How To Build A Computer Without Really Trying

I didn't start out trying to build a computer. My CD disk drive stopped working and I kept getting an error message which said, "This drive is not available." I went to the "my computer" file to check the status of the drive through the properties but the drive wasn't listed. I then went to the device manager to check the drives status but it wasn't listed there either.Now I'm not a computer whiz or computer "geek" but I do have some knowledge, although limited, as to how a computer works. After spending literally hours trying to figure out what happened to my CD drive, I finally decided to cross the line and venture into the unknown. I took the cover off the computer case. I had no idea what I was looking for so I started tinkering around to see if maybe something had come loose. Sure enough, a cable going to the back of the CD player was unplugged. I plugged the cable back in, put the cover back on, plugged in the power cord and pushed the power button to fire her up. I was kind of surprised to see that it actually worked. This got me to wondering how hard it would be to build a computer from scratch. I went searching on line to see if this was possible, something that I could do. After reading various articles and visiting numerous web sites I decided to give it a try.The first step was to determine what kind of computer I wanted. First and foremost it had to be fast. No sense going through all the trouble to build a dud. It also had to be capable of handling large video files, many photographs, and a vast amount of music (songs). And finally I wanted it to be a media center; capable of playing and recording music, playing and recording DVDs, downloading and playing games, and capable of playing cable television. I also wanted to be able to connect an overhead projector and have my wall as the screen while surfing the net. Once I decided what I wanted, I started looking for the components and or parts I would need. The first thing I needed was a case, or tower. I found out that there are guide lines standardizing case such as ATX Form Factor. This is a standardized case designed to accept certain motherboards, and thus determining the layout of the inside of the case. I found a great source for the parts I would need, in a online store named Newegg.Com. Although I didn't know it at the time, I quickly found out that in addition to a vast product selection, and very low competitive prices, their customer service was "top flight." Yes I highly recommend these guys.First on my list was a Rosewill R114A-SLV silver steel mid-tower computer case. This case came with a 400w ATX 20-pin main connector power supply. (See photo A). Next on the list was a motherboard. I needed an ATX Intel motherboard, (ATX meaning it would fit perfectly in my ATX mid-tower). For this I chose the ASUS P5P800 Socket T (LGA775) Intel 865PE ATX Intel motherboard. It is very powerful and affordable, and supports Intel's Pentium 4 processor®. This processor supports Hyper-Threading technology which, according to Intel's web site "results in more efficient use of processor resources, higher processing throughput, and improved performance on today's multithreaded software." This motherboard also comes with a 775 pin Land Grid Array (LGA-775) socket designed for the Intel® Pentium® 4 processor, and most importantly to me, a Users Guide.Next on the list was a processor. I chose the Intel® Pentium® 4 processor; 530J 3.0 GHz, 800 MHz FSB in the 775 Land package. This super fast processor comes with a heat sink and fan assembly which uses push pin technology to install. For memory I decided on Rosewill's 512 MB 184-pin DDR SDRAM DDR400 (PC3200), four times. For the hard drive I chose Western Digital's WDC1600®, 160 GHz 7200 RPM Serial ATA Hard Drive. I chose a Mitsumi 1.44 MB 3.5 Internal Floppy, a Rosewill DVD burner; model RD-162, and Rosewill CD burner; model RR-52, (both retail). With the exception of the floppy, all of my components were retail, IE, in original manufacturers packaging, etc. Also on my list were 2 80mm Sleeve, Blue LED light case cooling fans, a Sound Blaster Live® sound card, an ATI All In Wonder 9600® 8X graphics/TV card, a Dell® 17" Ultra Sharp flat panel monitor, wireless mouse and keyboard, HP Photo Smart 7660® printer, and Logitech Z 2300® speaker system.As you can see I did my homework. Before taking on this task, I didn't have a clue as to what a motherboard was, what was a CPU's function, what a hard disk was and what it was for, what if any compatibility issues I would encounter, and how all of this "stuff" worked together. So over the course of about three months I purchased all of these components. My very first mistake was that I ordered the ASUS P4P800SE instead of the ASUS P5P800SE. The P4P800SE is not compatible with the Intel P4 LGA-775 processor®. So here was a chance to test the service level of Newegg.com. I emailed them and explained my situation, and without hesitation they exchanged the motherboard and didn't charge me a restocking fee or freight. They acted as if they had made the mistake. Needless to say, I was VERY impressed. Once all of the parts and components were here, I laid everything out, identified everything, and read the users guide that came with the motherboard from cover to cover. Now was the "nuts and bolts" time, the time to put this thing together. The motherboard came with ten screws and ten felt washers which were used to attach the motherboard to the case chassis. I placed the felt washers over the holes on the chassis and placed the motherboard on top of the felt washers. Therefore the felt washers were between the chassis and the motherboard. I then secured the motherboard to the chassis with the ten screws. Next was installing the CPU. I found out real fast how sensitive a piece of equipment this was. There are 775 tiny pins or connectors that could easily get bent, and thus make the CPU useless. This I considered the most intimidating. However, I said a prayer, took my time, got the CPU lined-up correctly, and proceeded with caution. Perfect match! Perfect fit! The sweating was over. I then installed the heat sink and fan assembly onto the CPU with the push pins, (push down and twist clockwise). I then plugged the CPU fan cable into the connector on the motherboard labeled CPU_FAN. I then installed the Serial ATA hard disk drive into one of the internal bays. Then I installed the floppy disk drive. Next to install was the system memory. It's very important that you first "ground" yourself by touching the metal chassis before handling the Dual Inline Memory Modules (DIMM). This motherboard comes with four DIMM sockets enabling the use of various configurations, based on the amount of memory to be installed. I chose four 512MB DIMM modules, which kept it simple. I just unlocked the DIMM sockets by pressing the retaining clips outward. Next I aligned the DIMM on the socket so that the notch on the DIMM matched the break on the socket. By pushing straight down, I firmly inserted the DIMM until the retaining clips snapped back into place. I then installed the DVD optical drive in the first bay, and the CD optical drive in the second bay. This particular case has flip up doors which conceal the optical drives. I then installed a network card into one of the five PCI slots and secured it to the chassis with screws. Next I installed the ATI All In Wonder9600® graphics card into the Accelerated Graphics Port (AGP) slot. This motherboard only supports a 1.5v or 0.8v AGP card which is keyed to fit into the AGP card slot. Next, was time to set the "jumpers." The jumpers are set to determine how a part of

