*Stump the PC Club is a free tech-advice column written by members of the **North Orange County Computer Club**, which has been in existence since 1976. Visit the club's site at noccc.org.*

QUESTION: I just read your article on Spyware removal in the OC Register on June 1st. I have an older computer with XP on it that I would like to donate. I would like to reformat the drive to delete everything but do not have the original Windows XP install CD. It does not recognize an external drive to boot from as well. Any suggestions would be appreciated on how I can delete the files/directories on the drive.

PC CLUB: That's a great question. I've been installing new PCs for people and I'm always asked to destroy their old data. Booting from the Windows XP installation CD will allow you to format the C drive on your PC but believe it or no,t it does not prevent someone with experience from recovering the data. There's more to it than just deleting all of the files and folders.

There are many Undelete or File Recovery utilities that will allow even novices to recover deleted files and folders. For example, I've had people call me after accidently formatting their digital camera memory card and I can usually recover their photos.

Here's some background. File information is maintained in a directory so your operating system can find it. All that "deleting" does is erase the file's reference information. Your operating system can't find it, but the data is still there. That's what those "file recovery" programs look for: data in blocks that the directory says aren't in use. This is similar to removing an index card from a library catalog. You can still find the book but it's more difficult.

So, what should you do? If you want to donate the PC with all of your data permanently deleted you have several choices. There are programs that will do this for you and some are free. You should read the details of any program you're considering before using it. Here are several options:

1. If you're not planning on donating the PC you can open the case and remove the hard drive before recycling it. Place the drive in a safe place since you can always retrieve data from it at a later time by mounting it in an external hard drive enclosure. Be sure to get the correct enclosure since the drive could either be an IDE or SATA drive. You can also buy a USB to IDE/SATA device for $15 from Amazon at http://amzn.to/ide_sata. Once the drive is mounted in either of the

above, you can access it like any other drive. Alternatively, you can destroy the drive with a hammer.

2. Use a program such as Darik's Boot and Nuke, known as DBAN, which is avail for free at www.dban.org. This site allows you to download a special file called an ISO file that must be burned to a CD. After you burn the CD just boot from it and you can delete all files from your hard drive permanently. Some PCs will boot from the CD normally while others may not. When your PC is booting up, look on the screen for a message stating that you can hit a certain key for boot options.

3. Another program is Active Killdisk. There is a free version at www.killdisk.com that doesn't comply with Department of Defense standards but does a good job of coming close. This program will burn the CD for you. When you boot from this CD you have a choice to "Erase" the disk which will permanently delete all files and folders. Another option is to "Wipe" the disk which will wipe all of the free space on the drive. You can delete all of your personal files in Windows and use this CD to really wipe the files clean. This will leave the PC in an operational condition.

Summary:
- Using these tools requires patience since wiping or erasing a drive can require up to several hours.
- If you plan to donate the PC, use either of the above programs to completely erase the hard drive. You can also use Active Killdisk to just wipe the unused portion of the disk after deleting all of your sensitive data. This is not quite as safe a method since you may leave some data behind unintentionally.
- If you plan to recycle the PC either erase the drive or remove it.

Remember, if you "Erase" the drive and donate it, the new user will require a Windows CD to reinstall the operating system and they'll also have to locate all of the drivers for the PC hardware. *- Ed Schwartz, NOCCC member. View his Web site or submit questions at* www.edwardns.com*.*