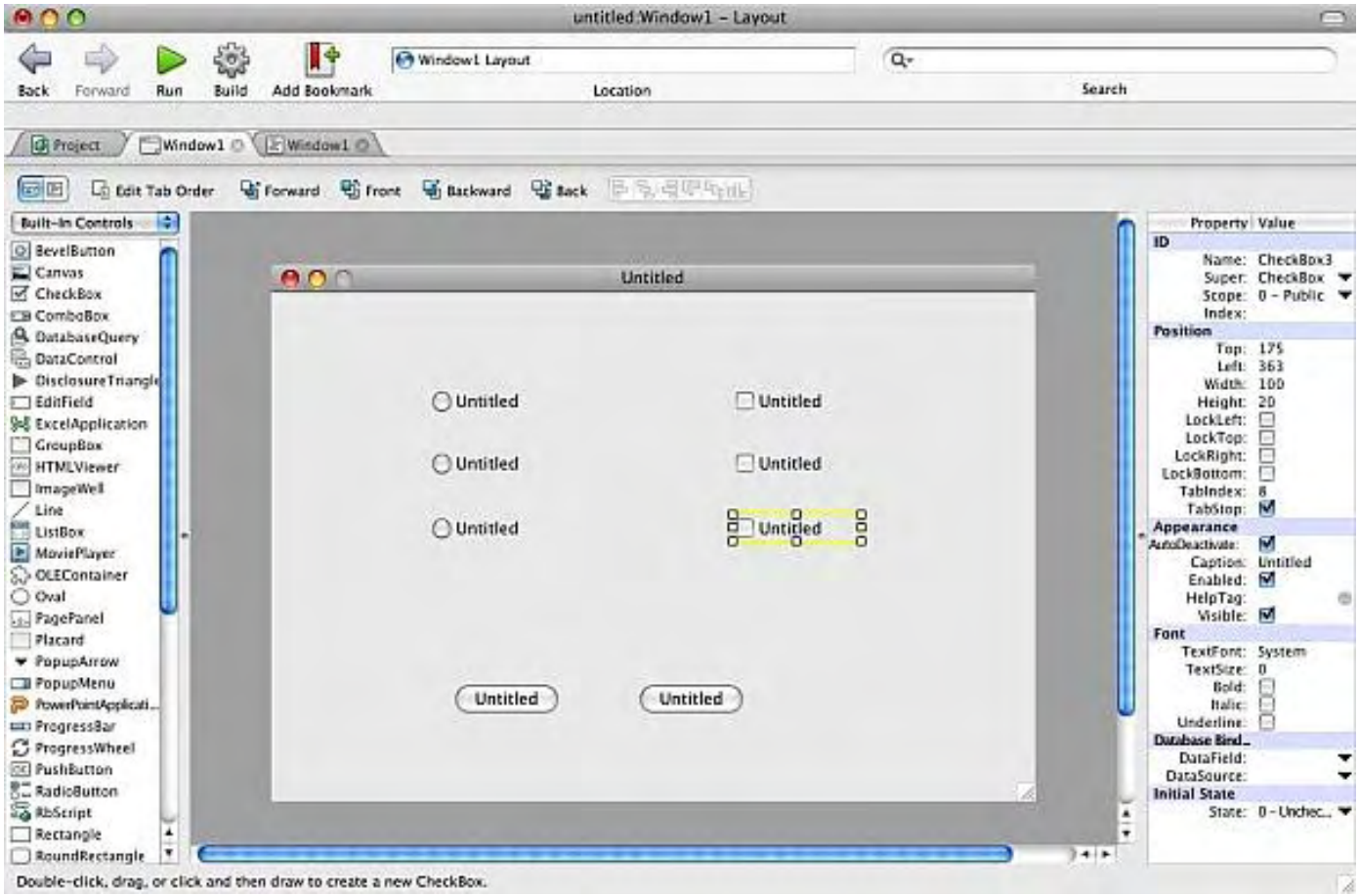

Figure 2. Creating a generic user interface by placing controls on a window.

Once you've created your user interface, you'll need to customize it so it displays information specific to your program, such as buttons that display labels like OK or Cancel. To modify a control, you'll need to change that control's properties using the Properties palette.