the computer will function. For example, there’s a three pin keyboard power jumper which lets you enable or disable the keyboard wake up feature. There’s a jumper cap that covers two of the three pins to determine the jumpers function.Next came the fun part, the internal connections. I connected the FDD to the floppy disk connector with the FDD signal cable. Then I connected a power cable to the FDD. Next I connected the serial ATA hard disk drive to one of the two SATA connectors with a serial ATA signal cable, and then connected a power cable to the hard drive. I then plugged in the CPU fan connectors, the serial (COM) port module cable to the serial port connector, two USB 2.0 ports, and game module. I then connected power cables to the two optical drives. Next I connected the ATX power connectors (24-pin EATXPWR, 4-pin ATX12v), the internal audio connector (4-pin CD, AUX), front panel audio connector (10-1 pin FP-Audio), and last but not least, the system panel connector (20-1 pin Panel). The system panel connector is color coded so connecting it was fairly simple. I then replaced the system case cover, connected the monitor, the wireless receiver for the keyboard and mouse, the speakers, and the power cord. I then plugged the cord into a wall outlet. Now for the moment of truth! I pushed the power button. Nothing happened! No lights on system panel, no onboard LED light, no CPU fan running! Nothing! Needless to say I was crushed. All of this work for nothing. I started wondering what I could have done wrong, or was it some kind of compatibility issue.I went back to the beginning and retraced all of my connections, and they were all correct. After about an hour of tracing and retracing my steps it hit me. There was no power coming into the system! I then plugged in a lamp to test the outlet, and it worked fine. After going over everything again and again I realized that maybe, just maybe the felt washers were somehow preventing a connection. It was worth a try so I uninstalled everything, and I mean everything! I then took out the motherboard, removed the felt washers, replaced the motherboard, so that it was in direct contact with the case chassis, put the felt washers on top of the motherboard, and then tightened the motherboard to the chassis with the ten screws. I realized that the only instruction not in the users guide was the correct placement of the felt washers! I then reinstalled everything. When I plugged the power cord into the wall outlet the onboard LED light came on! I pushed the power button and she came right on. It worked! Oh how happy I was. I then went into the BIOS (Basic Input/Output System) and followed the steps to set the many different parameters to control the operation of the computer. With the users guide, these were pretty easy to set. Once I finished setting the different parameters I installed the operating system, Microsoft Windows XP® with service pack II. Seeing the ASUS logo followed by the Windows XP logo was one of the most gratifying parts of this whole ordeal. I was thrilled!My computer worked flawlessly the first time I used it, and has worked flawlessly every since. I can watch TV programs, search the internet at super fast speeds (with cable modem), download songs and create a play list, create photo disk, and albums, listen to AOL radio, watch videos, watch DVD movies, play games, Call Of Duty, The Big Red One®, and print excellent photos. This computer is awesome! Overall this was a very intense learning experience. Once I was committed there was no turning back, because too much money had been spent. By the way, I already owned a desktop computer system made by a highly respected manufacturer. I paid close to $1,100 for the complete system and it has no where near the capabilities of the computer I just built. There is just no comparison. And I spent a whole lot less building my own, actually saved hundred of dollars. I priced major name brand computers with the power and capabilities of the one I just built and the cheapest came to about $2,200. Unbelievable! Just goes to show, anything is possible if you stick to it, and more importantly, if you have the Lord on you side…

About the Author

Wireless Freedom, Optical Precision, and Style at an Outstanding Price. The advanced hardware 800 dpi optical sensor improves.