Properties define how a control appears. One common property is the Caption property, which displays text on a control. When you first place a control on a window, its Caption property will be Untitled. If you want your

control to display the word "OK," you'll need to change its Caption property.

Every type of control has different properties, but most controls share some of the following properties:

• Caption – defines the text that appears on that control
• Name – defines the name of the control
• Top – defines the position of the control from the top of the window
• Left – defines the position of the control from the left side of the window
• Width – defines the width of the control
• Height – defines the height of the control

By default, every control uses a generic name, such as PushButton1 or RadioButton3. The name of a control is important when you start writing actual program commands to make your user interface do something.

Although every control offers a half dozen or more properties, you don't need to change all (or any) of them. However, you'll probably want to change the Caption property to display unique text other than Untitled.

Writing BASIC Commands

After modifying the properties of your controls, the next step is to write actual BASIC commands to make your program work. Right now, your program might look nice but it won't do anything. If you run your program and click on any controls, nothing will happen.

To make your program work, you need to write BASIC commands. In the old days, writing a program meant creating a massive list of commands. In REALbasic, you simply write short programs, called event procedures, which tell that particular control what to do when an event occurs on it. The most common event is called the Action event, which occurs when someone clicks the mouse over that control.

To create an event procedure for any control, you must double-click on that control to open a code editor for that control, as shown in Figure 3.

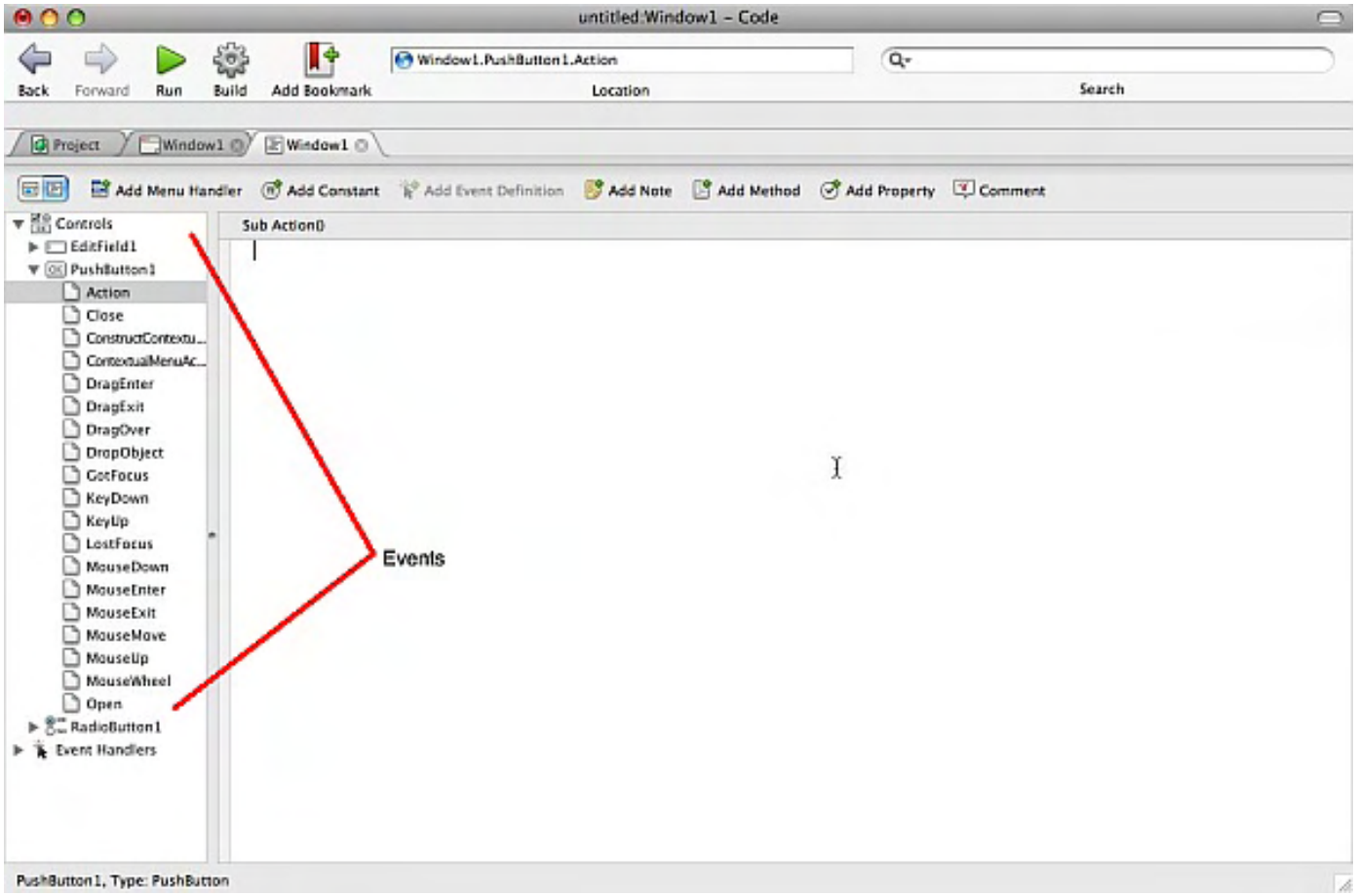

Figure 3. Double-clicking on a control opens a code editor for writing BASIC commands.

The left side of the editor window displays a list of different events your chosen control can respond to. For a push-button control, the most common event is the Action event, which occurs whenever the user clicks on that push button. Other types of events include DragOver (when the user drags something over a control) and MouseEnter (when the user moves the mouse pointer over a control).

If you want to switch to a different event procedure, just click on that event, such as clicking on MouseDown or Open. The top of the editor window displays the name of the event.

The general idea behind REALbasic is to design your user interface, customize it, and then write BASIC commands to make your program do something. Next week, we'll go through the steps in designing the user interface for a simple program and customize that user interface using the Properties palette.

Last week, "Part 1: The Roots of REALbasic" introduced this four-part series.

In the early days, before Wally became an Internationally renowned comedian, computer book writer, and generally cool guy, Wally Wang used to hang around *The Byte Buyer* dangling participles with Jack Dunning and go to the gym to pump iron with Dan Gookin.

Wally is responsible for *Microsoft Office 2007 for Dummies, Breaking Into Acting for Dummies, Beginning Programming All-in-One Reference for Dummies,* and *Mac All-in-One Reference for Dummies* from *www.dummies.com,* as well as, *Steal This Computer Book 4.0, Visual Basic Express 2005: Now Playing,* and *My New Mac* from *www.nostarch.com*. He is also the co-author of *Strategic Entrepreneurism* from *www.selectbooks.com*.

Every Saturday morning from 9:00 am - 10:00 am in San Diego, you can hear Wally with fellow co-hosts Dane

Henderson and Candace Lee, on the radio show CyberSports Today (*www.cybersportstoday.com*), which covers the video gaming industry on ESPN Radio 800 AM. Wally covers the military history side of the video game industry.

When not performing stand-up comedy or writing computer books, he likes to paper trade stocks with the video game Stock Reflex (*www.plimus.com/jsp/download_trial.jsp?contractId=1722712&referrer=wwang*).

Wally can be reached at *wally@computoredge.com*.

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Worldwide News & Product Reviews

"The latest in tech news and hot product reviews."
by Charles Carr

Web 2.0: Social E-ruption in Progress—Social networking can bring out the best in our society's people, governments and businesses; magicJack: For Internet Phone Calls—A review of the phone device; Free, Clean Renewable Energy for Gadgets—Barry Fass-Holmes' review of the FreeCharge 12V.

Web 2.0: Social E-ruption in Progress

Matthew Fraser and Soumitra Dutta, co-authors of *Throwing Sheep in the Boardroom: How Online Social Networking Will Transform Your Life, Work and World (*www.throwingsheep.com*)* (Wiley, ISBN: 978-0-470-74014-9, $29.95), sent us the following information on how Web 2.0 is changing the way we live, work and play:

In just a few short years, social networking has changed the way many of us operate in almost every area of our lives. Consider this day in the life of a typical Web 2.0er. (Let's call him Mark, a 20-something male.) Mark has 120 "friends" on Facebook, one who just helped him find his new job after he'd been fired from his previous job for being on his Facebook page during work hours. He follows seven people on Twitter, including his new boss who "tweets" daily about what's going on at (let's call it) CyberAcme, a company that makes a variety of products for Internet Age consumers. Mark is the company's corporate blogger. In today's post, he had to reassure worried customers that, rumors aside, CyberAcme would not be discontinuing a popular product. In a more stress-free post, he unveiled the company's new logo.

Most of us can relate to at least parts of this fictional scenario. Yet only a decade ago, we wouldn't have even been able to decipher some of the terminology. And that, say authors Matthew Fraser and Soumitra Dutta, reveals just how much social media have changed our lives in just a few years.

"The power of social media is turning old models on their heads," says Fraser. "In the Web 2.0 world, fans become celebrities, students become teachers, customers become producers, employees become bosses, citizens become politicians, Davids become Goliaths."

"We are entering an era of liberating self-awareness and self-reliance," says Dutta. "We have learned the value of cooperating with others. And we have, above all, felt the liberating power of consumer sovereignty and citizenship engagement."

According to Fraser and Dutta, Web 2.0 has changed and will change our world in the following ways:

Social networking puts the "social" in socialize. The introduction of social networking has changed the meaning of the word "friend." Not only can it now be a verb, as in "He 'friended' me on Facebook," but the noun form of the word has changed, too. In the Web 2.0 world, you have your real-world friends and you have your "friends," the people you keep in touch with through social networks like Facebook, MySpace and LinkedIn.

"It's never been easier to keep in touch with the huge number of people you've encountered in your life," says Fraser. "The irony is that your e-quaintances can be just as beneficial as your real-world friends, even if you rarely speak to them or see them in person. For example, if you're looking for a job, your immediate family and

close friends probably won't be much help. But you can greatly improve your odds by activating your online network of 'friends' in order to benefit from their connections. Though it's surprising to some, collecting online 'friends' has a function. It is not merely a hollow ritual for the vain, insecure and narcissistic."

It lets organizations enhance customer loyalty by forging more open relationships. Social networking has given consumers a platform on which they can voice their concerns about a company's product or service. And more and more companies are realizing that when they address these concerns, customers feel like they are truly being heard and are more likely to stay loyal.

Facebook is a great example of this. The social networking site experienced complaints because of two issues. One was the fact that it was very difficult for users to permanently delete their accounts. The second was an advertising program called Beacon, which monetized Facebook members by feeding their online commercial activities through a stream of stories to other members. The first issue saw users voice their concerns by creating a group on the site called "How to Permanently Delete Your Facebook Account," which counted more than 4,000 members. To protest Beacon, upset Facebook members went to MoveOn.org, which gathered 70,000 signatures supporting the claim that Beacon lacked an adequate opt-out function.

Though it took him some time, Facebook CEO Mark Zuckerberg eventually came clean on both issues on his blog. He apologized for the way both situations were handled and made some changes. From that point on, both problems were solved: It got easier for Facebook members to delete their accounts and Beacon switched from "opt-out" to "opt-in."

"By dealing honestly with Facebook users' protests, Zuckerberg was rewarded with customer loyalty, not punished by mass exit," says Dutta. "These events proved that when executed correctly, social networking tools can be invaluable for organizations. They make it easier for organizations to build a dialogue with customers, capture information for sharing, facilitate collaboration, promote knowledge management, test new ideas, manage media relations and attract new employees."

It facilitates open communication. In organizational settings, people tend to provide information to, and share knowledge with, those they know and like—especially if those people have helped them with favors in the past. While this instinct is understandable, countless studies have demonstrated that it's also counterproductive. When employees work in an "echo chamber" where colleagues invited to meetings mouth the same attitudes and viewpoints, the only winner is the status quo. And the really big losers are shareholders. Web 2.0 software tools knock down corporate silos, moats and walls by encouraging open communication and information sharing, says Fraser.

"Expertise and solutions to problems no longer remain 'hidden'—they are actively sought out and exploited. Since Web 2.0 tools foster transparent communication visible to all, the collaborative input of any employee, even far down the formal hierarchy, will be known, recognized and perhaps rewarded. Status and prestige incentives are thus built into the collaborative process. When collaboration is a win-win for everybody, buy-in is universal."

Social media opens the door to more innovation. Web 2.0 tools can offer competitive advantages to firms in sectors where innovation produces winners and losers. Senior executives in large-scale corporations are increasingly aware that innovation is not restricted to R&D departments, but is a dynamic social process. Steve Jobs has mentioned the importance of social interaction for innovation at Apple. And in fact, the list of major corporations using Web 2.0 software tools to promote productivity and foster innovation is growing: FedEx, Shell Oil, Motorola, General Electric, Kodak, British Telecom, Kraft Foods, McDonald's and Lockheed Martin.

"Multinational corporations like Procter & Gamble are outsourcing R&D Web sites to invite customer input, thus blurring the line between producer and consumer," says Dutta. "If customers are already helping P&G to

produce new brands of toothpaste and shampoo, they may soon be designing cars for the nation's carmakers."

It helps governments be more transparent. The Obama Administration is a good example of what having more transparent governments could look like in the future. He was the first presidential candidate to truly embrace Web 2.0 tools, so it makes sense that he would be leading one of the first Administrations to use social media to be more transparent. His methods of getting information out to American citizens—weekly video addresses, the blog on the *www.WhiteHouse.gov* site, the live blogs of events such as the vice president and his team's first Middle Class Task Force meeting and the White House Forum on Health Reform, and his e-mail updates—all play a role.

"Of course, President Obama isn't the only one in government using these tools," says Fraser. "We saw during his first address to Congress that many members of Congress were 'tweeting' their thoughts throughout his speech. And Newt Gingrich has become the Right's most prolific twitterer."

It empowers governments to more easily mobilize their constituents. On his visit nearly two centuries ago, Alexis de Tocqueville witnessed an America that was a robust civil society with an egalitarian spirit that motivated citizens to engage in all manner of voluntary associations. The prospect, nearly 200 years later, of harnessing these vigorous public-spirited energies not only in America but throughout the world, is surely a vision that should be encouraged.

"Again, President Obama, his campaign, and his Administration offer a nice glimpse into what is possible when governments use social media to call people to action," says Dutta. "During his campaign, Obama used an iPhone app, Twitter, a direct e-mail campaign, and many other ways to harness the energies of his supporters. As a result, they felt like they were part of the campaign and transferred that feeling of inclusion into action.

"Now there's *www.USAService.org*, a site originally created to encourage people to give back on Martin Luther King Jr. Day," he adds. "It allows people to create and find community service events and also provides links to other service sites that might interest them. People can post pictures to the site showing what they've done in their communities and can also sign up for the site's direct e-mail list."

It gives political and business leaders more control over their brand. An organization's brand or a politician's reputation can be damaged instantly, and irreparably, by the viral reactivity of social media. Smart politicians and business leaders know this. That's why so many of them are fighting fire with fire by using social media to protect their brands.

"Let's start with Obama," says Fraser. "During the campaign, he had a few million fans on Facebook, 112,000 followers on Twitter, attracted 18 million visits to his YouTube channel, and had 13 million supporters on his direct e-mail list of supporters plus 3 million on an SMS list. Social media helped him reach people in a way that he would never have been able to achieve solely through media coverage.

"Business leaders are also becoming wise to how social media can help them protect their good name and in turn create a stronger brand," he adds. "Some CEOs are even taking up blogging to manage their status, reputation and brand. These blogs can help leaders position their company as a 'thought leader,' build a dialogue with customers, capture information for sharing, test new ideas, manage media relations and attract new employees. There's nothing more powerful than being able to speak directly to those people who control their brands, constituents and consumers."

Online social networking is not merely a method of communication. Nor is it simply a by-product of a changing society. It's actually an instrument of that change. If used correctly and judiciously, it can bring out the best in our society's people, governments and businesses.

"We, indeed, are living at a time of great change," says Dutta. "The Internet has empowered us as individuals,

consumers, and citizens to take more control of our lives and organize ourselves spontaneously. With the Web 2.0 revolution, we are seeing, and will continue to see, these changes take root in every level of our lives."

magicJack: For Internet Phone Calls

While at CES last January, I passed by the magicJack booth and was handed the device to try. I had seen it advertised on TV many times. I popped open the package, briefly looked over the enclosed three-step instruction card, and was ready to give it a try. The device plugs into your computer's USB port and a conventional phone (corded or wireless) plugs into the other end. If your USB ports are crowded, they supply a short USB extension cable. They advise not to use a USB hub unless it is a powered hub. On two computers, when I attempted to connect the unit to a front USB port, it caused the computers to reboot. On one, I worked around the problem by plugging it in before I booted. On the other, I moved it to a back USB port.

If you are traveling and don't have a regular phone, there is a menu option to switch to a computer headset. There is no software CD. All the software is on the device. It takes several minutes for the device to install. When you register it, you supply the information necessary to assign you a phone number in your area code. There is a list of area codes available at the Web site. You can call numbers in the U.S., Canada, Puerto Rico and the U.S. Virgin Islands at no charge.

You can try it for 30 days free of charge. Visit *http://magicJack.com (*magicJack.com*)* and click on Free Trial. You will have to enter your billing information, but if the unit is returned within 30 days, you will not be billed. You can call from any country to the U.S. or Canada from a magicJack to a non-magicJack phone and it's free. You can call magicJack to magicJack in any country and it is free. If you call from magicJack to a non-

magicJack phone in a foreign country, you must prepay for international minutes. To call a non-magicJack phone in Italy, for example, costs two cents a minute. You can check the rates to various countries at the magicJack Web site.

A bit about pricing: The magicJack unit and the first year of service is $39.95. Thereafter, it is $19.95 a year. However, there are currently two specials. If you have a registered magicJack, you can buy five years of service for $59.95. If you are a new customer, you can buy the device and six years for $99.90. The former comes out to be $1 per month and the latter, $1.39 per month. If you want to buy prepaid international credits, they can be bought in increments of $5 or $10. The service includes local and long distance, directory assistance, voice mail, call waiting, three-way calling, call forwarding and caller ID. It also supports 911 service. The default 911 service is set to the address on your registration. However, when travelling, you can add other addresses from any country in the world so 911 service will know your location. There is also an add-in that allows you to dial directly from Microsoft Outlook. It works with Windows XP, Windows Vista and Mac OS X. Oh, and by the way, magicJack received PC Magazine's Editor's Choice 2008 Product of the Year award!

This is a great product.

Review contributed by Joe Nuvolini

Free, Clean Renewable Energy for Gadgets
Barry Fass-Holmes' review of FreeCharge 12V

FreeCharge 12V (*www.freeplayenergy.com/product/freecharge12v*) is to mobile devices as a bicycle pump is to bike tires. Forget about using fossil-fuel-generated juice from a wall outlet and lugging multiple power bricks when you travel. FreeCharge 12V reenergizes cell phones' and music players' drained lithium-ion batteries via a renewable and plentiful source—human crank-power.

This product consists of a 2 x 2.4 x 5.3-inch, bean-shaped case made of black and blue plastic molding that houses a three-phase alternator with three-phase rectification and a transmission (gears and shafts). At one end of the case is a ~16-inch cable leading to a cigarette lighter socket resembling the one in your car. On the case's front side is a flip-out, glass-filled nylon hand crank with a hub and bush at the end where the crank joins the case, and a knob for the user to grasp with thumb and fingers at the other end (see Figure 1).

Figure 1 shows the FreeCharge 12V with the crank retracted (left) and with the crank in action (right).

Eco-friendliness is the FreeCharge 12V's most important feature, and it begins with the product's packaging. The unit ships in a plastic wrap that is recyclable—it comes with a big, fat "#1" on the bulge for the FreeCharge 12V's body—and the informational insert is printed on recycled paper. In addition, according to its specs, the outer casing has been manufactured without environmental nasties (cadmium and chlorine), plus it is fully recyclable. Unlike other rechargers, however, FreeCharge 12V does not contain a battery that you recharge and then use to recharge another device; instead, crank-powered electricity flows directly to your mobile gadget with the aid of a third-party USB adapter that you plug into the aforementioned socket. Did I mention that FreeCharge 12V generates electricity without emitting greenhouse gases?

Social responsibility is theFreeCharge 12V's number-two virtue. It helps recruit supporters for the non-profit Freeplay Foundation (*www.freeplayfoundation.org*), which Freeplay Energy established in 1998 "to transform lives through dependable, self-sufficient and environmentally friendly technologies. We work primarily in sub-Saharan Africa with a special focus on the needs of orphans and other vulnerable children, women, refugees and people who are ill."

If saving the environment and/or humanity is not your thing, a third plus is the FreeCharge 12V's wallet-friendly $30 MSRP and two-year warranty against defective materials or construction. However, the package lacks a socket-to-USB adapter, so that's a separate purchase/cost if your mobile device also came without one.

This is a product that I really want to endorse, but hesitate to do so. What's not to like? For starters, although the FreeCharge 12V's minimalist packaging helps protect the environment, it lacks operating instructions (*www.freeplayenergy.com/resources/contentfiles/assets/images/602/image/FC12V%20instruction%20manual%20NEW.pdf*). The printed insert only refers the user to Freeplay's home page, from which you have to really dig deep to find them.

A potentially more serious consideration is FreeCharge 12V's ergonomics and usability. In my hands, the unit's bulk is a bit difficult to hold and crank for more than a few minutes at a time without fatigue, and its mechanism has an inherent resistance that could make cranking just plain daunting for a child or owner whose wrists possess ordinary levels of strength and endurance. What's more, the FreeCharge 12V requires a considerable amount of cranking to make a difference in recharging your mobile device. The company claims that 360 turns—about three minutes of wrist exercise or stress, depending upon your point of view—translates into nine to 11 minutes of talk time, while 60 seconds of cranking produces two to four minutes of talk time. Your mileage will depend upon a host of factors, including the brand and model of mobile device, signal strength, battery condition, etc. My testing involved an iPod touch, and despite the FreeCharge 12V's green LED indicating that electricity was flowing, I could not detect any movement in the touch's battery charge-level icon before my wrist (and patience) pooped out.

Lastly, FreeCharge 12V is made in China, which (at least in my mind) raises questions about whether the manufacturing process is environmentally friendly, sustainable and socially responsible. Unfortunately, I could not find any relevant answers on the printed insert or at the company's Web site.

In conclusion, the FreeCharge 12V's underlying concept has considerable merit and potential, the price is right, and this product could make a dent in your electric bill. If only its size, weight, and ease of use were comparable to that of hand-crankable flashlights, then buying FreeCharge 12V would be a no-brainer.

Review contributed by Barry Fass-Holmes

In addition to being an editor and columnist for *ComputorEdge* and *ComputerScene* Magazines, where he has written hundreds of feature articles and cover stories over the past decade, Charles Carr has also penned well over 1,000 non-tech newspaper and magazine articles and columns for various publications, including two widely-read columns each week for San Diego's *North County Times* newspaper.

Carr has covered such diverse topics as pesticide use in area schools, invasive background checks for county volunteers, asthma awareness, the debate over standards-based grading, potential vulnerabilities in electronic voting machines, and Southern California's devastating 2003 and 2007 wildfires. He has also written many humorous pieces.

Carr has also edited dozens of stories and articles written by others which have appeared in major publications and web sites across the country.

He has been a contributor and technical advisor to *L.A. and San Diego Parent* magazines and receives dozens of requests a year to appear on Southern California television and radio stations to talk about important events in the tech world.

Carr has judged many writing competitions including San Diego Press Club and Time-Warner Communications contests and was sole judge for the national NAPPA Tech Toys awards for five years (which his kids really appreciated). He was recently a judge for the national "Poetry Out Loud" competition.

He has won many writing accolades, including Press Club awards for Best Column Writing, Consumer Writing and Best Arts and Entertainment, and has repeatedly taken top honors in San Diego Songwriter's Guild competitions for his original musical compositions.

Carr will soon publish his first book, *What a World*, a collection of his best writings.

Learn more at *www.charlescarr.com*.

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EdgeWord: A Note from the Publisher

"Issue Review E-Mails" by Jack Dunning

A new "Issue Review" e-mail feature has been implemented, but opting out is an option.

I love your "Review of the last few issues of ComputorEdge *with links!"*

Many times with a busy life I don't have time to read all my e-mail and sometimes accidentally delete those that get caught with the "Click + Shift + delete" fast motions. This way, I get a reprieve the following week. Kudos!

Thanks, buddy.

Julianna

As many *ComputorEdge* subscribers may have noticed, we have started sending out a review e-mail each Tuesday. It lists the theme of the six most recent issues of *ComputorEdge* in reverse chronological order. The only purpose is to give people like Julianna a chance to look back—just in case there was something they hadn't had a chance to peruse. There are many people who are using the new e-mail.

However, not all subscribers are so enthusiastic about receiving another e-mail. They are already inundated with too many unsolicited messages. I certainly appreciate that sentiment and have implemented an opt-out procedure in the e-mail program, where subscribers can continue to receive the weekly issue on Fridays, but skip the Tuesday issue review. For anyone who wants to opt out of the weekly review, go to the *ComputorEdge* Subscription Page (*webserver.computoredge.com/subscript/subscriptlist.mvc*), enter your e-mail address (case sensitive) and Submit. (You can use the same link if you would like to sign up for a new subscription.) Click Edit Preferences, select the "Opt out of weekly past issue summary" radio button and save.

ComputorEdge currently has 6,811 e-mail active subscribers. These are the people who have allowed us to stick an e-mail in their face at least once week. They come from all walks of life and share a curiosity about what's going on in computers and on the Internet. Most of our subscribers are not geeks. (I know that there are a few nerds watching, but they are needed to help keep Digital Dave straight when he makes a mistake.) Our readers come in hopes that we will give them a little bit of useful information.

I am proud of the fact that *ComputorEdge* offers original articles and columns. While we do occasionally link to other Web articles (if relevant to the topic), unlike many other sites, we are not merely a list of links where you will find someone else expounding on a critical topic. My goal is for every issue each week to help our readers—if only a little bit.

Contributions from our readers are huge. I certainly appreciate each reader comment—for good or bad. Sometimes a one-line comment from a reader attached to the bottom of an article is all that's needed to fill a gap in the piece. Often a note to us will generate a topic for a column in the next issue. In many ways, the direction of *ComputorEdge* is driven by the questions and comments that appear in Digital Dave's column. Sometimes we address topics because no one is talking about it—maybe because the subject is too new.

Of course, we wouldn't be able to continue without our sponsors. Any patronage that our readers can give to them helps us to provide our service.

Jack is the publisher of *ComputorEdge* Magazine. He's been with the magazine since first issue on May 16, 1983. Back then, it was called *The Byte Buyer*. His Web site is *www.computoredge.com*. He can be reached at *ceeditor@computoredge.com*

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Editor's Letters

"Readers write in with letters to the editor." by ComputorEdge Staff

"Hard Drive Partitioning," "PDFs Looking the Same," "REALbasic"

Hard Drive Partitioning

[This letter is in regard to Digital Dave's March 27 column, where Dave addressed hard drive partitioning.]

Hurrah Dave! I share your philosophy of Windows hard-drive partitioning. Under most circumstances, partitioning workstation hard drives into multiple pieces in search of some security goal simply doesn't play out. What it does do is put the burden upon the user, so that every time new software is installed, an alternate partition must be directed so as to avoid "filling up" the O/S C: partition. In my experience, that is a much greater problem than any problems cured by multiple partitions on one physical drive.

-Bill Calderwood, San Diego

PDFs Looking the Same

[This letter is in regard to Digital Dave's March 20 column, where Dave addressed PDFs.]

I uses to think that PDFs would look the same on every computer. Recently I converted a document with a non-typical font to a PDF. On the original computer the PDF looked like what I created, but on another computer that didn't have that font, the PDF used a different font. This surprised me, since I thought that PDFs were graphic files of the original. I would expect this from a word processing file, but not from a PDF.

-Dennis, San Diego

If you need to be sure the printed copy of a PDF will be the same on all machines, you must embed the fonts when you create the PDF. Otherwise, Adobe will substitute for non-available fonts. For this reason, when I am sharing files, I always make sure to use a more or less universal font, such as Arial (yuck!) or Times Roman.

-Michael Bock, Oceanside, Calif.

REALbasic

[Regarding Wally Wang's new column, Introduction to REALbasic:]

Excellent! Just what I was interested in learning more about. I teach an electronics/computer class this fall.

I appreciate your archive. I need a good resource like this when researching computer issues. Keep it up!
I collected your magazine when it was printed in Albuquerque.

-Mark Burton, Albuquerque

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